WSX47 – Outcomes tables commentary

Business plan 2025-2030

Wessex Water
YTL GROUP

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WSX47 – Outcomes tables commentary

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This supporting document is part of Wessex Water's business plan for 2025-2030.

Please see 'WSX00 – Navigation document' for where this document sits within our business plan submission.

More information can be found at wessexwater.co.uk

Annexes - None

1. Performance commitment narrative (OUT1-5)

The rationale for our proposed performance commitments are outlined in the following commentary. The below summary highlights where the narrative is held for each column in tables OUT1-5.

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ODI rates

As per the final methodology, we have used the Ofwat prescribed standard outperformance and underperformance payments. We have written in any relevant performance commitments narrative where the proposal does not match the intention of the performance commitment rationale and associated incentive mechanism. Please note

that in section 3.4 we have provided a commentary on the process followed to obtain these ODI rates as they were published late in the price review process.

1.1. Water Supply interruptions (PR24_WSI_WSX)

1.1.1. Introduction

The purpose of this common performance commitment is to incentivise companies to minimise the number and duration of supply interruptions.

This is an existing PR19 mandatory PC with a common reporting methodology and there have been no material changes to the definition for PR24.

As reported in our APR23 commentary our historical data is in accordance with the requirements for Water supply interruptions in IN 23/03 Expectations for…annual performance reporting 2022-23 and no adjustment have been made to previous reporting for the 2020-21 and 2021-22 period.

PC units: Hours:minutes:seconds (HH:MM:SS) per property per year

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

The number is calculated by adding up the sum of all individual interruptions (multiplying the *number of properties with an interruptions ≥ s hours × the duration of interruptions*) and then dividing by the total number of properties supplied (year end) = average number of minutes lost per customer.

1.1.2. Our long-term ambition

2050 target: zero

At the heart of our Strategic Direction Statement (SDS) are eight outcomes, all co-created with stakeholders focusing on long-term ambition.

Safe and reliable water supply is one of these outcomes, and we have set ourselves the stretching aspirational target of zero interruptions of longer than three hours by the year 2050. Our customers rated the safe and reliable water supply outcome 1st in their relative ranking.

We are currently delivering industry leading Water and Sewerage Company (WASC) performance for this PC. As detailed in our long term delivery strategy, we are planning to retain our current level of performance in 2025-2030 and 2030 to 2035, and to gradually reduce to zero thereafter once new technology and innovation makes this affordable.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.1.3. Our performance and proposed baseline

Historical performance

Table 1 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	n/a	n/a	n/a	00:24:00	00:21:18	00:16:00	00:12:00	00:12:00	00:12:00

Performance from base expenditure	00:35:54	00:25:48	00:26:48	00:20:42	00:14:48	00:13:19	00:12:34	00:06:05	00:07:52
Step change in performance from enhanced expenditure	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Overall performance	00:35:54	00:25:48	00:26:48	00:20:42	00:14:48	00:13:19	00:12:34	00:06:05	00:07:52

Reporting of this measure was introduced by Ofwat in 2011/12 with PC targets first being introduced in the PR14 Final Determination as shown above.

The significant reduction in supply interruptions since this new metric was introduced is a result of continual improvement in our processes and procedures and investment in new ways of working and new equipment. Improvements have included:

- **Line stopping and under pressure techniques:** reducing planned interruptions to effectively zero through the business as usual use of line stopping and other under pressure techniques to undertake almost all planned works without an interruption. On mains renewal schemes this can limit the techniques employed and it is perhaps worth a wider debate in the industry over costs and inconvenience and what serves our customers best. On most mains renewal schemes where necessary we utilise temporary overland pipework to keep customer supply interruptions to less than 3 hours, this does come with a significant cost impact.
- **Network response coordinators (NRC):** this is the most important initiative put in place for unplanned interruptions and most of the following other initiatives will be less effective if not supported by the NRC's. We now have six people supporting a 24/7 365 dedicated supply interruptions controller in our control room with full access to all company systems to support the people in the field. This enables us to best use of the "golden first hour" of any event.
- **Network infusion:** where rezoning of the distribution system cannot get all customers back in supply, network infusion can achieve this. Early call out of resources is key to the success of this initiative but will mean that they are often stood down without being used. We now have a pool of tankers with appropriate ancillary equipment ready to go at short notice to provide the best chance of maintaining supplies to customers who otherwise would remain out of supply if no rezone option is available.
- **Real time data:** We are still installing even more additional pressure monitoring in key locations across our network so that we can become aware of a service failure almost immediately and this gives us the facility to react faster to restore supplies.
- **Increased equipment:** we have purchased additional equipment to reduce interruptions. This includes line stopping kits, standpipes that allow infusion through a loose jumper hydrant and pressure loggers for inspectors to deploy during an incident.
- **Awareness and cultural change:** staff are aware of the changing focus from "repair the failure as quickly as possible", to "how do we get customers back in supply as quickly as possible and then deal with the permanent repair".

Our current performance

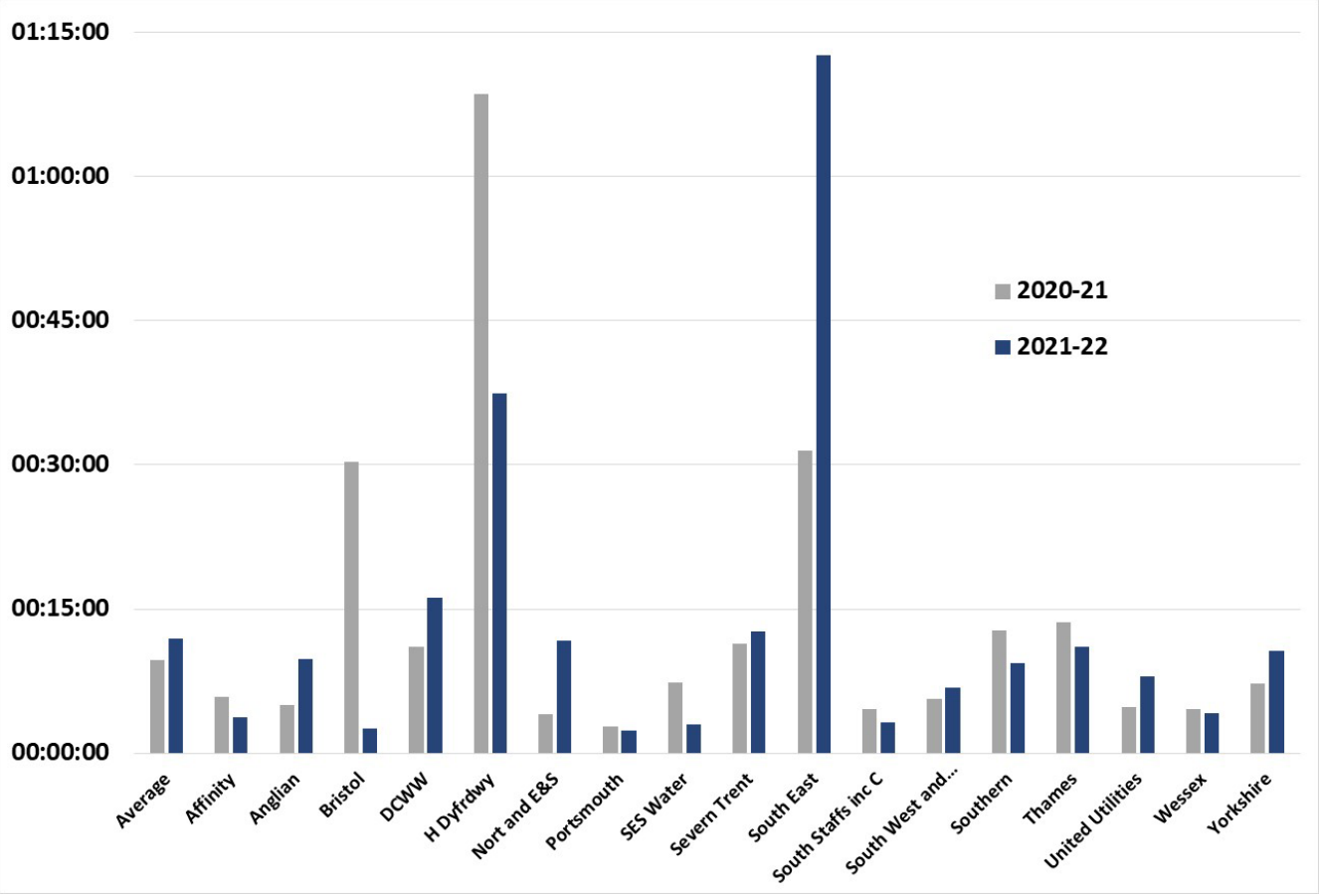
Table 2 – PR19 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	00:06:30	00:06:08	00:05:45	00:05:23	00:05:00
Performance from base expenditure	00:04:34	00:04:12	00:04:10	00:05:00	00:05:00
Step change in performance from enhanced expenditure	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Overall actual performance	00:04:34	00:04:12	00:04:10		
Forecast overall performance				00:05:00	00:05:00

We have maintained a further significant reduction in supply interruptions in the last three years as a result of continual improvement in our processes and procedures detailed in the previous section.

The following Figure shows our historical and current performance in the context of the wider industry.

Figure 1 – Performance comparison



We are an industry leader, and we are operational staff are committed to getting customers back into supply as soon as possible.

Proposed PR24 baseline

Proposed baseline: 00:05:00

Rationale: Our proposed baseline matches the PR19 2024-25 final determination PC level, and this is what we have effectively been funded to deliver.

We are not proposing any improvement from base in the AMP8 period. This is because a lesson learnt from our delivery in years 2020-23 has been that forcing down supply interruptions is not cost effective in delivery and therefore not best for customers, based on current technologies available.

1.1.4. Proposed Performance Commitment Level

Performance commitment level

Considering our current leading performance and that we are not asking for any enhancement funding for supply interruptions at PR24 we propose the following performance commitment level equal to the end of AMP7 PCL to reflect the optimum delivery efficiency currently achievable for customer benefit.

Table 3 – Proposed performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	00:05:00	00:05:00	00:05:00	00:05:00	00:05:00
Step change in performance from enhanced expenditure	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Proposed PC level	00:05:00	00:05:00	00:05:00	00:05:00	00:05:00

Rationale for PC level:

We have consistently outperformed the tightening target level, however, we have currently exhausted the process and technology improvements currently available. Performing better than the proposed target would result in less cost-beneficial solutions with negligible benefit to customers.

How will we maintain our service

We are not proposing any enhancement expenditure in AMP8 and anticipate that maintaining our current level of performance will still deliver leading performance in AMP8.

We recognise the risk that we may experience major incidents in AMP8 and that this will present a challenge for us to maintain our leading performance. Continual improvement in our processes and procedures detailed in the previous section coupled with learning lessons from near miss events will minimise the impact of any future major events.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of zero in 2050. Our profile to achieve this in the context of our 2025-30 proposed PC level is as follows:

Table 4 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	00:05:00	00:05:00	00:05:00	00:03:00	00:01:30	00:00:00

This profile of performance is in the best interest of customers because the innovation and new technology needed to achieve these aspirational long term targets in an affordable manner are not yet available, see our LTDS for more detail.

This profile of performance is in the best interest of customers because:

- We already perform as an industry leader and best of the water and sewerage companies.
- Delivery experience has shown that with current technology available achieving a better performance level starts to become less cost beneficial as the removes the lower cost delivery solutions.

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 5 – Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	00:05:00	00:05:00	00:05:00	00:05:00	00:05:00
Step change in performance from enhanced expenditure	00:00:00	00:00:00	00:00:00	00:00:00	00:00:00
Total performance	00:05:00	00:05:00	00:05:00	00:05:00	00:05:00

1.1.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.392m outperformance and -£0.392m underperformance payment

Proposed standard ODI rate: £0.392m outperformance and -£0.392m underperformance payment

1.1.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 6 - P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	00:10:00	00:10:00	00:10:00	00:10:00	00:10:00

P10 rationale: set just above the 2019/20 reported performance which represents a reasonable worst case scenario for the 5 year AMP8 period, ie based on two difficult trunk main failures in the same year. The following is an extract from our APR20 commentary that demonstrates the potential sensitivity of this measure to individual issues:

In 2019/20 we were forecasting an even lower number until the last month of the report year when we experienced two significant incidents:

- *Just before 05:00 on the 4th March we had a failure of an 18" (450mm) Cast Iron trunk from our Maundown Water Treatment Centre (WTC) on the edge of Exmoor the supplies an extensive area of West Somerset. A major incident was declared, and we utilised all of our available resources across multiple departments and teams to maintain supplies to as many customers as possible while at the same time undertaking a technically challenging repair. This one incident added 1 minute and 34 seconds to our reported figure for 2019/20*
- *Just before 15:00 on the 28th March we had a failure of a 10" (250mm) PVC main near Calne which put nearly 5,000 properties instantly out of water, rezoning of supplies was implemented as quickly as possible and again a concerted effort across a number of teams enabled us to minimise the impact of this significant event that resulted in 1 minutes 14 seconds being added to our reported figure for 2019/20.*

The improvement in our processes and investment in new ways of working mitigated the impact of these major incidents which otherwise would have resulted in much greater impact on customers supplies.

Table 7 - P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	00:04:00	00:04:00	00:04:00	00:04:00	00:04:00

P90 rationale: The last three years we have reported numbers 04:34, 04:12 and 4:10. During this three year period we did not experience any of the large events quoted previously in the P10 rationale. Hence it represents our best possible performance with current technology and resources and therefore we have set the P90 at just under this.

1.2. Compliance risk index (CRI) (PR24_CRI_WSX)

1.2.1. Introduction

CRI is a measure designed by the Drinking Water Inspectorate (DWI) to assess the risk arising from treated water compliance failures and it aligns with our risk-based approach.

This performance commitment incentivises the company to fully comply with statutory obligations, limit and resolve water quality failures effectively, which promotes customer confidence that water is clean and safe to drink.

CRI was also an AMP 7 performance commitment, and the definition has remained the same.

PC units: Numerical CRI score, reported to two decimal places.

1.2.2. Our long-term ambition

2050 target: 1.5

We continually strive to achieve a CRI score of zero, however, the increasing tightening of regulatory expectations and statutory obligations means it will be excessively expensive to provide the resilience to ensure we consistently achieve this ambition. Therefore, we believe a deadband set at 1.5 is needed to ensure penalties are not incurred for industry leading performance.

We are committed to continuing to deliver water quality improvements and with a stable regulatory environment this would be reflected in an improving CRI target. However, there are changes planned for tighter regulation and enforcement of a variety of different parameters that contribute to CRI. For example, the tightening of the lead standard as we head towards 2050.

There are also potential emerging challenges from PFAS and climate change which will see the industry having to respond in new and potentially novel ways to move and treat source waters. This will require the most rigorous water resource and investment planning, all of which may see industry-wide changes in the trajectory of CRI scores.

Monitoring strategies and population growth during the next few AMP periods is also likely to have an effect on this index with the creation of larger Water Quality Zones, which may contribute to higher scores where failures of the regulatory standards occur.

So, taking all of these factors into account, our projected industry leading performance will result in a broadly stable CRI target in the long-term which we believe will continue to be at or close to industry leading.

1.2.3. Our performance and proposed baseline

Historical performance

Table 8 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	-	-	-	-	-	-	n/a	n/a	n/a
Performance from base expenditure	-	-	-	-	-	-	0.52	0.87	0.88

Step change in performance from enhanced expenditure	-	-	-	-	-	-	n/a	n/a	n/a
Overall performance	-	-	-	-	-	-	0.52	0.87	0.88

CRI was introduced as a metric in 2017-18 so no previous years' performance, and prior to 2020 it was not a performance commitment.

Since CRI was introduced as a metric, we have each year achieved one of the best scores within the industry.. We use a risk-based source to tap Drinking Water Safety Plan (DWSP) approach to ensure we are aware of our biggest risks and ensure robust mitigation or control measures are put in place to help prevent sample failures. Where sample failures do occur, we carry out a thorough investigation to resolve any issues in a timely manner to prevent further issues.

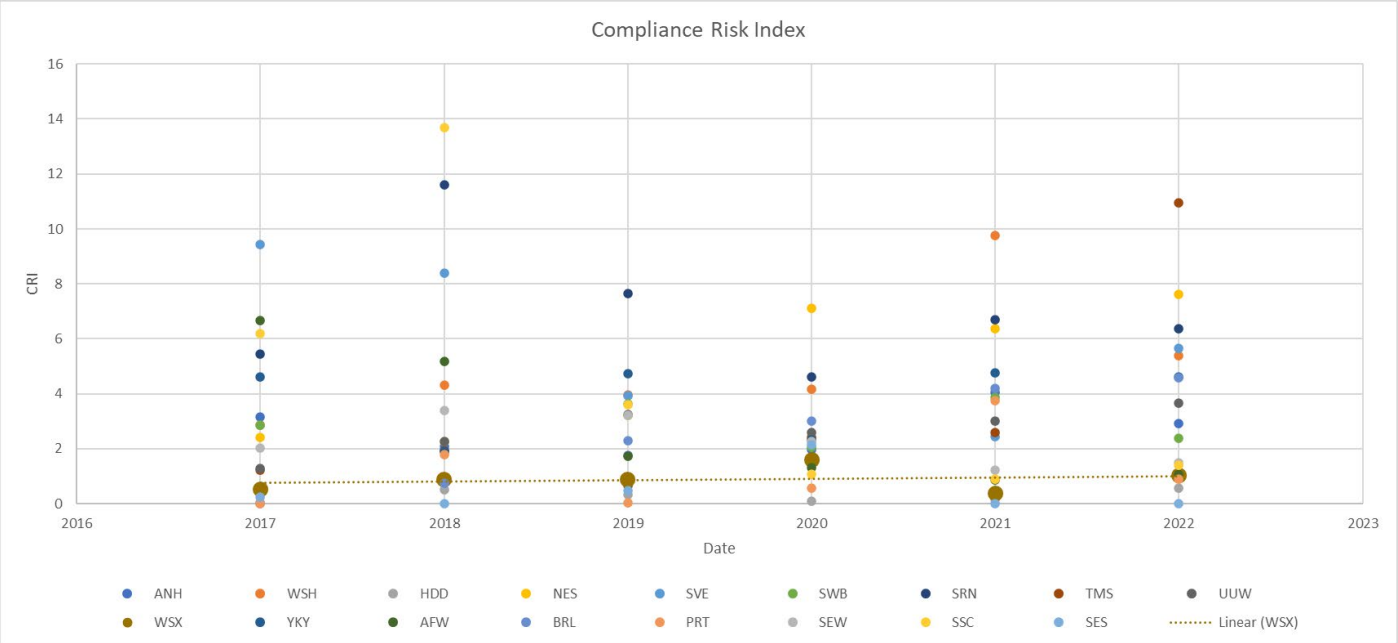
Our current performance

Table 9 – PR19 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	0.00	0.00	0.00	0.00	0.00
Performance from base expenditure	1.61	0.37	1.04	1.50	1.50
Step change in performance from enhanced expenditure	0.00	0.00	0.00	-	-
Overall actual performance	1.61	0.37	1.04		
Forecast overall performance				1.50	1.50

We received no enhancement funding at PR19 for improving performance against CRI, nevertheless, we continue to perform well on CRI in AMP 7, achieving the highest score of all water and sewerage companies for the past 2 years. Whilst we have not been able to improve our score year on year, we continue to learn from the lessons of previous failures and use a risk-based approach to optimise our totex investment in order to remain an industry leading performer. Figure 2 demonstrates our strong performance, highlighting our historical and current performance in the context of the wider industry.

Figure 2 – Comparative industry performance



Whilst we perform beyond the upper quartile, we continue to strive to improve. Additional measures being introduced in AMP 7 to help ensure we maintain our position as an industry leader include:

- An improvement in our reservoir and tank inspection frequency,
- The flushing program has been significantly increased,
- We have completed schemes to upgrade asset health,
- Increased the number of lead pipes replaced each year,
- Started to use flow cytometry to help to investigate and understand sample failures.

Proposed PR24 baseline

Proposed baseline: 1.50

Rationale: We recognise that Ofwat have set a target of 0 for PR19 but we have assessed our historic performance, the changing regulatory landscape and future pressures on the network (set out in more detail in section 1.2.2) and determined that 1.5 is a suitable baseline of performance to be delivered from base expenditure. This also considers that no additional enhancement expenditure was provided in AMP7 to support a step change in performance and this figure reflects the current

How we propose to maintain our service

We are not anticipating a step change in our industry leading CRI performance and our PR24 business plan is a continuation of our commitment to operate and maintain our assets and proactively manage arising issues to minimise the risk of compliance failures. Examples of commitments within our business plan include.

Lead

Our AMP8 lead strategy is a twin track approach of plumbosolvency control and a proactive pipe replacement programme which maximises public health benefit. We will continue to offer to replace the customer supply pipe, up to the outside of the property, when we replace the communication pipe.

Enhanced catchment management

Catchment management proposals for PR24 include the continuation of work at the 19 existing sources for nitrate. Catchment work in all of our surface reservoir catchments is proposed for PR24, which will continue to focus on pesticides, sediment and nutrients. The objective is to develop our ability to predict the type and timing of potential pollutions (particularly from agri-chemicals) more effectively.

Disinfection improvements

We have recently updated our approach to raw water categorisation and disinfection, and adopted the approach recommended by the WHO. A substantial investment programme based on risk over a number of investment cycles will be needed to include a disinfection stage at all sites where we currently practice marginal chlorination in order to achieve full compliance with this disinfection policy.

1.2.4. Proposed Performance Commitment Level

Performance commitment level

In PR19, OFWAT and the DWI provided a mandatory performance commitment target of zero. We support this and continue to target 0.00 but do not believe we should be financially penalised for achieving upper quartile industry performance. Should Ofwat propose a PCL for PR24 of zero we would seek a deadband equal to our performance from base expenditure which is 1.50.

Considering our performance from base expenditure and continual improvement to maintain our current service in the context of changes in the regulatory landscape and future pressures, we propose the following performance commitment level:

Table 10 – Proposed performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	1.50	1.50	1.50	1.50	1.50
Step change in performance from enhanced expenditure	0.00	0.00	0.00	0.00	0.00
Proposed PC level	0.00	0.00	0.00	0.00	0.00
Proposed deadband	1.50	1.50	1.50	1.50	1.50

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 1.50 in 2050. Our profile to achieve this in the context of our 2025-30 proposed PC level is as follows:

Table 11 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	1.50	1.50	1.50	1.50	1.50	1.50

This profile of performance is in the best interest of customers because:

- We already perform as an industry leader and best of the water and sewerage companies.
- We achieve this leading level of performance through base expenditure only, and with the sensitivities in performance, any guaranteed step change in performance will require a disproportionate enhancement totex investment which would not add value to customers, particularly when compared to other customer priorities.

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 12 - Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	1.50	1.50	1.50	1.50	1.50
Step change in performance from enhanced expenditure	0.00	0.00	0.00	0.00	0.00
Total performance	1.50	1.50	1.50	1.50	1.50

1.2.5. Outcome delivery incentive

Incentive type: Underperformance payment only

Ofwat standard ODI rate: -£0.343m underperformance payment

Proposed standard ODI rate: -£0.343m underperformance payment

1.2.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 13 - P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	7.27	7.27	7.27	7.27	7.27

P10 rationale: This is based on our previous 5-year average CRI score (0.954) + the addition of a worst case scenario of a compliance failure at our largest water treatment centre (6.313).

Table 14 - P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	0.30	0.30	0.30	0.30	0.30

P90 rationale: Marginal improvement from our best previous performance (0.366 in 2021), given no enhancement funding for step changes and ignores the potential impact of additional DWI expectations.

1.3. Customer contacts about water quality (PR24_WQC_WSX)

1.3.1. Introduction

This performance commitment incentivises the company to reduce the number of water quality contacts from customers relating to appearance, taste and odour; to measure an increase in the acceptability of water to customers and a reduction in disruption and other negative social impacts for customers.

This is an existing AMP7 PC, however the PC definition has changed from PR19 (AMP7),which was based on DWI IL01/2006, to PR24 based on DWI IL04-2022_Revised_Annual_Consumer_Contacts as per the Performance commitment definition - Customer contacts about water quality

Under the old definition each contact counted as one and recorded against the primary issue, even if the customer noted more than one issue. Under the new definition if the customer contacts us about multiple issues, both the appearance and the taste for example, these are logged at two contacts (ie one for each issue).

This PC is measured using the data we report to the DWI on a calendar year basis, ie data for calendar year 2022 was reported in the APR 2023 as 2022/23. The data originates from our Customer Relationship Management software and the recording of contacts into appropriate categories follows a detailed methodology to ensure compliance with the DWI guidelines.

PC units: Number of consumer contacts per 1,000 population

The number of contacts and population are as reported to the DWI each year following their guidance.

1.3.2. Our long-term ambition

2050 target: 0.97

At the heart of our Strategic Direction Statement (SDS) are eight outcomes, all co-created with stakeholders, all focused on long-term ambition. Safe and reliable water supply is one of these outcomes and the top priority for our customers.

We have made significant progress in driving down water quality customer contacts about appearance, taste and odour over the last 10 years although we still remain around industry average, consistent with many of the better performing WaSCs. We anticipate the industry average will continue to fall and plan to continue to improve our performance over the long term as in our LTDS.

Maintaining our relative performance position is appropriate for us given our historical position and the ease with which customers can contact us; and having dealt with all our “hotspots” in the past, the remaining contacts are spread thinly over most of our area making even marginal further improvements disproportionately expensive for limited improvement.

Our approach is based on incremental improvement over time which also requires a sustained higher level of water quality driven mains replacement funded from increased base expenditure allowances.

Hence, our strategy balances our keeping bills affordable and net zero carbon outcomes with our *Safe and Reliable Water Supply* outcome.

One of the challenges with improving performance in this PC is that it involves two significantly different aspects:

- Firstly, performance can be improved by reducing the ability of customers to contact each time, different approaches to call centre management and technology to filter out multiple contacts etc. We pride ourselves in our consistent industry leading customer service which we achieve in part through our 'warm voice' call centre. We will not change this, however, as a result our performance against this measure will suffer in relative terms.
- Secondly, to actually improve appearance, taste and odour requires significant and on-going investment in the rehabilitation of our trunk and distribution mains. Because, all hot spots of issue have been addressed, this investment is increasingly less cost beneficial, however, it is a customer priority and to improve our performance further in the network we will need to deliver more mains rehabilitation. We are proposing an increase, but because this needs to be on a sustained basis we have included it as a specific step change in base expenditure, rather than enhancement.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.3.3. Our performance and proposed baseline

Historical performance

Table 15 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Performance from base expenditure **Reported PR19 definition**	2.26	2.31	2.24	2.25	1.79	1.59	1.47	1.47	1.53
Performance from base expenditure **Rebaselined PR24 definition**	2.60	2.67	2.57	2.59	2.07	1.83	1.70	1.69	1.75
Step change in performance from enhanced expenditure	0	0	0	0	0	0	0	0	0
Overall performance	2.60	2.67	2.57	2.59	2.07	1.83	1.70	1.69	1.75

This data has been reported to the DWI for a long time, but PC targets for this metric were only introduced by Ofwat at PR19.

For the avoidance of doubt we present both the original reported data and our best estimate of this data being re-baselined against the new definition in IL04-2022_Revised_Annual_Consumer_Contacts.pdf (ofwat.gov.uk).

We have been shadow reporting against this new definition since January 2023 and used the data up to the end of June 2023 to estimate the impact of this change which is a 22% increase in Taste & Odour contacts and a 12% increase in appearance (discolouration). At the moment, this shadow reporting is done manually. An IT solution is being developed for use from January 2024 to create a way of logging a single customer contact as multiple water quality issues which will enable the data to be extracted automatically for submission to DWI and OFWAT.

It was not possible to go back to 2022 data to review the impact of the change in reporting as the relevant information was not recorded. Our base future forecasts are derived from only six months shadow reporting data. We recognise that using a short reporting period as the basis for our forecasts has its shortcomings but there is no alternative.

At privatisation Ofwat funded water quality network improvements from enhancement under the "Section 19" programme however this was completed at Wessex in the year 2005 and since then all expenditure directed to this PC has been funded from maintenance.

As shown in the previous table we delivered a significant reduction in the number of contacts from AMP5 (2010 to 2014) into AMP6 (2015 to 2019). This was delivered through business as usual continual improvement and optimisation supported by over £30m of additional targeted water quality driven mains replacement expenditure to address problem areas in AMP5. The benefits of this additional AMP5 expenditure were observed through the AMP6 period in combination with our business as usual baseline activity and ongoing operational continual improvement programmes. This was funded through a one off additional maintenance allowance, as stated above, the need for a sustained increase in mains rehabilitation works determined that we are asking for a step-change in base expenditure.

Our current performance

Table 16 – Current performance – PR19 methodology

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	1.31	1.22	1.12	1.03	0.93
Performance from base expenditure	1.44	1.17	1.14	1.12	1.10
Step change in performance from enhanced expenditure	0	0	0	0	0
Overall actual performance	1.44	1.17	1.14		
Forecast overall performance				1.12	1.10

Table 17 – Current performance – PR24 methodology

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	n/a	n/a	n/a	n/a	n/a
Performance from base expenditure	1.64	1.35	1.31	1.29	1.27

Step change in performance from enhanced expenditure	0	0	0	0	0
Overall actual performance	1.64	1.35	1.31		
Forecast overall performance				1.29	1.27

We have continued to drive down the number of contacts in recent years through a combination of activities including :

- Undertaking root cause analysis to better understand underlying reasons and find appropriate solutions
- Optimising Water Treatment Works performance to minimise aggressivity/corrosivity of water into supply and undertaking Water conditioning using sodium silicate for a small number of high risk areas
- Undertaking works at Service Reservoirs to minimise the risk of discoloured water entering the network
- Using PODDS (Prediction Of Discolouration in Distribution Systems) to design mains conditioning schemes
- Implementing a Calm network strategy including staff training, changing standpipe hire arrangements, Fire and Rescue service engagement and transient (surge) pressure monitoring and management
- Improving our Supply Risk Assessment and Method Statement (SRAMS) process to minimise network disturbance
- Optimising our routine water mains flushing programme
- Enhancing our proactive communication with customers over both possible discolouration linked to planned works, and more recently to reactive issues
- Continuation of our business as usual Mains replacement/rehabilitation programme including service pipe replacement where appropriate

In the DWI Drinking Water 2022: The Chief Inspector's report for drinking water in England states that for 2022 the industry average for acceptability was 1.22 and for England 1.09 against a Wessex score of 1.14.

Proposed PR24 baseline

Our proposed baseline is to maintain a downward trend per year as shown below.

Table 18 – PR24 baseline

	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Proposed baseline	1.31	1.29	1.27	1.25	1.23	1.21	1.19	1.17

We made the case at PR19 that the expected 2024-25 performance was not achievable without impacting our wider customer service performance or without additional funding, which there was none. Now in our PR24 business plan submission we maintain our focus on industry leading customer service, while proposing an increased and sustained level of mains rehabilitation as base expenditure which should enable a continuing reduction in this metric. We have spent all of the maintenance funding we have been given, priorities have meant investment has been focused on leakage reduction rather than appearance, taste and odour.

Like several other companies, we have a DWI REG 28 Notice to reduce Brown Black & Orange discolouration contacts, which form the largest category of the Appearance element of this metric. Our proposed reduction shown above is predicated on our maintenance cost adjustment claim for additional water quality driven mains replacement, in particular the targeting of a number of trunk mains in the zones for which we have a DWI REG 28

undertaking (see WSX15 Annex A.1 for the Pr24 DWI letter of support for our proposal that will result in a new REG28 notice).

1.3.4. Proposed Performance Commitment Level

Performance commitment level

Considering our focus on customer service which may make it harder to perform against this measure, but in combination with our proposed sustained increase in mains rehabilitation, we propose the following performance commitment level:

Table 19 – Propose performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	1.25	1.23	1.21	1.19	1.17
Step change in performance from enhanced expenditure	0.00	0.00	0.00	0.00	0.00
Proposed PC level	1.25	1.23	1.21	1.19	1.17

Rationale for PC level:

- It is very difficult to compare performance between companies as there are both a range of different approaches to customer contact management that can influence the score at the detriment of customer service and performance in networks will depend company-by-company on specific conditions in region.
- We are proposing a sustained increase in mains rehabilitation works as a step-change in base expenditure. While no hot spots of issues remain, any improvement will require disproportionately costly interventions. However, this is a customer priority and as such we need to meet our customers' expectations.

How will we maintain our service

We will maintain our current improving performance trajectory through a combination of the continuation of our business as usual operational and maintenance activities supplemented by additional targeted works within the zones that we have a DWI REG28 undertaking for.

As detailed in WSX14 and WSX15 we have undertaken a detailed root cause analysis to develop our discoloration strategy which we have submitted to the DWI to meet the requirements of our REG28 undertaking and for which they have provided a letter of support which is included in WSX15.

The following interventions are proposed to deliver the above incremental improvement in performance:

Table 20 – Proposed interventions

Intervention	Capex cost (£m)	Opex cost (£m)	TOTEX cost (£m)	Expected Improvement in performance	% Impact on performance
Trunk mains rehabilitation/replacement	20	0	20	0.10	90%

Distribution mains rehabilitation/replacement	19.4	0	19.4		
Mains flushing and other operational optimisation	0	2.5	2.5		10%

We are proposing to increase our proactive mains replacement to 0.4% per annum in AMP8 which equates to 49km per year on average. Of this we are planning to replace 4km per year of trunk mains specifically targeted to meet our DWI REG28 notice for reducing discoloured water Brown Black & Orange (BBO) in specific zones as detailed in WSX15 Annex A1 which reproduces our DWI PR24 submission and includes our DWI letter of support for this programme of work.

Over the five years we are forecasting the water quality contacts rate will fall from 1.27 in 2024/25 (2024 calendar year) to 1.17 in 2029/30 (2029 calendar year), ie. a reduction of 0.10 over the five years because of this investment. If we did not do this additional proposed investment, we estimate the contact rate could rise by 0.10 over the five years.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 0.97 in 2050. Our profile to achieve this is a 0.1 improvement by 2030 and a further 0.05 improvement in each subsequent AMP period.

Table 21 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	1.27	1.17	1.12	1.07	1.02	0.97

This profile of performance is in the best interest of customers because:

- It reflects the continuation of our current approach to customer service, which consistently sees us as industry leading.
- Given, the non-cost beneficial nature of the network improvements, to address dispersed contacts, the investment focuses on the specific zone-based improvements agreed with DWI that are necessary.

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 22 - Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	1.16	1.15	1.14	1.13	1.12
Step change in performance from enhanced expenditure	0.00	0.00	0.00	0.00	0.00

1.3.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £3.458m outperformance and -£3.458m underperformance payment

Proposed standard ODI rate: £3.458m outperformance and -£3.458m underperformance payment

1.3.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 23 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	1.64	1.64	1.64	1.64	1.64

P10 rationale: Given that contacts from DWI reportable events recorded under CRI are not included in this measure, and our belief that we have achieved a step change in performance in recent years, we proposed that a sensible P10 is our 2020-21 performance of 1.64.

Table 24 - P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	1.06	1.06	1.06	1.06	1.06

P90 rationale: Difficult to predict due to the number of potential variables, however, we conclude that 1.17 forecast less 10% = 1.06 is appropriate,

1.4. Internal sewer flooding (PR24_ISF_WSX)

1.4.1. Introduction

Internal sewer flooding is an existing common performance commitment from AMP7.

This performance commitment is designed to incentivise the company to reduce the number of internal sewer flooding incidents.

Delivery of this performance commitment will lead to a reduction in internal sewer flooding, helping to minimise disruption for customers.

The measure is calculated as the number of internal sewer flooding incidents normalised per 10,000 sewer connections.

This measure includes flooding due to overloaded sewers (hydraulic flooding) and other causes (Flooding Other Causes - FOC). It includes sewer flooding due to severe weather events, a change to the PR19 definition, previous reporting definitions allowed for exclusions due to severe weather.

For the purpose of this performance commitment, flooding event means any escape of water from a sewerage system, irrespective of size, as evidenced by standing water, running water or visible deposits of silt or sewage solids.

For the purpose of this performance commitment, a flooding incident means the total number of properties flooded during each flooding event from a public sewer. For example, five properties which suffered two flooding events during a year, would count as ten incidents. Where a property floods both internally and externally during the same event it shall only be recorded as an internal flooding incident.

PC units: Number of incidents per 10,000 sewer connections.

The number of sewerage connections is as reported in the annual return table 4R Line 16.

1.4.2. Our long-term ambition

2050 target: Halve the impact of sewer flooding, 0.661 (equivalent to 85 incidents)

At the heart of our Strategic Direction Statement (SDS) are eight outcomes, all co-created with stakeholders, all focused on long-term ambition. An effective sewerage system is one of these outcomes, matching the continued high priority our customers place on minimising the impact of sewerage on customers and the environment.

The experience of sewer flooding can be devastating for customers, but it is already very rare thanks to long-term investment and maintenance. We are an industry leader in this area, having cut the number of internal incidents in homes and businesses by 25% between 2015 and 2020.

Now we are committing to go further by halving the impact of both internal and external sewer flooding. Our definition of impact will align with emerging sector best practice and focus on the severity of flooding events, the intrusiveness for customers and the impact on the environment. We will reduce the level of harm they cause by working on both frequency and impact.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.4.3. Our performance and proposed baseline

Historical performance

Table 25 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	Targets prior to AMP7/PR19 excluded incidents relating to severe weather								
Performance from base expenditure	1.24 (147 incidents)	3.32 (397 incidents)	2.01 (242 incidents)	1.92 (232 incidents)	1.55 (189 incidents)	1.32 (163 incidents)	1.23 (152 incidents)	1.44 (180 incidents)	1.18 (148 incidents)
Step change in performance from enhanced expenditure	-	-	-	-	-	-	-	-	-
Overall performance	1.24 (147 incidents)	3.32 (397 incidents)	2.01 (242 incidents)	1.92 (232 incidents)	1.55 (189 incidents)	1.32 (163 incidents)	1.23 (152 incidents)	1.44 (180 incidents)	1.18 (148 incidents)

We recorded an above average number of incidents during AMP5, which were due to deterioration in performance related to extreme weather - there were very exceptional and prolonged wet winters in the period 2012 to 2014.

Historical performance has been achieved by our standard response for internal flooding, which has included a customer level service target attendance time of two hours, were we will look to resolve the initial incident. We will then further investigate the incident to establish the underlying cause and undertake additional action, where necessary or possible, to prevent or mitigate a repeat event.

Most of our incidents are related to blockages, with a significant proportion of incidents are related to fats and rags. We have always run campaigns, educational programmes, leaflet, or letter drops covering sewer misuse. As part of our Sewer Misuse Strategy, we launched free waste packs to customers in hotspot areas. These packs contained free products to help prevent sewer misuse. These products have been carefully chosen to help customers identify where they might be disposing of items incorrectly and provide them with an alternative. For example, rather than pouring left over fats, oils, and grease down the sink we offer the GunkPot as a handy alternative.

Our current performance

Table 26 – PR19 target and performance

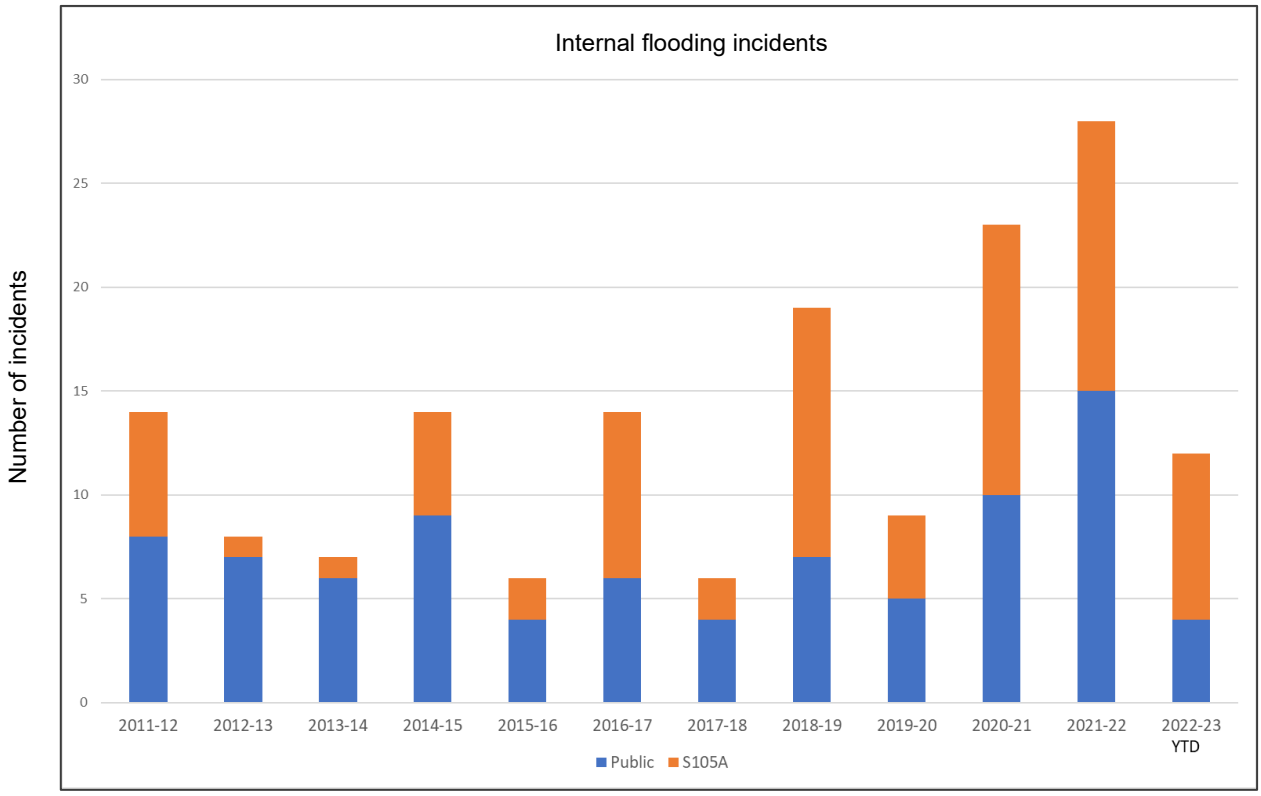
	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	1.68 (213 incidents)	1.63 (208 incidents)	1.58 (203 incidents)	1.44 (186 incidents)	1.34 (175 incidents)
Performance from base expenditure	1.41 (178 incidents)	1.43 (182 incidents)	1.31 (168 incidents)	1.32 (171 incidents)	1.31 (171 incidents)
Step change in performance from enhanced expenditure	-	-	-	-	-
Overall actual performance	1.41 (178 incidents)	1.43 (182 incidents)	1.31 (168 incidents)		

Forecast overall performance				1.32 (171 incidents)	1.31 (171 incidents)

Over recent years we have consistently achieved upper quartile/industry leading performance. We have achieved this through a series of initiatives including:

- A significant reduction in the percentage of incidents is related to a more substantial and targeted jetting programme achieving for example a 57% reduction in the period 2021 to 2023 see chart below:

Figure 3 – historical level of internal sewer flooding incidents



- Additional training has been implemented through the use of our jetting training rig built at Yeovil WRC. This has allowed more thorough training and a heightened skill level of both our internal and external contractor sewerage crews

Over many years we have consistently performed at leading or upper quartile levels. The following insert shows, that even with the greater volatility resulting from the impact of severe weather being included in the definition, we still consistently perform well.

Comparative Performance
Top 3 green, bottom 3 red

	Year	Anglian	North-umbrian	Severn Trent	Southern	South West	Thames	United Utilities	Dwr Cymru	Wessex	Yorkshire	Average	Wessex Rank of 10
Internal sewer flooding (per 10,000 properties)	2022/23	1.69	1.21	1.65	2.25	0.63	1.91	2.32	1.14	1.31	2.67	1.7	4
	2021/22	1.7	1.8	1.6	3.0	0.8	3.5	3.0	1.4	1.4	2.8	2.1	2
	2020/21	1.3	1.9	1.9	2.0	1.3	2.3	4.5	2.0	1.4	3.3	2.2	3

Proposed PR24 baseline

Proposed baseline: 1.34 (equivalent to 175 incidents)

Rationale: 1.34 is the PR19 FD target for end of AMP7 and given the increasing severe rainfall events we believe that it will not be possible to improve performance further than we have already through base funded activities. Additional enhancement expenditure will be required to make the improvements that our customers expect.

1.4.4. Proposed Performance Commitment Level

Performance commitment level

Considering our performance from base is expected to counter the impact of severe weather and that our proposed additional enhancement expenditure will deliver continual improvement to match the priority that our customers continue to place in minimising sewer flooding incidents, we propose the following performance commitment level:

Table 27– Propose performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	1.34	1.34	1.34	1.34	1.34
Step change in performance from enhanced expenditure	-0.05	-0.08	-0.10	-0.13	-0.15
Proposed PC level	1.29	1.26	1.24	1.21	1.19

The proposed performance commitment level of 1.190 (167 incidents) in 2029-30 is consistent with the industry upper quartile and recognises the importance our customers place on minimising this issue. The target aligns with the trajectory to achieve the long-term ambitious target of halving incidents by 2050.

How will we maintain our service

We will continue to prioritise the reduction in internal sewer flooding through the processes and focused investment that has seen our performance improve historically.

In addition, the interventions being proposed under the external sewer flooding performance commitments of external root cause analysis, sewer misuse customer engagement, flooding inadequate schemes and partnership working will all have an indirect benefit on this performance commitment. In addition to the external sewer flooding interventions, the in-sewer monitoring proposed under the severe pollution performance commitment will also have an indirect impact.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 0.661 (equivalent to 85 incidents) in 2050. Our profile to achieve this in the context of our 2025-30 proposed PC level is as follows:

Table 28 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	1.31	1.19	1.06	0.92	0.79	0.66

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 29 – Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	1.19	1.19	1.19	1.19	1.19
Step change in performance from enhanced expenditure	-0.03	-0.05	-0.08	-0.10	-0.13
Total performance	1.16	1.14	1.11	1.09	1.06

As the performance tables only include the enhancement expenditure in AMP8, table OUT1 only reflects the performance from base expenditure in 2030-35.

1.4.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £5.614m outperformance and -£5.614m underperformance payment

Proposed standard ODI rate: £5.614m outperformance and -£5.614m underperformance payment

1.4.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 30 - P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	2.40	2.40	2.40	2.40	2.40

P10 rationale: 2.40 is equivalent to 315 incidents which is 20% higher than our best ever performance and we have only failed to perform better than this in one extreme year over the last decade.

Table 31 - P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	1.00	1.00	1.00	1.00	1.00

P90 rationale: 1.00 is equivalent to 131 incidents which is 10% lower than best ever performance, which reflects the natural variability that we see when there is a benign weather year and performance is better.

1.5. External sewer flooding (PR24_ESF_WSX)

1.5.1. Introduction

Existing common performance commitment from AMP7.

The purpose of this performance commitment is designed to incentivises the company to reduce the number of external sewer flooding incidents.

Delivery of this performance commitment will lead to a reduction in external sewer flooding helping to minimise disruption for customers.

The measure is calculated as the number of external sewer flooding incidents normalised per 10,000 sewer connections.

This measure includes flooding due to overloaded sewers (hydraulic flooding) and other causes (Flooding Other Causes - FOC). It includes sewer flooding due to severe weather events, a change to the PR19 definition, previous reporting definitions allowed for exclusions due to severe weather.

For the purpose of this performance commitment, flooding event means any escape of water from a sewerage system, irrespective of size, as evidenced by standing water, running water or visible deposits of silt or sewage solids.

For the purpose of this performance commitment, a flooding incident means the total number of properties (including curtilages) flooded during each flooding event from a public sewer. For example, five properties which suffered two flooding events during a year, would count as ten incidents. Where a property floods both internally and externally during the same event it shall only be recorded as an internal flooding incident.

PC units: Number of incidents per 10,000 sewer connections

The number of sewerage connections is as reported in the annual return table 4R Line 16.

1.5.2. Our long-term ambition

2050 target: Halve the impact of sewer flooding to 8.25

At the heart of our Strategic Direction Statement (SDS) are eight outcomes, all co-created with stakeholders, all focused on long-term ambition. An effective sewerage system is one of these outcomes, matching the continued high priority our customers place on minimising the impact of sewerage on customers and the environment.

The experience of sewer flooding can be devastating for customers, but it is already very rare thanks to long-term investment and maintenance. Our customers valued improvements in internal and external sewer flooding.

Now we are committing to go further by halving the impact of both internal and external sewer flooding. Our definition of impact will align with emerging sector best practice and focus on the severity of flooding events, the intrusiveness for customers and the impact on the environment. We will reduce the level of harm they cause by working on both frequency and impact.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.5.3. Our performance and proposed baseline

Historical performance

Table 32 – Historical performance and targets

Table heading	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	Targets prior to AMP7/PR19 excluded incidents relating to severe weather								
Performance from base expenditure	14.89 (1,765 incidents)	27.43 (3,276 incidents)	20.87 (2,510 incidents)	18.82 (2,278 incidents)	16.86 (2,057 incidents)	17.00 (2,092 incidents)	13.88 (1,718 incidents)	13.40 (1,674 incidents)	17.21 (2,166 incidents)
Step change in performance from enhanced expenditure	-	-	-	-	-	-	-	-	-
Overall performance	14.89 (1,765 incidents)	27.43 (3,276 incidents)	20.87 (2,510 incidents)	18.82 (2,278 incidents)	16.86 (2,057 incidents)	17.00 (2,092 incidents)	13.88 (1,718 incidents)	13.40 (1,674 incidents)	17.21 (2,166 incidents)

Extremes in performance were experienced in the period 2012 to 2014 due to exceptional and prolonged wet winters.

Our current performance

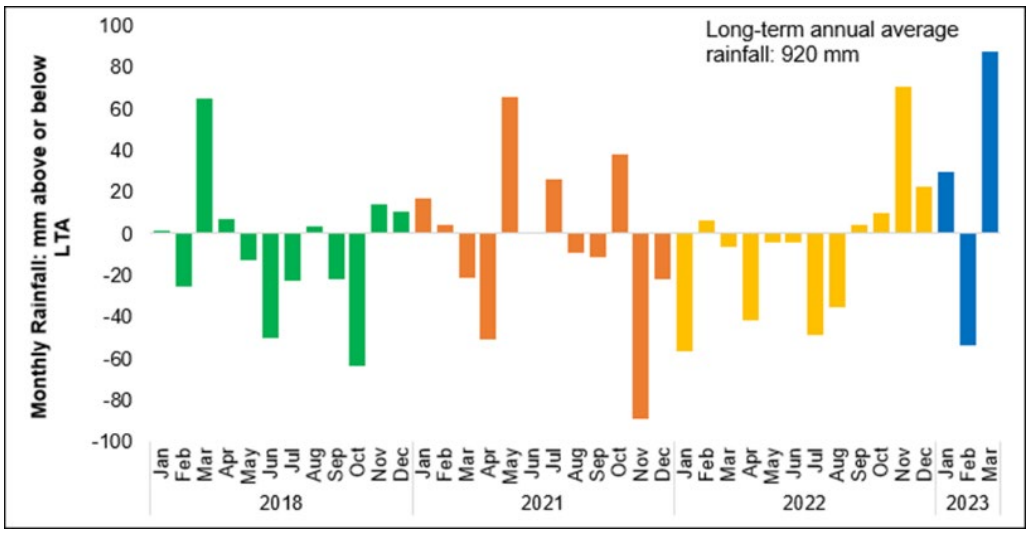
Table 33 – PR19 target and performance

Table heading	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	17.07 (2,160 incidents)	16.73 (2,135 incidents)	16.38 (2,108 incidents)	16.03 (2,074 incidents)	15.68 (2,045 incidents)
Performance from base expenditure	19.35 (2,449 incidents)	19.27 (2,460 incidents)	17.83 (2,295 incidents)	17.06 (2,208 incidents)	16.93 (2,208 incidents)
Step change in performance from enhanced expenditure	-	-	-	-	-
Overall actual performance	19.35 (2,449 incidents)	19.27 (2,460 incidents)	17.83 (2,295 incidents)		
Forecast overall performance				17.06 (2,208 incidents)	16.93 (2,208 incidents)

External flooding (inside boundary) incident numbers in 2022/23 have not recovered to pre-COVID levels (2019/20). However, as more customers return to work (see Covid impact section below), the increased level of blockages is expected to subside. This is reflected in our forecast for 2023/24 and 2024/25 being based on a five year-average rather than just the recent years' experience.

In addition, the winter of 2022/23 saw extreme and prolonged rainfall for the last 6 months (Oct to Mar) of 130% of the long-term average (LTA); with the individual months of November 166%, December 121%, January 132% and March 235% of LTA. It was the driest Feb for 30 years, followed by the wettest March for over 40 years.

Figure 4 – Recent monthly rainfall levels above and below long term average



COVID Impact

COVID led to an uplift in the number of sewerage customer contacts we received,12%, which have fallen back by 6% but haven't fully recovered. The number of customer contacts attended also increased, 11%, due to COVID but hasn't fallen back at all, and also led to an increase in percentage of contacts attended by 5%.

Sewerage contacts received

					COVID		
	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Total sewerage contacts received (RAPID)	34585	31305	32654	33649	36749	36395	34917
Year on year change	-4%	-14%	4%	3%	12%	-2%	-4%

Sewerage contacts attended

	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
Total sewerage contacts attended (WIFs)	26373	23663	24676	24688	27493	27544	27847
Year on year change	-1%	-10%	4%	0%	11%	0%	1%
% of contacts attended	76%	76%	76%	73%	75%	76%	80%

The first insert below highlights months where number of external (inside boundary) incidents due to other causes (blockages etc.) with any incident counts above 200 in red text and the COVID lockdown months coloured red.

Its shows consistently high number of external (inside boundary) incidents due to other causes (blockages etc.) through lockdowns.

The high numbers during the final lockdown do not correspond with rainfall as shown in the second insert.

Externals - Other Causes

Month	2016	2017	2018	2019	2020	2021	2022	2023
January	200	202	200	160	249	216	252	267
February	192	183	149	181	212	203	219	217
March	216	191	183	167	242	213	197	215
April	163	162	168	153	180	204	165	
May	215	143	154	140	136	223	176	
June	165	102	100	141	213	157	147	
July	85	130	111	131	147	171	119	
August	127	88	101	92	188	145	136	
September	139	124	105	117	140	113	111	
October	148	108	92	116	206	193	149	
November	203	131	157	176	194	168	182	
December	169	185	157	261	235	210	204	

COVID Lockdown

Externals - Inadequate Capacity

Month	2017	2018	2019	2020	2021	2022	2023
January		3		22	10	1	70
February	4	1	3	39	4		
March		2		19			9
April	1	7		2			
May	2	4	1		10	2	
June		1	1	32	16	18	
July	1	2	1	8	98	2	
August	1	1	3	49	30	7	
September	1		5	6	1	12	
October			10	37	46	9	
November		1	11	6	4	13	
December	4	4	30	25	2	4	

The following insert shows our current performance in the context of the wider industry.

Comparative Performance
Top 3 green, bottom 3 red

	Year	Anglian	North-umbrian	Severn Trent	Southern	South West	Thames	United Utilities	Dwr Cymru	Wessex	Yorkshire	Average	Wessex Rank of 10
External sewer flooding (per 10,000 properties)	2022/23	16.1	23.1	12.7	18.5	23.2		17.1	24.4	17.8	22.8	19.5	**4**
	2021/22	14.6		10.8	19.5	18.1		18.1	26.3	19.3	19.5	18.3	**5**
	2020/21									19.4			

Historically we have prioritised minimising internal sewer flooding, although our external performance has been improving overall and approaching upper quartile. With the number of internal sewer flooding incidents being so low, for AMP8 we are proposing to reduce external sewer flooding incidents by a greater percentage than internals.

Proposed PR24 baseline

Proposed baseline: 16.934 (equivalent to 2,208 incidents) in 2024-25.

Rationale: We are proposing the current five-year average as the baseline. We believe we can continue to improve performance through base activities, not least because recent years have been impacted by the change in working arrangements due to Covid and we have experienced some extreme rainfall events. The impact of Covid and the inclusion of severe weather events have impacted the sectors performance overall, despite this our relative performance has improved. We did not get enhancement funding at PR19, so there was no specific step-change in performance possible, and it has not been possible to achieve the PR19 final determination PC target of 15.68 (2,045 incidents).

1.5.4. Proposed Performance Commitment Level

Performance commitment level

Considering our performance from base is expected to improve performance and that our proposed additional enhancement expenditure will deliver continual improvement to match the priority that our customers continue to place in minimising sewer flooding incidents, we propose the following performance commitment level:

Table 34 – Proposed performance commitment level

Table heading	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	16.78	16.65	16.53	16.41	16.29
Step change in performance from enhanced expenditure	-0.64	-1.30	-1.95	-2.60	-3.22
Proposed PC level	16.14	15.35	14.58	13.81	13.07

The performance from base quates to 2,208 incidents per year and is reducing due to the number of connected properties increasing over the AMP.

The linear trend toward our long-term target to half the impact of sewer flooding by 2050 would result in a 2029-30 target of 15.241 (2,056 incidents). However, the priority that our customers place on this service area is reflected in a more accelerated improvement in performance in AMP8 of a more than 20% reduction in external flooding incidents from 16.78 to 13.00 (equivalent 2,208 to 1,763 incidents).

How we will deliver this step change

The following interventions are proposed to deliver the above incremental improvement in performance, see below for details:

Table 35 – Proposed interventions

Intervention	Capex cost (£m)	Opex cost (£m)	TOTEX cost (£m)	Expected Improvement in performance	% Impact on performance
DWMP – Flooding - Blockages	17.50	10.64	28.14	-347 external flooding incidents/annum (-8 internal flooding incidents/annum)	-15.7%
Other programmes:					
DWMP - Flooding – capacity	33.13	0.34	33.47	-25 external flooding incidents/annum (-2 internal flooding incidents/annum)	-1.1%
DWMP – Partnership working	6.52	4.67	11.19	-50 external flooding incidents/annum	-2.3%
Serious Pollutions – Smart Networks (12,000 in-sewer monitors)	30.00	11.70	41.70	-24 external flooding incidents/annum	-1.1%

There are two main causes of sewer flooding, blockages and inadequate hydraulic capacity. For external flooding, 90% of incidents are related to blockages and only 10% are related to a lack of hydraulic capacity.

The main delivery programme to provide the proposed improvement is called 'DWMP – Flooding – Blockages' and has two main elements; External Root Cause Analysis (ERCAs) and Customer Engagement – Sewer Misuse, which are both described below:

1. External Root Cause Analysis (ERCAs)

External root cause analysis (ERCAs) involves splitting the Wessex region into 50m^2 hexagons and counting the number of external flooding incidents that have occurred in the hexagon since April 2010. The insert below shows the summary of the findings:

No. of Incidents in Hex	Count of Hexs	%	Count of Incidents	How many hex's had incidents in the last year? (2021)
1 Incident	4662	43.78%	2041	310
2 Incidents	2306	21.66%	4089	508
3 Incidents	1259	11.82%	3769	418
4 Incidents	821	7.71%	3276	335
5 Incidents	545	5.12%	2720	269
6 - 10	897	8.42%	6493	508
11 - 15	129	1.21%	1574	92
16 - 20	21	0.20%	420	19
21 - 30	7	0.07%	189	5
31+	1	0.01%	47	1

From the table you can see that there is one hexagon with over 31 external flooding incidents since 2010 and there are 4,662 hexagons with only one incident.

We have generally only carried-out an operational investigation into repeat external flooding incidents that have occurred within a 12-month period. What the ERCA analysis does is provide an overview of the performance of an area highlighting issues and recommendations for actions.

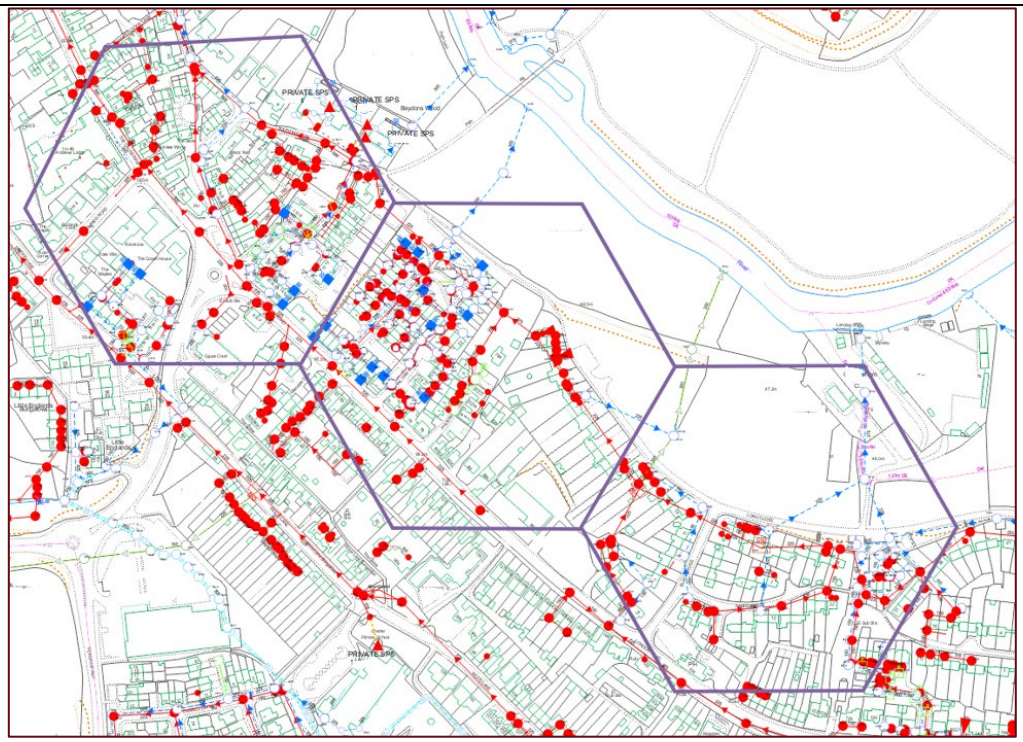
We have completed 73 ERCAs to date, the proposal for AMP8 is to complete an ERCA for every hexagon where there have been 5 or more incidents and undertake the recommended remedial actions with the view prevent future external flooding incidents in the hexagon analysed. In 2023, over 20% of external sewer flooding incidents were at repeat locations.

For the 73 ERCAs completed to data, 144 actions have been recommended which range from additional CCTV or investigation (which may lead onto further remedial action), sewer rehabilitation or repairs, recommendation for routine maintenance or some form of customer engagement or a mix of a number of these.

ERCA (External Root Case Assessment) Case Study - Wiltshire

ERCAs investigate the root cause of external flooding incidents recommend actions to reduce the risk of flooding. Hexagons are created using GIS to flag hotpots which have suffered more than 11 external flooding incidents over the last five years.

An ERCA investigation was undertaken for 3 hydraulically linked hexagons in Wiltshire, where 91 external flooding incidents have been reported since 2002.



The report highlighted various clusters of incidents with different root causes.

Incidents were predominantly due to serviceability issues such as rags / fat blockages and root ingress, other problems included inadequate hydraulic capacity (IHC) and some structural defects. The IHC incidents are currently being reviewed under a flooding scheme and the structural defects were rehabilitated.

A FOG campaign was proposed to provide information to customers advising them on the cause and effects of blockages and future CCTV surveys were recommended to assess root regrowth and assess structural and service condition of the network in the hexagons.

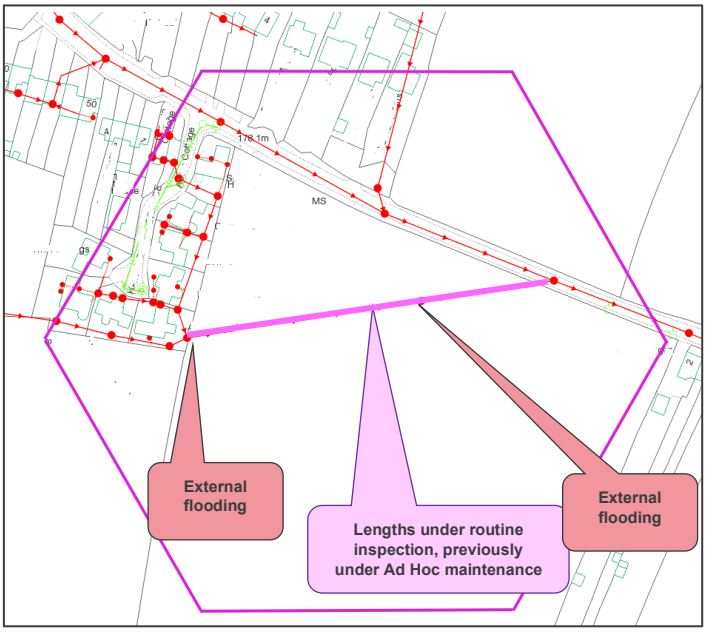
The recommended actions were approved during the monthly liaison meeting between the internal stakeholders.

Case study: ERCA - Wiltshire

ERCA (External Root Case Assessment) Case Study – South Gloucestershire

ERCAs investigate the root cause of external flooding incidents within hexagons and recommend actions to reduce the risk of flooding. The hexagons are created using GIS to flag hotpots which have suffered more than 11 external flooding incidents over five years.

An ERCA investigation was carried out in South Gloucestershire, where 12 external flooding incidents have been reported from two manholes since 2018.



The investigation found that all the flooding was localised to two manholes and due to blockages predominantly caused by sewer misuse, exacerbated by a small gradient change in the sewer. It was also noted that Ad Hoc jetting rounds had to be carried out in January 2018, January 2020, and February 2021, following flooding incidents.

The report concluded with the recommendation to raise a wider FOG campaign providing information to customers advising them on the cause and effects of blockages. It was also suggested that the sewers previously subjected to Ad Hoc jetting were added to the annual routine inspection and follow up maintenance program.

In May 2023 the report and the recommendations were shared and agreed with internal stakeholders at the monthly liaison meeting. A FOG campaign was instigated, and the lengths added to the annual routine inspection program.

The first routine inspection of the network was carried out in June 2023, found structural (broken pipe and fractures) and service defects (blockage and fine root ingress).

2. Customer Engagement – Sewer Misuse

We clear around 13,000 blockages a year that result from customer behaviours leading to items such as wet wipes, fat, oils and greases entering the sewer network, which is sometimes referred to as 'sewer misuse'. Our strategy to reduce pollutions and sewer blockages therefore includes a comprehensive programme of customer engagement to encourage behavioural changes. Customer research tells us that many customers are not mindfully undertaking habits that they realise can cause blockages and there is sometimes confusion around wet wipe flushability, but there is also support for us to engage on the topic and help customers to prevent blockages.

Our current baseline proactive engagement programme seeks to reach a wide proportion of our customer base as the behaviours that can result in sewer misuse are wide ranging and may occur in households spanning across a variety of socio-economic and life stage segments. The programme includes:

- Social media promotions and seasonal campaigns – throughout the year our social media channels are used to inform and remind people about the effects of sere misuse and most effective ways to avoid blockages. The sewer misuse posts are usually always top performing content – particularly on Facebook and on TikTok, that is, that they are viewed, shared or liked most frequently.

Fig 5 - Social media post examples

- Schools education – education officers met over 13,000 children and 400 adults in 2022, we have plans to extend this figure further and visit more schools and children's groups. This opens up the opportunities to extend our customer's knowledge of the water cycle and how we can all work together to protect our drains and sewers.

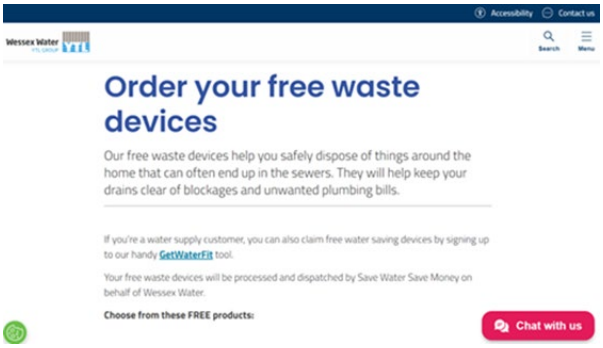
- Targeted engagement – engaging with students as they leave home and become more independent. We attend freshers' fair events in our region with bespoke publications and offer free blockage prevention packs to help with behaviour change. In addition to attendance at the freshers' events we run an online social media promotion in student areas which offers a link to order the free pack. In 2023 we met with over 500 students and 650 orders were made for the free pack.

Fig 6 bespoke leaflet for student engagement

- Events and open days – Around the Bend tours are where members of the public have guided access and tours of water recycling facilities. In 2023 we will be opening 21 water recycling centres across the region, for open days in September and October. In 2022 more than 1,000 customers attended the events at our water recycling centres where our operations colleagues provided a tour and explained each stage of the treatment process, we hope that by opening more sites across the region to increase this number in 2023 and the future. We attend events throughout the year, such as the Taunton Flower Show and Corsham Eco fair, these events provide us with an opportunity to talk to our customers about the problem of sewer blockages and how we can work together to tackle these issues.

- Tailored community engagement – Community Connectors is a recent initiative, initially based in two of our region's towns, Chippenham and Bridport. Part of the programme is to involve customers in their local area through signage and Hello lamppost on our assets to share information with the community or visitors to the area, these signpost customers through a chatbot facility to advice and information including links to our free pack offer.

Fig 7 Wessex Water web page for customers to order free pack



Our current reactive engagement programme makes use of continuous insight from operational blockage data to target engagement in communities experiencing 'blockage hotspots'. Activities include:

- Social media promotions of a free blockage prevention pack of products that encourages behavioural swaps to sewer friendly habits. The pack typically includes reusable face/make-up pads to reduce the number of disposable face wipes flushed away; a spray to moisten normal toilet paper for intimate care to reduce the likelihood of using disposable wet wipes for toileting; a 'gunk pot' to collect fats, oils and grease from cooking to cool before pouring into food waste bin; a plughole hair catcher to prevent hair and other bathing/showering debris from going down the plughole; and a sink strainer to prevent food scraps from washing down the kitchen plughole. We are one of the only companies to provide free blockage prevention products to customers. In 2022-23 our social media posts were viewed by over 190,000 people in blockage hotspot areas and over 13,000 households ordered packs.

- Due to launch in 2023-24 is our tiered household lettering programme. This data-led engagement approach will see the automation of letter mailings to blockage hotspot areas. Using GIS, the ten properties upstream from a blockage caused by misuse on the sewer network will receive a letter informing them of the recent blockage in their area and how their behaviours can help prevent future blockages. If a blockage reoccurs in the same location within a specified timescale, a subsequent letter is generated with an escalated message, further reoccurrence will result in a visit to the community by a DEO to do doorstep visits. Data and customer feedback will be used to fine-tune the process to evaluate the impact of the lettering and whether adjustments may be required, for example to the number of properties upstream of each blockage that are lettered, and the length of time considered when determining what constitutes a recurrent blockage.

Our future customer engagement programme will see a significant enhancement in activities and innovation in our approaches to enhance targeting and impact. Our proactive and reactive engagement programmes will be upscaled to reach more customers, more community hotspots, and more customer segments. New initiatives will include:

- Targeted engagement with the **care sector**: care homes and organisations that provide in-home care are recognised as a segment to engage with on wet wipe disposal practices linked to intimate client care. Through the vehicle of our Community Connectors programme, we plan to co-create engagement materials (e.g. leaflets, posters, training videos) on the ways to protect the sewer network through their behaviours in the homes of the people for whom they care. To maximise the benefits to customers and the environment of this engagement we'll also include information on our Priority Services Register and messaging on the safe disposal of pharmaceuticals. During the Chippenham Community Connectors programme the materials will be developed, tested and refined and if successful will become part of our standard portfolio of sewer misuse engagement activities.

- Targeted engagement with the **tourism sector**: people's behaviours on holiday are not always the same as when they are at home. Holiday accommodation premises including hotels, guest houses, B&Bs and independent lettings can sometimes suffer the inconvenience of sewer blockages. We will develop information and unbranded signage for display in accommodation to engage holiday makers about how to keep sewers free from blockages. The materials will be developed and tested as part of the Bridport Community Connectors pilot and refined for wider roll out if successful.

- Enhancing our approach to the evaluation of our various blockage reduction customer initiatives is also a future focus area for us. We are particularly keen to evaluate the longevity of customer behavioural change encouraged by our free blockage prevention packs. In 2022-23 we are collaborating in CCW's industry Task and Finish Group to share findings and undertake engagement pilot projects. A growth in our capacity and capability for data analysis will also support future behavioural hypothesis testing and engagement evaluation.

There are three other programmes of work that are flooding related and will have a beneficial impact on the number of incidents, which have other drivers, Flooding Capacity, Partnership Working and Serious Pollutions – Smart Networks.

1. Flooding capacity schemes

The flooding capacity programme aim is to reduce the risk of flooding to properties/locations that have a risk of flooding due to inadequate capacity.

Inadequate capacity is when flooding occurs because too much rainfall is entering the system which overwhelms the hydraulic capacity of the sewerage assets (pipes or pumping stations).

It is expected that our sewers are under pressures of increased rainfall intensities due to climate change, growth which will see new developments being built and urban creep of existing properties (e.g. increase in impervious areas causing more runoff).

With climate change we will see increased rainfall intensities. Our predictions of the PR19 hydraulic flooding risk metric Population in a storm PC, suggests the number of properties at risk will increase by 42% by 2050, if climate change occurs as modelled and if not addressed. It will be very expensive to solve all hydraulic flood risks.

Growth has a less dramatic affect than climate change on the amount of flow, hence a much lower increase in flood risk. However, we have a duty to expand our networks, so we implement schemes to mitigate against significant development, so there is not an increase in the current flood risk post development.

Urban creep is probably going to worsen, as more customers turn front gardens into parking spaces to charge their electric cars. Planning permission for this is normally required but is not currently policed. We should encourage the councils to enact this to prevent extra runoff entering our sewers.

Our DWMP investigated sewer flood risk in detail. We developed options for over 1,000 locations predicted to be at risk of hydraulic sewer flooding. To solve those flood risks would cost around a billion pounds.

Our core plan has slightly more investment than we have historically had for hydraulic flooding. We have an adaptive pathway should we decide, or be required, to make a significant step change in flood risk reduction.

The proposed programme, £33.5m totex, will reduce the risk of flooding due to inadequate hydraulic capacity to at least 164 properties.

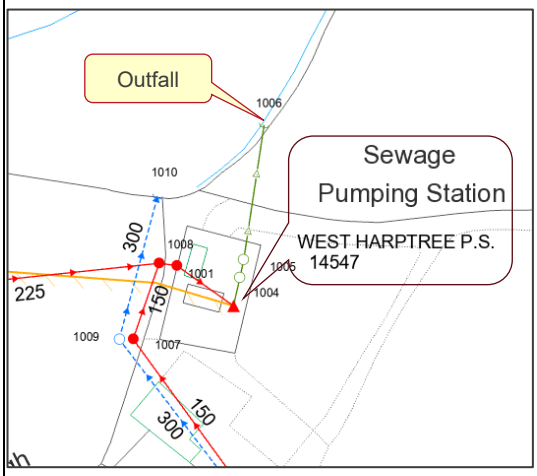
All inadequate capacity flooding is investigated, which culminate in a high-level assessment (HLA) being undertaken to establish the nature of the problem causing the hydraulic issue and develop possible solutions with associated costs, . these HLAs are then prioritised and developed into flooding capacity schemes.

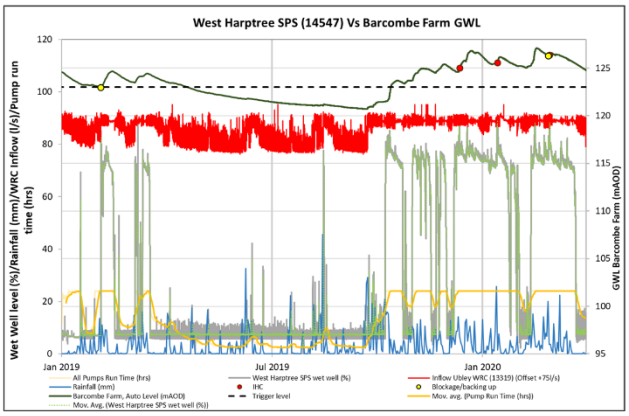
The nature of the proposed schemes can very, from very localised interventions to the construction of additional storage and additional sewerage capacity, the two case studies outlined below illustrate this.

HLA (High Level Assessment) Case Study – West Harptree

HLA investigations are set up to review flooding incidents due to inadequate hydraulic capacity (IHC), assess the condition of the sewerage network, evaluate potential solutions or mitigation actions, and provide high level costs for prioritisation.

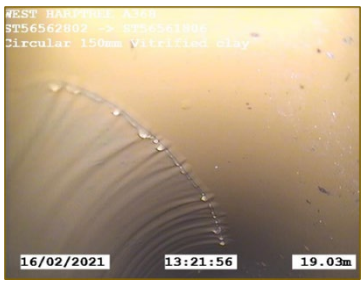
Regular external flooding, deemed to be due to IHC was reported in West Harptree in winter 2019 and 2020, despite mitigation schemes to seal manholes and install an NRV in 2014.





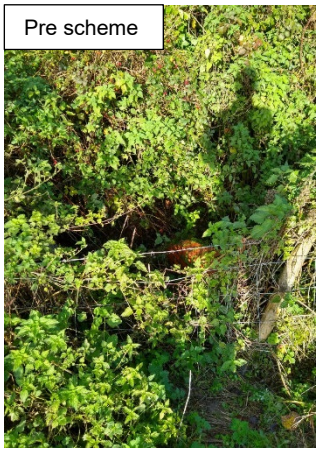
Telemetry at West Harptree SPS (14547) showed a medium/ fast response to rainfall, with the wet well level high and the pumps being 'beaten'.

The HLA investigation found that although the pumps were operating as designed, the flap valve was not closing due to the ditch vegetation and silt deposits causing back flow into the system. Additionally, a significant amount of infiltration was found upstream.



A scheme was raised to address the open flap valve and clear the ditch in 2021 and sewer rehabilitation was carried out in 2022.

Pre scheme



On site

Post scheme

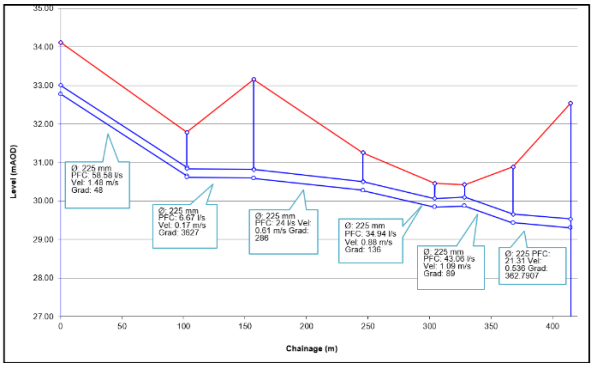
Since this work has been undertaken there have been no further flooding incidents reported due to IHC.

HLA (High Level Assessment) Case Study - Keynsham

HLA investigations are set up to review flooding incidents due to inadequate hydraulic capacity (IHC), assess the condition of the sewerage network, evaluate potential solutions or mitigation actions, and provide high level costs for prioritisation.

Regular external flooding, deemed to be due to IHC has been reported from manholes in Keynsham since 2002.

The HLA investigation found that flooding incidents were associated with rainfall events and that the wider network has capacity issue exacerbated by a combination of poor gradients and very shallow manholes without sufficient storage.



The HLA suggested that the creation of a high level relief with storage, to divert some of the flow to a different part of the catchment with more capacity, would mitigate the risk of flooding.

A scheme was raised in 2019 to review the HLA optioneering and carry out detail design. The relief is currently under construction with a delivery target for AMP7 year 5.

Construction Phase

2. Partnership working

Partnership working is focused on delivering improvements to the surface water sewerage system where asset ownership is shared with many and varied stakeholders.

Proposed partnership solutions for AMP8 will look at opportunities to consider wider, long-term benefits to communities and the environment, using a systems and catchment-oriented approach to deliver integrated solutions that provide multiple benefit. Alternatively, investment in Wessex Water assets and infrastructure can also be used by stakeholders as match funding for other funding sources to demonstrate requirements for investment in other areas of the catchment to achieve shared outcomes. The detail of the AMP8 proposals is within Section 8 of WSX16 Wastewater networks plus strategy and investment.

3. Serious Pollutions – Smart Networks

In AMP8, we are looking to increase our monitoring, analysis and control in our Smart Waste System strategy by installing a further 12,000 in-sewer monitors to help build resilience in our sewerage network and help achieve our targets for serious pollutions.

The installation of 12,000 monitors during AMP8 will lead to approximately 4,000 incidents requiring attendance per annum leading to interventions from a simple visit and clean to potentially significant repair and maintenance works required, for example, to repair a sewer collapse. This will help prevent possible external flooding.

More details can be found in the serious pollution's performance commitment commentary.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 8.467 (equivalent to 1,106 incidents) in 2050, reducing incidents by half. Our profile to achieve this in the context of our 2025-30 proposed PC level is as follows:

Table 36 – Performance profile 2025-2050

Table heading	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance targets to achieve SDS 2050 target	16.93	13.07	10.63	9.83	9.04	8.25

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 37 - Proposed performance 2030-2035

Table heading	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	13.07	13.07	13.07	13.07	13.07
Step change in performance from enhanced expenditure	-0.74	-1.15	-1.56	-1.96	-2.44
Total performance	12.33	11.92	11.51	11.11	10.63

As the performance tables only include the enhancement expenditure in AMP8, table OUT1 only reflects the performance from base expenditure in 2030-35.

1.5.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £2.513m outperformance and -£2.513m underperformance payment

Proposed standard ODI rate: £2.513m outperformance and -£2.513m underperformance payment.

1.5.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 38 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	20.50	20.50	20.50	20.50	20.50

P10 rationale: P10: 20.5 is equivalent to 2,693 incidents which we have triangulated based on the following historical performance. Our performance in AMP7 has been high for the reasons explained, giving a five-year average of 2,208. Our worst ever performance is 3,276 incidents and the next worst being 2,510 incidents.

Table 39 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	12.86	12.32	11.78	11.24	10.70

P90 rationale: Our P90 has been based on our best ever performance in 2018-19 of 1,674 incidents which we have converted into the normalised PC units.

1.6. Biodiversity (PR24_BIO_WSX)

1.6.1. Introduction

This performance commitment (PC) is designed to incentivise Wessex Water to conserve and enhance biodiversity in the exercise of its functions. This is a new performance commitment for AMP8.

This PC measures the net change in the number of Biodiversity Units (BUs) on nominated land per 100km^2 of land in the company's area. BUs are calculated in accordance with the Natural England joint publication Biodiversity Metric 4.0 of March 2023 ('BM 4.0'). Reporting is split across area-based BUs (i.e., areas of a given habitat such as woodland or grassland) and linear BUs (i.e., hedgerow and watercourse), which, departing from the BM 4.0 methodology, are summed for the purposes of this PC.

As the PC definition makes provision for each water company to nominate areas of land in consultation with relevant stakeholders, the PC units have been normalised to enable comparison of performance between companies across the water industry.

In response to consultation on this new PC, Wessex Water agreed with the premise of normalisation but proposed that "total land owned" would be a more appropriate denominator to use in the normalisation. Concerns were also raised about the impact of frequent updates to (i.e., new versions of) the Biodiversity Metric (BM). We also noted that the methodology referred to third party land on which we are working in accordance with our statutory functions and asked for clarification as to Ofwat's meaning of 'statutory functions' in the definition of this performance commitment, as there are differing legal interpretations of what our statutory functions are.

Over the course of the production of our Method Statement, assimilation of data for the associated tables for this PC and selection of nominated land for the PC, we have identified three key points in relation to the use of BM 4.0 as the metric for the PC.

First, BM 4.0 uses a standardised condition assessment. Like any standardised condition assessment, this will have limited sensitivity: it will not detect, or 'acknowledge', improvements in habitat condition which are still beneath the threshold for the 'next condition score up'. I.e., transition between habitat condition categories is binary, whereas habitat response to intervention will be continuous: a habitat may be greatly improved, to just under the threshold for the next condition category up, but this increase will go undetected and these improvements in habitat condition are hence not documented or acknowledged until the threshold is reached.

Secondly, BM 4.0 measures only biodiversity value on any given piece of land and does not take into account other ecosystem services or socio-economic benefits that the land may provide.

- There may be some occasions where maximising the potential BUs on a given piece of land is not the most appropriate course of action, as this may be at the expense of other benefits conferred by the land.
- BM 4.0 does not account for individual species and, similarly, there may be occasions where maximising the potential BUs on a given piece of land is not the correct course of action if this would be at the expense of a rare specialist species of the habitat in question.
- BM 4.0 does not account for habitat heterogeneity/makes no provision for the juxtaposition of one habitat with another rendering the overall value of the habitats present to be 'more than the sum of their parts'. Again, in this example, maximising BU values at the expense of heterogeneous habitat would not be the correct course of action.

Thirdly, the requirement to exclude improvements in biodiversity that arise as a result of conditions or obligations relating to other forms of regulation outside of this PC could give rise to a scenario where actions undertaken for conservation gain on the nominated land result in a net reduction of biodiversity units, as reported under the PC. A specific example of this on our nominated land is at Sutton Bingham reservoir, where reduction in willow cover at

some locations may benefit the usefulness of the reservoir to waterbirds. If restocking of trees at other locations on the site is an obligation of a felling licence, the net loss of the willows is documented through the PC, but the net gain is not and, as above, since BM 4.0 does not account for individual species, the ecological benefits of this management intervention will not be acknowledged.

We have mitigated for these three points by proposing a performance profile which makes provision for ecologically and environmentally sound decisions in habitat management, rather than necessarily incentivising the maximum 'available' BU uplift on our nominated land.

PC units: Biodiversity Units per 100km^2 of land in the company's area, measured to two decimal places[1].

Land in Wessex Water's area will be calculated separately for the water supply area and the sewerage services area, as defined in Schedule 1 of the company instrument of appointment and combined. Therefore, where a square kilometre of land is included in both areas this will be counted as two square kilometres.

1.6.2. Our long-term ambition

2050 target: net change of 2.21 BUs per 100 km^2 of company area

Our long-term ambition is to achieve a biodiversity unit value of 3003.96 on our nominated land equating to a net increase of 382.65 BU's equating to a net increase of 2.21 BUs per 100km^2 of company area.

This is an ambitious target in the context of Wessex Water being a small landowner whose freehold land ownership is divided between nearly three thousand sites (i.e. very few significant tracts of land are owned): the nominated land represents just under 10% of all company freehold land and over 20% of the company land defined as 'eligible' for this PC. It is also an ambitious target in the context of our nominated land representing the 'best' of Wessex Water's land for biodiversity. It has been calculated to contribute over 40% of the current total BU value of the land defined as 'eligible' for consideration for the PC I.e. our nominated land already contributes a disproportionate amount to the total BU value of the Wessex Water estate and on this nominated land there are hence fewer gains in BUs to be made than if we had elected to nominate our 'poorest' land for biodiversity. The rationale here is hence a balance between a stretch target and the cost-inefficiency that would arise from delivering this PC over many, small and geographically dispersed sites, and following best conservation and economic practice of conserving and enhancing before creating or restoring.

Wessex Water has a duty to enhance and protect biodiversity as laid down in legislation and policy such as the Water Industry Act 1991, the Environment Act 1995, and Natural Environment and Rural Communities Act 2000 (as amended by the Environment Act 2021), and the Water Industry Code of Practice for Conservation, Access and Recreation (CAR). The Environment Act 2021 sets national targets, including creating or restoring in excess of 500,000 hectares of a range of wildlife-rich habitats outside protected sites by 2042, compared to 2022 levels. Our ambitions under this PC are commensurate with this target, observing the Lawton principles in our selection of nominated land.

As outlined in our Long Term Delivery Strategy, Wessex Water has various strategies to deliver the above duties outside of the scope of this performance commitment. The implementation and success of these strategies will be

[1] the reporting unit for the PC is technically 'biodiversity units per 100km^2 of land' however, for the avoidance of doubt and as clarified by Ofwat on 15th August 2023, the biodiversity performance commitment specifically measures the net change in the number of biodiversity units on nominated land per 100km^2 of land in the company's area.

subject to ongoing scrutiny from the Wessex Water Catchment Panel[2] for the duration of this PC. We thus view this PC to be proxy for our wider work on our own and on third-party land, where nomination of the land concerned under this performance commitment would not be cost-effective. To this end, Wessex Water's approach to this PC is to nominate land which gives a genuine representation of the custodianship of land during the exercise of Wessex Water's statutory functions. Sites have been selected for nomination following a systematic exercise to identify the 'best' company land for biodiversity (with a view to conserving and enhancing before restoring and creating), and the most cost-efficient way of delivering this PC, as opposed to 'cherry picking' land which necessarily offers the largest potential uplift in BUs. The sites are representative of our land use for water supply and sewerage services, i.e., they include sites for raw water storage, water treatment, source protection and sewerage treatment. Our aim is hence to present a genuine sample of the net change in BUs possible on land in use during the exercise of the company's functions, rather than presenting land which has a disproportionate focus of effort on improving biodiversity for the benefit of this PC but which does not represent activities which are replicable on our wider landholding and during the exercise of our functions.

Market research to provide an understanding of customer priorities and expectations for Wessex Water for the next 25 years, undertaken during 2021, indicated:

- The principle of 'Improving the natural environment' is the number one for positive impact, but for most people is expected.
- 'How Wessex Water are protecting the environment' is one of the main topics that customers would like to know more about.
- Customers expressed a willingness to pay more for large improvements in supporting nature and wildlife.
- 'Environment' is the most widespread area that consumers spontaneously mention Wessex could improve on.

Vulnerable customers were on average less willing to pay or not willing to pay at all for environmental developments, whereas non-vulnerable customers were willing to pay for advancements in excess of improving nature/wildlife. Future customers were found to be more concerned about the loss of biodiversity compared to the rest of the population.

The following sections outline our activity to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.6.3. Our performance and proposed baseline

Historical performance

Table 40 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Performance from base expenditure	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

[2] **Wessex Water Catchment Panel –** an independently chaired Panel of external environmental experts comprising senior representatives from Wildlife Trusts, Local Authorities, Environmental Regulators and academia. The role of the Panel is to scrutinise the environmental performance and plans of the company, including this Biodiversity Performance Commitment.

Step change in performance from enhanced expenditure	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Overall performance	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

This is a new performance commitment for AMP8, hence historic data on performance are not available.

Whilst interventions took place during AMP5 and AMP6, these pre-dated the availability of a standardised reporting metric for biodiversity (Biodiversity Metric 2.0, an updated version of the original 2012 Defra biodiversity metric arising from offsetting pilots, was first published July 2019), so these interventions are not comparable with the new performance commitment for AMP8.

During AMP5 Wessex Water conducted two biodiversity investigations, “Unimproved Grassland Habitats for Invertebrates” and “Woodland and Grassland Management to Target Bird and Bat Species”. These investigations were business plan outputs to deliver duties in respect of the NERC Act, as opposed to NEP [now WINEP] projects. Fifteen areas of company land were subject to detailed survey for birds and bats and for invertebrates as applicable. Data and recommendations informed management plans or site accounts. The combined overall cost of the investigations was c.£600K, delivered through enhancement expenditure. Aside from the benefit of increased knowledge of the value of the sites within the project, the investigations had the tangible wider benefit of providing a model and a precedent for implementing systematic, proactive conservation management on Wessex Water land. Our understanding of integrating conservation with the operational function – and associated constraints – of Wessex Water’s landholding was developed, and the profile of biodiversity and conservation was raised across the business. Processes and procedures such as consultations with relevant parts of the business prior to ‘tying up’ land in agri-environment schemes are mirrored today in the production and sign-off of management plans. One outcome of the investigations was the development of a Wessex Water habitat condition assessment, used to assess Priority Habitats to Local Wildlife Site (i.e., non-statutory) standard. This standardised method of appraising habitat condition – in lieu of a standardised reporting metric for biodiversity being available – enabled significant progression of the understanding of the biodiversity value of our landholding during AMP6 (see below).

Despite the successes of AMP5, there were lessons learnt also. The Lawton principles had become embedded in the conservation industry during AMP5 and it became apparent that a systematic ‘wholescale’ approach to identify, map and condition assess our land was an important precursor to targeting conservation effort across Wessex Water’s landholding. During AMP6, the focus shifted from individual sites to a systematic review of the habitats of the Wessex Water landholding. Over the course of our AMP6 biodiversity performance commitment, habitat mapping of all Wessex Water sites of 0.5 ha or greater was undertaken. An in-house site appraisal was used to identify habitats, and where BAP (or Priority) habitats were present an in-house condition assessment was undertaken. Habitats and their recorded condition were mapped to GIS, producing a comprehensive, geospatial dataset to enable prioritisation and targeting. Whilst this dataset has been invaluable and a vast improvement on the historic position, and the total cost of this enhancement over the AMP was £160K, the work demanded significant resource from conservation staff which resulted in time forgone on conservation activity. In addition, the validity of the dataset degrades with time. In the context of emerging technologies and industry consensus on assessment methodology in habitat mapping, repeating this exercise following the AMP6 method on a rolling basis is not deemed to represent good value for our customers. This has been a key consideration when drawing up our approach to the AMP8 Biodiversity PC.

Whilst the focus in AMP6 was shifted away from individual sites, legacy projects from the AMP5 investigations did continue, notably on two of our larger landholdings: Clatworthy reservoir and Sutton Bingham reservoir. An outcome of the AMP5 investigations was to secure a Higher Level Stewardship (HLS) agreement on the land associated with Sutton Bingham reservoir. This ten-year agreement continued for the duration of AMP6 and was the catalyst for habitat enhancement works in woodlands and ongoing conservation management of important lowland meadow habitat. This was achieved through base expenditure, assisted by income from the HLS agreement. Comments

from the Natural England adviser during the scheme's aftercare visit included "*Your management planning and attention to detail seemed really positive and I think that the results…speak for themselves*". The management of Clatworthy reservoir was taken forward into an AMP6 WINEP project (6Wx000671). Significant investment, through enhancement expenditure of £186K, was made to improve the biological condition of the woodlands and grasslands, and research and monitoring was undertaken into grassland management techniques where the use of livestock was not feasible for operational reasons. A key finding of the project was that over such a short timescale (i.e., five years), habitat response to interventions is largely not detectable as the sensitivity of the condition assessment criteria applied determine/dictate the detectability of net change in biodiversity value, whether short or long-term. This experience is directly relevant to, and has informed our approach to, the AMP8 biodiversity PC.

Our current performance

Table 41– PR24 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR24 target	N/A	N/A	N/A	N/A	N/A
Performance from base expenditure	N/A	N/A	N/A	N/A	N/A
Step change in performance from enhanced expenditure	N/A	N/A	N/A	N/A	N/A
Overall actual performance	N/A	N/A	N/A		
Forecast overall performance				N/A	N/A

As per Section 1.3.1, this is a new performance commitment for AMP8, hence current data on performance are not available. During AMP7 we have begun to marry together the outputs of AMP5 and AMP6, working on ambitious habitat restoration on statutory and non-statutory sites whilst advancing our understanding of the quantified biodiversity value of our land using data from AMP6.

During AMP7 we have undertaken a bespoke performance commitment, E4 Natural capital: improving Sites of Special Scientific Interest (SSSIs). Actions have been agreed with Natural England for each SSSI within the scope under three broad categories: 'condition review', 'land management review' and 'remedies delivery'. The PC has thus focussed on ascertaining the condition of the SSSIs/understanding the reason for this condition, reviewing land management options (be this on in-house managed, operational sites or leased, source protection land) to devise the most sustainable management to achieve and maintain Favourable condition going forward, and implementing the remedies prescribed by the land management review. Enhancement expenditure is forecast at £285K by the end of the AMP. Aside from the direct benefit of investment to effect improvements to the condition of the habitats on the ground, the PC has conferred two key benefits/areas of insight for the business:

i. Historic reliance on Natural England condition assessment of our SSSIs has, it has been shown, resulted in an inaccurate picture of the condition of our SSSIs and hence the management inputs required. The PC has demonstrated the importance of up-to-date condition data for our habitats. We have responded by building in management plan reviews and 'indicators of success' into our Site Environment Plans (company management plans for operational sites) and by exploring options to part-automate assessment of habitats on our sites, as discussed below.
ii. Condition and site assessments have shown that climatic change has necessitated an increased frequency of management of some habitats. We have also gained insight from delivery of the PC, through liaison with Natural England advisers, into management prescriptions and techniques to render our habitats more resilient to the impacts of climate change.

During AMP7 we have had two, practical biodiversity projects, as obligations under the WINEP: “Maximising Opportunities for birds” (7WW200580) and a Priority Habitats creation and restoration project (7WW200707). Our project to maximise opportunities for birds was a response to Defra’s 2016 guidance to competent authorities to halt the steep decline of bird species by taking steps to provide and protect their habitats. A high-level assessment of 50 representative operational sites has been undertaken to review what bird species are likely to be using the sites given the habitats present. Surveys will be used to inform site enhancement of at least ten of the project sites to increase their carrying capacity for birds, in particular for Priority (S41) Species. Further outcomes of the project will include recommendations for future site design to enhance new-builds or refurbishments for birds, and production of guidance for operational staff to identify opportunities to enhance sites for birds. Our project to create and enhance priority habitats on non-statutory company land included a screening phase based on the Lawton principles. This process selected three sites to deliver a target of 25 ha of improvements over a range of habitat types. We are on track to exceed this target and anticipate that we will have undertaken the necessary capital works and introduced appropriate management to restore or re-create 12 ha of calcareous grassland, create a 6.9 ha mosaic of new native woodland, neutral grassland and seasonal pools, and to restore the condition of 18 ha of saltmarsh.

Our final biodiversity project under the AMP7 WINEP (7WW200623) has been a desk-based exercise to use the habitat data collected and mapped during AMP6 to audit the quality and quantity of the biodiversity on Wessex Water landholdings. This project extrapolated the Biodiversity Unit value of our freehold landholding to Biodiversity Metric 3.0. This exercise showed that the biodiversity value of Wessex Water’s landholding is disproportionately represented across our larger landholdings. This is in line with ecological principles, but the effect is augmented by the nature and function of our smaller sites. These data and the report findings have been integral to determining our approach to, and calculating our projected performance under, the AMP8 Biodiversity performance commitment.

The forecast cost of these AMP7 WINEP projects combined to the end of AMP7 is £1.2M of enhancement expenditure.

A second desk-based exercise during AMP7 has been to review the land which is subject to Site Environment Plans (company management plans for operational sites). Improvement of the previous Site Environment Plan format arising through the implementation of our AMP7 SSSI PC, combined with the habitat data collected during AMP6 and new information on the ‘valuation’ of our landholding arising from the above WINEP project, put us in a position to target efforts towards maximising biodiversity enhancement at relevant sites. A prioritisation exercise of the known wildlife-rich habitats (i.e. data from AMP6) based on designated status, proximity to statutory and non-statutory sites and on size (i.e. following the Lawton principles of ‘bigger, better and more connected’) has produced a list of sites which would represent the most efficient use of resources to deliver our duties towards Environment Act targets.

During the latter part of the AMP we have begun to investigate the capability and feasibility of Earth Observation techniques using third party software to automate our habitat mapping. In future, it may be possible to semi- or fully-automate condition assessment of habitats: it is understood that software providers are developing this capability in collaboration with Natural England. This capability will drive efficiency: it will be key to unlocking staff resource which would be allocated to habitat survey and biodiversity accounting and instead rendering this resource available for delivering habitat interventions i.e., keeping staff resource allocated to the task of biodiversity accounting proportionate to the benefit of this exercise.

As above, because this is a new performance commitment, we do not have data on our historic and current performance in the context of the wider industry. There has to-date been no normalised approach to recording and reporting Biodiversity Units across the industry. It is worth noting, in the context of the achievements described above, that a lack of historic and current data is not synonymous with no improvements for biodiversity on our landholding. There are two factors in relation to the multipliers in BM 4.0 which will be relevant to considering our performance within the context of that of the wider industry going forward. The first factor is size of habitat. Ecological principles establish that there is more inherent biodiversity value in a larger unit of a given habitat than a smaller one. Wessex Water is not a large landowner. Its total estate (which includes all operational treatment works,

reservoirs, pumping stations etc) amounts to fewer than 3,000 hectares; of which fewer than 1700 ha are contributed by sites of greater than 10 ha and fewer than 950 ha are contributed by sites of greater than 50 ha. Significant proportions of our larger landholdings are subject to tenancy agreements; some on long leases (for example 199-year leases). The second factor is strategic significance. This is independent of any interventions undertaken by Wessex Water on the area of land in question. Another factor relevant for consideration is the high demand from AMP8 onwards on the company's landholding to deliver multiple benefits, for example operational regulatory outputs, biodiversity net gain for schemes requiring planning consent (which would not be reportable through this performance commitment), proposed overall biodiversity net gain for all capital developments (i.e., including schemes which enjoy Permitted Development), and the company's duties in respect of Access & Recreation.

Proposed PR24 baseline

The proposed baseline for PR24 is 15.15 BUs per 100 km^2 of company area.

There are two facets to the proposed baseline: selection of the land which will be nominated for the PC and the baseline BUs attributable to that land.

The rationale for our proposed baseline is set out in full in the OUT4-5 – Biodiversity commentary; however, in summary:

*Selection of nominated land***:** Nominated land attributed to five Wessex Water sites has been selected on the following bases (please see the OUT4-5 commentary for the rationale):

- 'Eligible' land for consideration for the PC was defined as follows:
  - Only company freehold land
  - Land that was reported at OUT9.6 and 9.7 is excluded
  - Reservoirs and rivers are excluded
  - Sites of less than 0.5 ha are excluded.

  The 'eligible land' represents just over 40% of Wessex Water's total freehold land.
- The nominated land represents just under 10% of the area of all company freehold land, and over 23% of the land defined as 'eligible' for consideration for the PC.
- The area of the nominated land contributes almost 43% of the total BU value of the land defined as 'eligible' for consideration for the PC, i.e., the five sites concerned contribute a disproportionate amount to the total BU value of the Wessex Water estate.
- The nominated land represents some of Wessex Water's larger landholdings to provide cost-efficiency in delivery of the PC and in line with customer willingness to pay more for large improvements in supporting nature and wildlife.
- The nominated land aims to present a genuine representation of the custodianship of land during the exercise of Wessex Water's statutory functions, rather than presenting land which has a disproportionate focus of effort on improving biodiversity for the benefit of this PC but which does not represent activities which are replicable on our wider landholding and during the exercise of our functions. The nominated land has public access hence additional public benefit will be effected through the PC.

Calculation of baseline BUs attributable to the nominated land: As this is a new performance commitment, absolute data for the baseline are not held. The baseline proposed for the nominated land has been extrapolated using the dataset arising from the company's AMP6 Biodiversity Performance Commitment, which resulted in habitat and condition mapping of all Wessex Water sites of 0.5 ha or greater. Wessex Water habitat mapping data have been used to extrapolate the equivalent habitat type and condition as per Defra's Biodiversity Metric 3.0. This method was originally developed for the AMP7 WINEP 7WW200623 project.

As noted, the PR24 baseline is an extrapolation based on several key assumptions, as described in the OUT4-5 – Biodiversity commentary. The data were collected and collated for a different purpose. Capture of linear data was not within scope of the AMP6 PC (hence linear features are not represented in the baseline): it is extremely likely that the baseline will alter upon undertaking the first assessments to BM 4.0. Our method statement for this PC provides for adjustment of the baseline (i.e., undertaking all initial surveys during 2025) so that should any net increase in BUs be an artefact of the extrapolated baseline, this does not provide Wessex Water with a false advantage.

1.6.4. Proposed Performance Commitment Level

Forecast industry performance

As noted above, this is a new performance commitment for AMP8, and we hence do not have industry data against which to compare our performance.

Performance commitment level

Considering:

- the nature of our nominated land, i.e.,
  - We have elected to nominate land which is Wessex Water's 'best' land for biodiversity, in line with the principle of conserving and enhancing before restoring and creating, in line with ecological and economic best practice. I.e., there will be less available BU uplift than if we had selected our 'poorest' land for biodiversity.
  - Our nominated land aims to present a genuine sample of the net change in BUs possible on land in use during the exercise of the company's functions the likely timescale for the habitats concerned to respond to habitat interventions;
- the likely success rate of the proposed interventions;
- the fact that this performance commitment measures observed changes in habitat; and
- the sensitivity of the BM 4.0 condition assessment

we propose the following performance commitment level:

Table 42 – Proposed performance commitment level. Note that the table shows the effect of reporting the outcome of the most recent assessment until a new assessment is undertaken (i.e. every four years). Note also the impact of footnotes 2 and 3 above in relation to discrepancy between the figures presented here and those in the OUT4 and OUT5 (and hence OUT1-3) tables.

	Measurement unit	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	BUs	2621.30	2621.30	2621.30	2621.30	2621.30
	BUs per 100 km^2 of company land	15.15	15.15	15.15	15.15	15.15
	Net change in BUs per 100 km^2 of company land	0.00	0.00	0.00	0.00	0.00

Step change in performance from enhanced expenditure	BUs	0.00	0.00	0.00	0.00	9.48
	BUs per 100 km^2 of company land	0.00	0.00	0.00	0.00	0.05
	Net change in BUs per 100 km^2 of company land	0.00	0.00	0.00	0.00	0.05
Proposed PC level	Net change in BUs per 100 km^2 of company land	0.00	0.00	0.00	0.00	0.05

The rationale for the PC level is as follows:

- The current biodiversity value of the nominated land has been extrapolated (from Wessex Water habitat mapping of its landholding) as 2621.30 BUs
- The "potential" enhanced biodiversity value of the nominated land is 4,818.01 BUs, i.e., the potential uplift in BUs of the nominated land is 2,196.71. This represents just over 36% of the current BU value of the landholding which has been defined as 'eligible' for nomination under this PC.
    - "Potential" enhanced biodiversity value is calculated based on retention of all habitat types as they are (i.e., no creation of new habitat types), but moving their condition to achieve 'good' (or retaining it as 'good' if this is already achieved).
- "Potential" enhanced biodiversity value would be achieved if all areas of all habitats in the nominated land could achieve 'good' ecological status. In practice, this will not be possible:
    - The total area of the nominated land is 272.40 ha. Of this, 83ha (around 30%) is subject to occupation by, or licence to, a third party. We are nominating this land to accept the long-term challenge of working with agreement holders and licensees to effect biodiversity gain on our landholding; however it must be recognised that changes can only be implemented when agreements renew, and rendering an agreement untenable owing to too many restrictions or requirements for a tenant or licensee is not desirable. Hence it is anticipated that the full potential will not be achievable on all of this land. This, coupled with the operational function of the nominated land, potential access issues etc., has led to the estimation that habitat intervention will be possible on 50% of the nominated land.
    - On the land where interventions are possible, environmental conditions (e.g., edaphic properties) of the site will further limit the potential to achieve the enhanced biodiversity values quoted above (e.g. semi-improved grassland will unlikely attain 'good' condition on fertile soils). In other instances, expert ecological judgement may dictate that it is not appropriate to undertake the interventions required to bring a habitat into 'good' condition, for example some semi-improved grassland may in theory be a good candidate for seed enhancement, but the ground preparations required for seed enhancement could compromise a community of waxcap fungi of conservation interest, or an area of archaeological importance. It is estimated that enhancement will be limited by 50%, on this area where interventions are possible.
- Biological systems take time to respond to habitat interventions. The duration of time it takes to achieve 'good' condition depends on the habitat type and the habitat's starting condition.
- Furthermore, the condition assessment used for BM 4.0, like all standardised condition assessments, has limited sensitivity: it will not detect, or 'acknowledge', improvements in habitat condition which are still beneath the threshold for the 'next condition score up'.
    - Transition between condition categories is binary, whereas habitat recovery is gradual. i.e., habitat could be moving in the right direction but the condition assessment will not detect change over a short (four year) reporting time period.

    - Hence habitat condition could be appraised to have improved by an experienced ecologist, but the improvement will not be detectable in the metric. Wessex Water's AMP6 WINEP investigation at Clatworthy reservoir demonstrated this point: significant investment in habitat management was made over five years, overseen by an experienced ecologist. Professional judgement informed through specific survey techniques indicated that some of these habitats were much improved by the end of the project; however the condition assessment used at the start and end of the project was not able to detect change in condition, as the improvements were below the threshold for detection.
- The BM 3.0[3] technical guidance provides guidance on 'time to target condition' (i.e., the time it will take X habitat in X condition to achieve X condition with appropriate intervention). This information has been used to profile the increase in biodiversity unit value of the nominated land as follows:
    - For each given habitat, a reduction to 0.25 of the "potential" enhanced biodiversity value is applied. This accounts for habitat intervention being possible on only 50% of the nominated land, and for a 50% success rate ('success' being defined as achieving 'good' condition) where these interventions are possible.
    - For the duration of a given habitat's 'time to target condition', the habitat recovery is profiled as linear, but with a further reduction to 10% of the "potential" enhanced biodiversity value for each specific year until the time to target condition is reached.
        - In reality, habitat condition will not be linear over the duration of the time to target condition. Some interventions will even result in a temporary reduction in habitat condition, as assessed by the metric.
        - However, given the percentage reductions applied to the potential increase in BU values for the duration of time required to arrive at the predicted increase, and given that some habitat interventions could result in an immediate, positive, change in condition, the 'straight-line approach' is deemed appropriate: introducing curves for time to target condition would imply a false level of accuracy of this exercise.
    - At and after the given habitat's 'time to target condition' the reduction to 10% of the value is removed, so that the biodiversity value shows a step change and then 'flatlines' at 0.25 of the overall "potential" enhanced biodiversity value.
- The projection of 2.5% of the overall "potential" enhanced biodiversity value over the duration of the 'time to target condition' represents an estimate of the detectable change during this period: habitat management will be evidenced to demonstrate the improvements being delivered which are not yet detectable. We anticipate surveys undertaken during 2033 will demonstrate greater change between condition gradings and hence BU change; however this will be reviewed, and reflected, in our PR29 submissions.

How we will deliver this step change

The following interventions are proposed to deliver the above step change in performance:

[3] BM 3.0 is referred to here, as opposed to BM 4.0 which is the assessment metric for the PC, as the baseline BU values for the PC have been extrapolated to BM 3.0.

Table 43 – Proposed performance commitment costs. Costs were based on costs identified in the 2022-23 FY and we do not expect any above inflation increases for these services during AMP8. Hence no inflation assumptions have been applied here.

Intervention	Capex cost (£m)	Opex cost (£m)	TOTEX cost (£m)	Expected Improvement in performance	% Impact on performance
Habitat classification and mapping by earth observation analysis software/ site assessment to ground-truth habitat mapping and classification	0.0	0.9	0.9	N/A (required to inform habitat enhancement measures and to report performance)	N/A
Survey habitat condition for BM4.0 calculations					
Grasslands: cutting, grazing, seeding, scrub clearance, scarification, fencing, invasive species control	0.0	0.7	0.7	4.97 BU	100
Bracken: bruising, cutting				0.00 BU	
Coastal saltmarsh: cutting, grazing, fencing				0.60 BU	
Lowland fen: cutting, grazing, scrub clearance, invasive species control				0.09 BU	
Ponds: de-silting, emergent and aquatic vegetation management, invasive species control, fish control.				0.17 BU	
Scrub: coppicing, clearance				0.92 BU	
Tall herb & ruderal: cutting				0.23 BU	
Woodlands: Thinning, small scale clearance (rides/glade creation), coppicing, pollarding, grazing protection, invasive species control, disease mitigation.				2.49 BU	

The interventions listed at Table 43 above are an exhaustive list of the likely interventions required to achieve good condition of the habitats present on our nominated land. Specific interventions for each site cannot be prescribed at this stage, as, in line with the PC definition, these will be guided by expert ecological judgement upon completion of the first BM 4.0 assessment. I.e., any reasons for 'failures' in the condition scoring against BM 4.0 will dictate the appropriate habitat intervention(s).

Our rationale for the proposed expenditure to deliver this step change is as follows:

- Over the course of AMP8 we propose to utilise third-party Earth Observation software to classify and map the habitats of our nominated land. This expenditure aims to result in efficiencies in the long-term which

may, particularly if condition assessment capability is also developed and its efficacy is verified, provide a more cost-efficient means of delivering this PC in future.

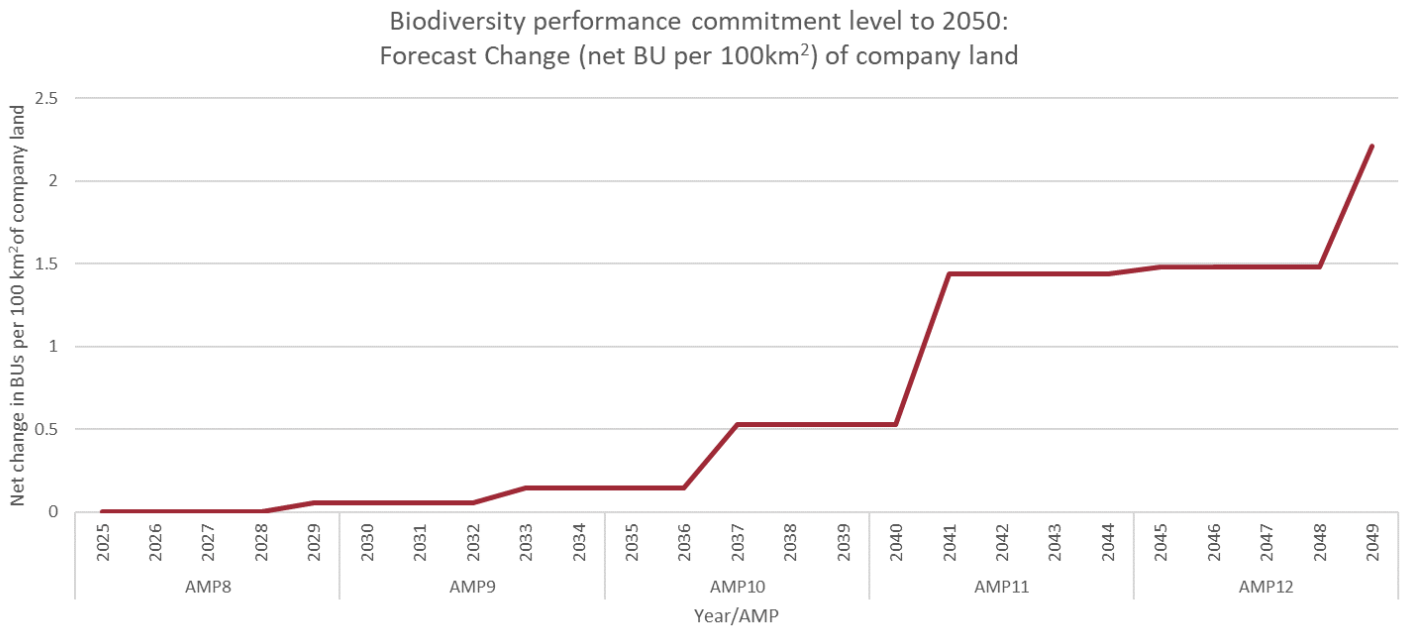
- Over the course of AMP8 we also propose to ground-truth the efficacy of the above software's habitat classification and mapping. Should condition assessment capability come online during AMP8, this will be investigated also.
- Habitat intervention will be guided by expert ecological judgement, informed by the results of the first BM 4.0 assessment and by a holistic assessment of the environmental and other requirements of the land. Habitat interventions have been costed based on previous experience of delivering similar works on Wessex Water land, as a function of habitat types and the area over which interventions could be applied.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of a total value of 3,003.96 BUs on our nominated land by 2050, i.e., a PC level net increase of 2.21 BUs per 100km^2 of company area by 2050. It is worth noting that the time to target condition for some of the habitats concerned exceeds 2050: we project a net increase in BUs on the nominated land to 2056.

Our profile to achieve this net change, in the context of our 2025-30 proposed PC level, is as follows. Note that the graph below shows the effect of reporting the outcome of the most recent assessment until a new assessment is undertaken (i.e., every four years).

Figure 8 – Profile of performance commitment



The rationale for this PC level is that, as described at 1.4.2 above, that 'time to target condition' varies depending on the habitat type and the habitat's starting condition. Our projection is based on achieving 'good' condition on 50% of the habitats, assuming that 50% of the area of the nominated sites will be 'available' (given operational function and constraints, third party rights and licences etc) for interventions. The notable step-changes in biodiversity unit increase are an artefact of time to target condition for the various habitats concerned, and the percentage reduction applied on BU increase until this time has elapsed, as described at Section 1.4.2.

This profile relates to time to target condition. It is the best option for the environment and hence for customers for two principle reasons, all of which relate to the assumption that there will be no change of habitat type on the

nominated land (i.e., improvement of all habitats to 'good' condition from their current condition, or maintenance at good condition if they already achieve this, as opposed to replacement of one habitat type for another):

- Whilst this profile assumes no change in habitat type on the nominated land, in practice there may be some habitats on the nominated land that could theoretically be 'replaced' with another to achieve an uplift in BUs (for example, bracken, which has a low BU value, could be planted as woodland). However, this may be constrained by other features of interest. For example, fritillary butterflies, which rely on bracken to complete their lifecycle, may be present. Thus the above profile provides for decisions on habitat interventions that are ecologically sound as opposed to necessarily maximising the uplift in BUs on any given piece of land.
- BM 4.0 has no multiplier for heterogeneity of habitat. The juxtaposition of one habitat with another (for example, scattered stands of scrub on calcareous grassland) can render the overall value of the habitats present to be 'more than the sum of their parts'. BM 4.0 takes no account of this; indeed the scrub in this example will likely have a lower BU value than the equivalent footprint of the calcareous grassland so, depending on minimum mapping unit, the wider habitat would be assigned a lower BU value if the grassland was heterogeneous than if the calcareous grassland was homogenous. Similar to the above, our profile of assuming no change in habitat types provides for decisions on habitat interventions that are ecologically sound as opposed to necessarily maximising the uplift in BUs on any given piece of land (i.e., our profile allows for the retention of scattered scrub on calcareous grassland, where ecologically appropriate, rather than clearing it to establish calcareous grassland in its stead).
- Some of the habitats present on the nominated land may be 'irreplaceable habitats'. As the profile is based on the presumption of enhancing existing habitat types, and not 'replacement' of one habitat type for another, this profile again provides for decisions on habitat interventions that are ecologically sound.

In practice, where it is appropriate and not at the expense of other features of conservation interest or other environmental requirements of the land (for example flood risk management, archaeological interest), installation of new habitats will be considered. This will be informed by the first BM 4.0 assessment and hence cannot be projected at present: this will be reviewed, and reflected, in our PR29 submissions[4].

Additionally, there may be other demands on the land – for example catchment or flood risk management or Access & Recreation – which would be compromised by maximising the BU value of the nominated land. Similar to the above, our overall assumption that only 50% of the nominated land will be 'available' for habitat interventions will allow other demands on the land to be accommodated. Again, this will be reviewed, and reflected in our PR29 submissions.

As it stands, this profile results in the following performance commitment profile in 2030-35. Note that the table below shows the effect of reporting the outcome of the most recent assessment until a new assessment (i.e. every four years) is undertaken.

[4] If the first BM4.0 assessments show that there are opportunities for creation of new habitats, their time to establishment will dictate that it is highly unlikely that a net increase in BUs is seen in AMP8. I.e., whilst the PC profile assumes no change in habitat type on the nominated land, deviation from this assumption is unlikely to result in over-attainment of the PC level in AMP8.

Table 44 – Projected performance commitment profile for AMP9. Note that the table shows the effect of reporting the outcome of the most recent assessment until a new assessment is undertaken (i.e. every four years). Note also the impact of footnotes 2 and 3 above in relation to discrepancy between the figures presented here and those in the OUT4 and OUT5 (and hence OUT1-3) tables.

Performance		2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	BUs	2621.30	2621.30	2621.30	2621.30	2621.30
	BUs per 100 km^2 of company land	15.15	15.15	15.15	15.15	15.15
	Net change in BUs per 100 km^2 of company land	0.05	0.05	0.05	0.05	0.05
Step change in performance from enhanced expenditure	BUs	9.48	9.48	9.48	25.37	25.37
	BUs per 100 km^2 of company land	0.05	0.05	0.05	0.15	0.15
	Net change in BUs per 100 km^2 of company land	0.00	0.00	0.00	0.10	0.10
Proposed PC level	Net change in BUs per 100 km^2 of company land	0.05	0.05	0.05	0.15	0.15

Table 45 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	0.00	0.00	0.15	0.53	1.44	2.21

1.6.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: n/a

Proposed standard ODI rate: n/a

Rationale: Ofwat have not yet confirmed the ODI rate and will do so in the remaining stages of the price review process

1.6.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only: as projected net change in biodiversity units increases in future AMPs, the P10/P90 values will vary in proportion. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 46 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	0.00	0.00	0.00	0.00	0.05

P10 rationale: P10 will only apply to the 2029/30 reporting year, as surveys are undertaken every four years and in between survey years the PC level from the previous survey is reported. P10 is based on habitat enhancement success ("success" being defined as moving the habitat in question to 'good' condition) decreasing from 50%, as assumed in the PC level, to 40% in that given reporting year. A key assumption is that a habitat would realign to its original projected pathway to 'good' condition after either a good year or a poor year, i.e., there is no cumulative impact of successive good or poor years.

Table 47 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	0.00	0.00	0.00	0.00	0.06

P90 rationale: P90 will only apply to the 2029/30 reporting year, as surveys are undertaken every four years and in between survey years the PC level from the previous survey is reported. P90 is based on habitat enhancement success ("success" being defined as moving the habitat in question to 'good' condition) increasing from 50%, as assumed in the PC level, to 60% in that given reporting year. A key assumption is that a habitat would realign to its original projected pathway to 'good' condition after either a good year or a poor year, i.e., there is no cumulative impact of successive good or poor years.

1.7. Operational greenhouse gas emissions (water) (PR24_OGW_WSX)

1.7.1. Introduction

This performance commitment will track our water supply greenhouse gas emissions according to the specific methodology devised by Ofwat. The context for this includes the UK's emissions reduction obligations as per the Climate Act; the fourth and fifth carbon budgets, and our own net zero carbon goal. This is a new common performance commitment; we have also maintained a voluntary and bespoke performance commitment since 2010.

The parameters of the new PC differ from our corporate goal in three main regards. Firstly, it uses location-based reporting, whereas we will reserve the right to use market-based reporting in the run up to 2030. Secondly it employs a static grid electricity emissions factor that is fixed at the 2022-23 level. Thirdly, it involves the addition of a number of scope 3 items that - like other water companies - we did not have in our emissions inventory at the time of our net zero commitment.

With these differences it is clear that we will need to report more than one set of emissions numbers during 2025-30; i.e. one related to the performance commitment, one related to Companies Act reporting, and one related to our corporate ne zero target.

PC units: Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) and the percentage change since 2021-22. This is also reported as kgCO2e per megalitre of volume of water distribution input.

1.7.2. Our long-term ambition

Future targets
By 2030, we aim to achieve net zero operational carbon emissions.

These are our annual emissions linked to our energy use and transport, plus other greenhouse gases that are emitted from sewage and sludge treatment processes. We also aim to achieve net zero total carbon emissions by 2040 at the latest. This includes our operational emissions outlined above, plus emissions linked to construction materials, and consumables such as treatment chemicals. Both of these targets are voluntary and very stretching.

Through our long term delivery strategy (LTDS) we are forecasting potential emissions to 2050. Our core pathway assumes that there is steady decarbonisation to zero (without offsets) from 2030 to 2050 for emissions associated with heat, transport and the supply chain, and that emissions associated with grid electricity fall to zero by 2035. Of the common reference scenarios in the LTDS we are mainly interested in the effects of technology (i.e. fast or slow evolution). For the performance commitment definition, we are forecasting a net emission of 82.09 tonnes by 2050.

The table below reflects some of our customers' views in this area and how we plan to address them.

Table 48 – Customer priorities

Key customer insight	How our plan addresses the insight
Customer awareness and concern around the impacts of climate change is growing, particularly amongst future customers	We have clear goals to reduce our carbon footprint, and this topic is central to our strategic direction statement. We are also increasing our understanding of physical climate change risks and investing accordingly.
Customers want to see efforts from Wessex Water and other companies to reduce their	We propose a number of measures within the submission to address emissions from energy, transport and sewage and sludge

emissions, however, this is perceived by many to be of less importance compared to other areas	treatment processes. These will be delivered through a combination of base maintenance and enhancement investment.

1.7.3. Our performance and proposed baseline

Historical performance

Table 49 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Performance from base expenditure	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Step change in performance from enhanced expenditure	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Overall performance	**28,660**	**26,831**	**28,080**	**27,503**	**28,058**	**29,263**	**30,999**	**31,430**	**29,369**

The overall performance line above is calculated on the same basis as the PR24 performance commitment (i.e. net location-based emissions using the 2022-23 grid average emissions factor throughout) to give a like-for-like historical sequence.

The first three rows of the table are not populated as we have not had a separate PC target for water supply emissions previously, nor has there been any associated enhancement expenditure. Indeed, there were no interventions in AMP5 & AMP6 driven primarily by GHG emissions reduction. Instead, any emission savings will have been a secondary effect of activity driven by other purposes, e.g. less energy being used as a consequence of leakage reduction. The data above suggest a slight increase in emissions from 2011-12 to 2019-20. However, we are cautious about the assessment because some items in the emission inventory (e.g. chemicals, well-to-tank energy emission) do not have sufficient information for detailed calculation during the first half of that period, so we have extrapolated backwards using a five-year running average.

Our current performance

Table 50 – PR24 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR24 target	n/a	n/a	n/a	n/a	n/a
Performance from base expenditure	n/a	n/a	n/a	n/a	n/a
Step change in performance from enhanced expenditure	n/a	n/a	n/a	n/a	n/a

Overall actual performance	**30,683**	**30,040**	**32,326**		
Forecast overall performance				**30,783**	**31,049**

Comments in 1.3.1 regarding performance commitments and interventions apply also to the current five year period. Annual emissions for 2020-21 to 2022-23 show no clear trend, with movements dominated by factors such as weather that affects year-to-year variability. Emissions for 2023-24 to 2024-25 are based on three running average extrapolations.

Proposed PR24 baseline

The base year for this PC, as instructed by Ofwat, is 2021-22. Using the 2022-23 UKWIR Carbon Accounting Workbook (CAW), water supply emissions in that year were 30,040 t CO2 equivalent.

1.7.4. Proposed Performance Commitment Level

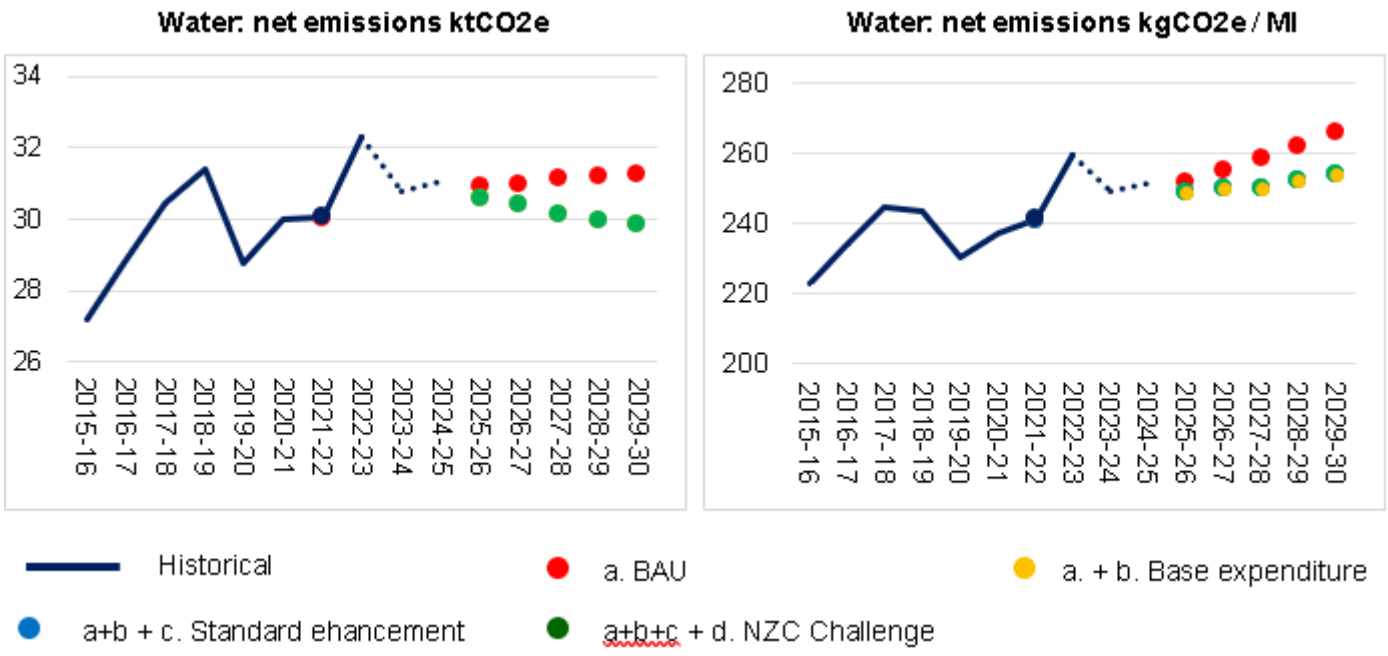
Performance commitment level

We propose the following performance commitment levels:

Table 51 – Proposed performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	30,618	30,395	30,136	29,965	29,848
Step change in performance from enhanced expenditure	0	0	0	0	0
Proposed PC level	30,618	30,395	30,136	29,965	29,848

Figure 9 – Water Net emission forecasts



This performance commitment level does not represent a step change. The main reason is that water emissions are dominated by grid electricity consumptions and opportunities to reduce electricity emissions are modest.

Emissions per Ml are expected to increase (as per the PC definition) as a result of reducing water distribution input ie. the denominator. While this means less energy being used, our emissions are not expected to also fall at the same rate as water distribution input. We have used the forecast normal year annual average as the denominator for this calculation.

It should be noted also that our true carbon footprint will be considerably lower by 2030 due to decarbonisation of grid electricity. Consequently, we believe that benefit to customers will be evident in 2030 assuming that the emissions factor for regulatory reporting is recalibrated at that point.

The red business as usual (BAU) line is pegged to our 2021-22 base year for each item in our greenhouse gas emissions inventory, except where there is a known change occurring that 'precede' carbon reduction interventions. For water supply this includes the effects of changing water distribution input; and additional electricity use that result from other water supply investment.

For annual reporting in 2023-23, our water emissions figure had an aggregate confidence grade of A2. Our default assumption is that this will hold for future annual emissions report, based on the quality of the input data. The confidence grade of our forecasts is of course lower. It is suggested that the corresponding grades will be A3.

How we will make emissions reductions

The following interventions are proposed to deliver the above change in performance:

Table 52 – Proposed interventions

Intervention	Capex cost (£)	Total 5 year opex cost (£m)	TOTEX cost (£m)	Expected Improvement	% Impact on performance

				in performance*	
To attain reductions from base					
Standby generators: 50% switch from diesel to HVO	-	0.027	0.027	173	0.6%
Energy optimisation: general programme	0.880	-0.573	0.307	333	1.1%
On-site solar (3rd party owned)	0.035	-0.911	-0.876	385	1.3%
To attain reductions from enhancement					
Not applicable	-	-	-	-	-

*Annual tonnes CO2 reduction in 2030 versus a 'do nothing' approach

These interventions have been selected on the basis that they are readily available technologies that can be deployed during AMP8. More detail is provided in WSX23 *Our route to net zero*.

In addition to these actions, one other programme is being proposed for funding through other routes, but will have emission reduction benefits that are being factored into our forecasting:

- Electric cars and vans (M&G, base maintenance): 528t CO2e benefit for the water function.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of zero tonnes CO2 equivalent in 2050, - although this would require market-based interventions and reporting as well as the measures set out in this business plan. The graphs in Figure 9 show the degree to which our 2025-30 proposed PC level contributes based on the specific calculation methodology of the AMP7 performance commitment.

If grid electricity emissions are recalibrated in 2030, we expect the following performance commitment profile in 2030-35 and beyond (these numbers are drawn from our long-term delivery strategy assessments for water emissions):

Table 53 – Proposed performance 2035 - 2050

Table heading	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance targets to achieve SDS 2050 target	31,049	29,848	29,847.76	2,103.74	492.55	82.09

However, with the current performance commitment definition, we would expect the following profile in 2030-35

Table 54 – Proposed performance commitment levels for AMP9

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	29,589	29,325	28,956	28,656	28,363

Step change in performance from enhanced expenditure	0	0	0	0	0
Forecast overall performance	29,589	29,325	28,956	28,656	28,363

1.7.5. Outcome delivery incentive

The incentive for this performance commitment will be in the form of outperformance and underperformance payments. Ofwat's guidance indicates that market rates will determine the quantum of the incentive rate and that this information will not be available until draft determination.

1.7.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 55 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	32344	32121	31862	31691	31573

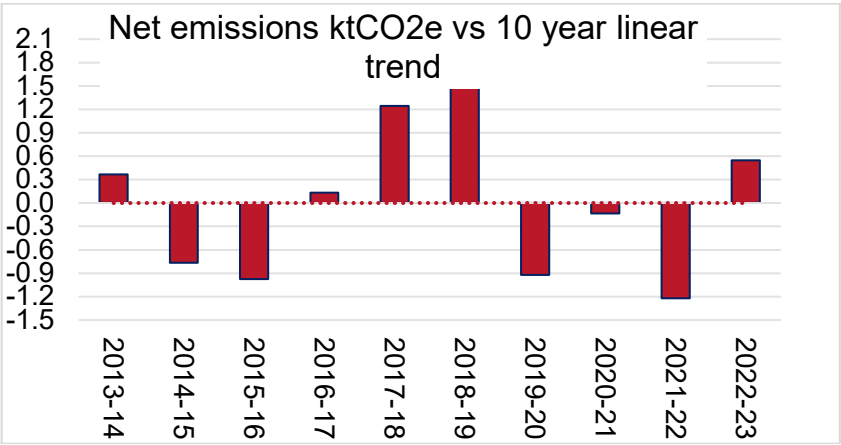
P10 rationale: the deviation from the linear trend over the past ten years as shown in the graph below. This equates to +1,726 tonnes

Table 56 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	29398	29175	28916	28745	28627

P90 rationale: the deviation from the linear trend over the past ten years as shown in the graph below. This equates to -1,220 tonnes.

Figure 10 – Net emissions (ktCO2e) vs the 10 year linear trend



1.8. Operational greenhouse gas emissions (wastewater) (PR24_OGWW_WSX)

1.8.1. Introduction

The performance commitment will track our wastewater greenhouse gas emissions according to a specific methodology devised by Ofwat. The context for this includes the UK's emissions reduction obligations as per the Climate Act; the fourth and fifth carbon budgets, and our own net zero carbon goal. This is a new common performance commitment; we have also maintained a voluntary and bespoke performance commitment since 2010.

The parameters of the new PC differ from our corporate goal in three main regards. Firstly, it uses location-based reporting, whereas we will reserve the right to use market-based reporting in the run up to 2030. Secondly it employs a static grid electricity emissions factor that is fixed at the 2022-23 level. Thirdly, it involves the addition of a number of scope 3 items that - like other water companies - we did not have in our emissions inventory at the time of our net zero commitment.

With these differences it is clear that we will need to report more than one set of emissions numbers during 2025-30; ie. one related to the performance commitment, one related to Companies Act reporting, and one related to our corporate ne zero target.

PC units: Greenhouse gas emissions expressed in tonnes CO2e (carbon dioxide equivalent) and the percentage change since 2021-22. This is also reported as kgCO2e per megalitre of volume of wastewater received at sewage treatment works.

1.8.2. Our long-term ambition

Future targets
By 2030, we aim to achieve net zero operational carbon emissions.

These are our annual emissions linked to our energy use and transport, plus other greenhouse gases that are emitted from sewage and sludge treatment processes. We also aim to achieve net zero total carbon emissions by 2040 at the latest. This includes our operational emissions outlined above, plus emissions linked to construction materials, and consumables such as treatment chemicals. Both of these targets are voluntary and very stretching.

Through our long term delivery strategy (LTDS) we are forecasting potential emissions to 2050. Our core pathway assumes that there is steady decarbonisation to zero (without offsets) from 2030 to 2050 for emissions associated with heat, transport and the supply chain, and that emissions associated with grid electricity fall according to the Department for Energy Security and Net Zero's projection for grid average carbon intensity. Of the common reference scenario in the LTDS – the main coverage will be on the effects of technology (fast or slow evolution). By 2050 we are forecasting a net emissions position of -17,377 tonnes using the PC definition.

The table below reflects some of our customers' views in this area and how we plan to address them.

Table 57 – Customer priorities

Key customer insight	How our plan addresses the insight
Customer awareness and concern around the impacts of climate change is growing, particularly amongst future customers	We have clear goals to reduce our carbon footprint, and this topic is central to our strategic direction statement. We are also increasing our understanding of physical climate change risks and investing accordingly.

Customers want to see efforts from Wessex Water and other companies to reduce their emissions, however, this is perceived by many to be of less importance compared to other areas	We propose a number of measures within the submission to address emissions from energy, transport and sewage and sludge treatment processes. These will be delivered through a combination of base maintenance and enhancement investment.

1.8.3. Our performance and proposed baseline

Historical performance

Table 58 – Historical performance and targets

Table heading	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Performance from base expenditure	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Step change in performance from enhanced expenditure	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Overall performance	**101,404**	**109,340**	**104,601**	**101,253**	**108,722**	**106,042**	**110,170**	**106,847**	**114,229**

The overall performance line above is calculated on the same basis as the PR24 performance commitment (i.e. net location-based emissions using the 2022-23 grid average emissions factor throughout) to give a like-for-like historical sequence.

The first three rows of the table are not populated as we have not had a separate PC target for wastewater supply emissions previously, nor has there been any associated enhancement expenditure. Indeed, there were no interventions in AMP5 & AMP6 driven primarily by GHG emissions reduction. Instead, any emission savings will have been a secondary effect of activity driven by other purposes, e.g. less energy being used as a consequence of leakage reduction. The data above suggest an increase in emissions from 2011-12 to 2019-20. However, we are cautious about the assessment because some items in the emission inventory (e.g. chemicals) do not have sufficient information for detailed calculation during the first half of that period, so we have extrapolated backwards using a five-year running average.

Our current performance

Table 59 – PR24 target and performance

Table heading	2020-21	2021-22	2022-23	2023-24	2024-25
PR24 target	n/a	n/a	n/a	n/a	n/a

Performance from base expenditure	115,728.54	113,983.74	112,616.53	113,411.54	113,337.45
Step change in performance from enhanced expenditure	n/a	n/a	n/a	n/a	n/a
Overall actual performance	115,728.54	113,983.74	112,616.53		
Forecast overall performance				113,411.54	113,337.45

As with water supply, annual emissions for 2020-21 to 2022-23 show no clear trend, with movements dominated by and emissions for 2023-24 to 2024-25 are based on three running average extrapolations. Comments in 1.3.1 regarding performance commitments and interventions apply also to the current five year period. There are no investments primarily driven by carbon reduction, and activities from base maintenance that benefit our carbon footprint, such as energy efficiency work, are driven as much buy their financial rationale. Alongside, we are watching developments in process emissions monitoring, led largely to date by overseas water utilities, as a likely major focus for future carbon management.

Proposed PR24 baseline

The base year for this PC, as instructed by Ofwat, is 2021-22. Using the 2022-23 UKWIR Carbon Accounting Workbook (CAW), wastewater emissions in that year were 111,986 t CO2 equivalent.

1.8.4. Proposed Performance Commitment Level

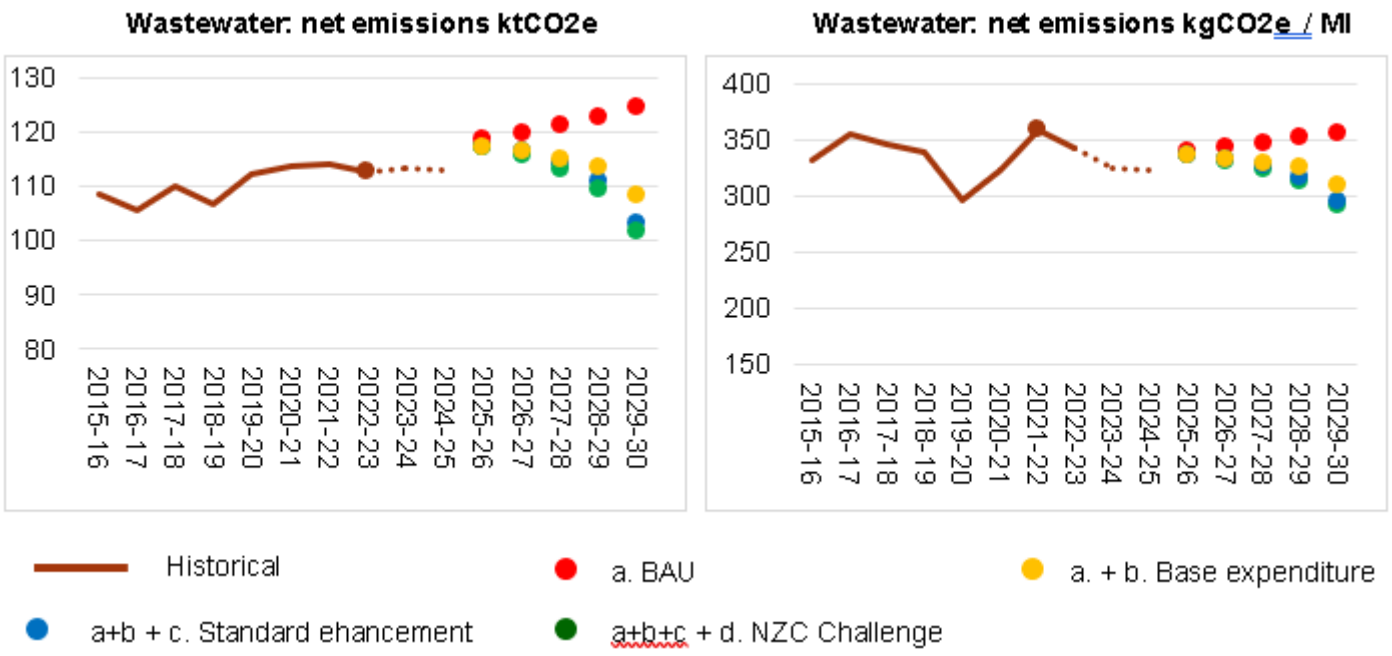
Performance commitment level

We propose the following performance commitment levels:

Table 60 – Proposed performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	117,244.50	116,381.15	114,861.75	113,602.03	108,248.83
Step change in performance from enhanced expenditure	0.00	-729.80	-1,677.03	-4,115.82	-6,583.31
Proposed PC level	117,244.50	115,651.35	113,184.72	109,486.21	101,665.52

Figure 11 – Wastewater net emission forecasts



The reduction from base would represent a 5% reduction from the 2021-22 base year. Achievement of the additional items that we have designated as enhancement, including those we propose for the net zero carbon challenge would deliver a 10.8% reduction from the 2021-22 base year.

We believe that this delivers good value for customers, as we will be making efforts to reduce our emissions through deployable technologies. It should be noted also that our true carbon footprint will be considerably lower by 2030 due to decarbonisation of grid electricity. The full benefit to customers will be more evident in 2030 assuming that the emissions factor for regulatory reporting is recalibrated at that point.

For annual reporting in 2023-23, our wastewater emissions figure had an aggregate confidence grade of B2. Our default assumption is that this will for future annual emissions report, based on the quality of the input data. The confidence grade of our forecasts is of course lower. It is suggested that the corresponding grades will be B3.

How we will make emissions reductions

The following interventions are proposed to deliver the above change in performance.

Table 61 – Proposed interventions

Intervention	Capex cost (£m)	Total 5 year opex cost (total, £m)	TOTEX cost (£m)	Expected Improvement in performance tCO2e*	% Impact on performance
To attain reductions from base					
Reduce natural gas to CHPs to 40 GWh	-	-0.392		-2,107	-1.8%

Standby generators: 50% switch from diesel to HVO	-	0.242		-1,588	-1.4%
Methane monitoring (non-IED sites)	0.224	0.125		-	
HGVs running on bio-CNG	0.300	-0.339		-1,330	-1.2%
Energy optimisation: general programme	3.520	-2.292		-1,334	-1.2%
Avonmouth FBDA	4.700	-5.395		-2,494	-2.2%
FBDA – other sites	0.873	-0.418		-286	-0.3%
On-site solar (3rd party owned)	0.065	-2.029		-858	-0.8%
Neighbouring private wire renewables	-	-	-0	-5,493	-4.8%
To attain reductions from standard enhancement					
Nitrous oxide monitoring & control – 7 sites	0.476	0.336	0.812	-1,978	-1.7%
To attain reductions from net zero carbon challenge					
Nitrous oxide monitoring & control – 13 sites	0.788	0.525		-892	-0.8%
Effluent heat recovery (Avonmouth)	1,026	-4.640		-730	-0.6%

*Emissions benefit: reduction by 2030, % vs 2021-22 waste emissions

These interventions have been selected on the basis that they are readily available technologies that can be deployed during AMP8. More detail is provided in WSX23 *Our route to net zero*.

In addition to these actions are two programmes for which funding is being proposed through other routes, but will have emission reduction benefits that are being factored into our forecasting. These are:

- Electric cars and vans (M&G, base maintenance): 980t CO2e benefit for the wastewater function
- Sludge digestion coverage (IED, Enhancement): 2,983t CO2e benefit

Two further options were appraised and deemed feasible but were not selected: sewage heat recovery from a large pumping station, and addition of a single 3MW wind turbine on company land.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of net zero emissions in 2050 a- although this would require market-based interventions and reporting as well as the measures set out in this business plan. The previous graphs show the degree to which our 2025-30 proposed PC level contributes based on the specific calculation methodology of the AMP7 performance commitment. If grid electricity emissions are recalibrated in 2030, we expect the following performance commitment profile in 2030-35 and beyond (these numbers are drawn from our long-term delivery strategy assessments for water emissions).

Not including retention of biomethane certificates

Table 62 – Performance excluding biomethane certificates

	2030-31	2031-32	2032-33	2033-34	2034-35	2039-40	2044-45	2049-50
Performance from base expenditure	78,006	70,279	73,317	70,898	63,035	50,970	40,688	30,413
Total performance from base and enhanced expenditure	71,641	67,071	63,182	59,134	49,546	33,536	21,785	17,845

Including retention of biomethane certificates

Table 63 – Performance including retention of biomethane certificates

	2030-31	2031-32	2032-33	2033-34	2034-35	2039-40	2044-45	2049-50
Performance from base expenditure	42,782	35,056	38,093	35,675	27,812	15,747	5,465	-4,811
Total performance from base and enhanced expenditure	36,418	31,848	27,959	23,911	14,322	-1,688	-13,438	-17,378

1.8.5. Outcome delivery incentive

The incentive for this performance commitment will be in the form of outperformance and underperformance payments. Ofwat's guidance indicates that market rates will determine the quantum of the incentive rate, with more information at draft determination.

1.8.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 64 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	120785	119192	116725	113027	105208

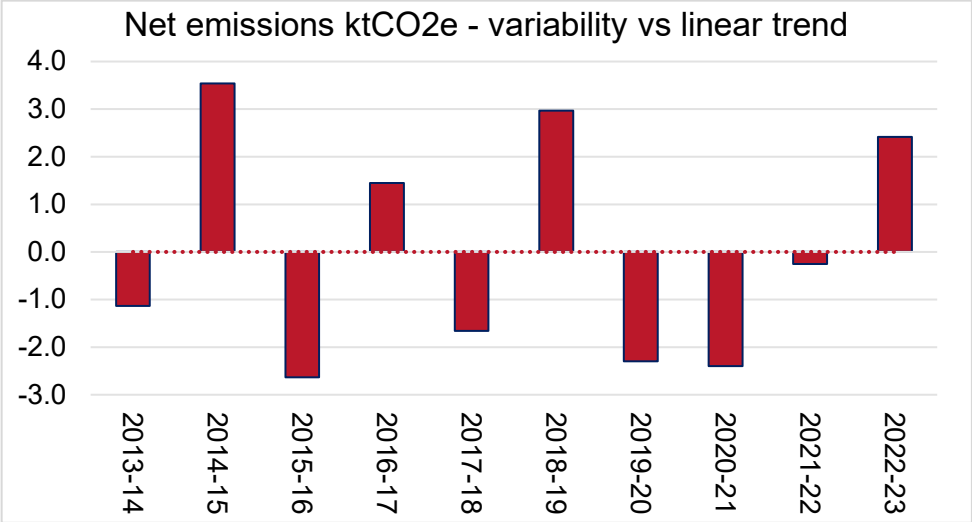
P10 rationale: the deviation from the linear trend over the past ten years as shown in Figure 12 below. This equates to +3,541 tonnes

Table 65 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	114611	113018	110551	106853	99034

P90 rationale: the deviation from the linear trend over the past ten years as shown in Figure 12 below. This equates to -2,633 tonnes

Figure 12 – Net emissions (ktCO2e) vs the 10 year linear trend



1.9. Leakage (PR24_LEA_WSX)

1.9.1. Introduction

The leakage performance commitment is designed to incentivise companies to reduce leakage from company networks. The benefits of reduced leakage are improved water resources supply-demand balance, reduced need for water abstraction and increased water supply network resilience.

The performance measure is defined as the percentage reduction of three-year average leakage in Ml/d from the 2019-20 baseline. The 2019-20 baseline is a three-year average total leakage level. This is an existing performance commitment and there have been no material changes to the definition since AMP7.

Annual average leakage is defined as the sum of distribution system leakage, including service reservoir losses and trunk main leakage 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 (Ml/d). It is reported as a post-Maximum Likelihood Estimation (MLE) figure.

Leakage is calculated through the water balance reconciliation using the MLE methodology. The water balance is comprised of two elements:

- Bottom up – a calculation of daily leakage from continuous monitoring and regular analysis of zonal or district meter area nightlines.
- Top down – an annual assessment of the distribution input and the total amount of consumption and other water use as described in the PR24 PC definition[5].

PC units: Percentage reduction.

We calculated annual average and three-year average leakage in mega-litres per day (Ml/d) but it is the percentage reduction from the 2019-20 baseline that is reported for the performance commitment.

1.9.2. Our long-term ambition

2050 target: 50% reduction from the 2017-18 baseline.

There are several regulatory targets for demand management which have been set out under the Environment Act 2021 to reduce the use of public water supply in England per head of population by 20% by 2038 from the 2019/20 reporting figures[6]. To achieve this, the leakage target of 37% reduction by March 2038, on a glidepath to 50% reduction by 2050 from the 2017-18 baseline has been outlined in the Environment Improvement Plan. To achieve this target, we must report an in-year leakage value of 38.5 Ml/d or less in 2050. In terms of baseline used in the performance commitment measurement, this is a 46.3% reduction of the in-year reported values from the 2019-20 three-year average baseline used in the performance commitment.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

[5] Performance commitment definition - Leakage (ofwat.gov.uk)
[6] Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK (www.gov.uk); Environmental Improvement Plan (publishing.service.gov.uk); Water targets Detailed Evidence report.pdf (defra.gov.uk)

1.9.3. Our performance and proposed baseline

Historical performance

The below data is in line with the PR24 performance commitment definition.

Table 66 – Historical performance and targets

	2017-18	2018-19	2019-20
Overall performance (Ml/d)	76.5	75.6	67.9

Our leakage policy has always been one of continual investment to optimise the efficiency of our leakage activities and to test new technology and ideas for managing leakage. During each year of AMPs 5 and 6, £250k was budgeted for additional schemes to improve the efficiency of our leakage management. Projects delivered at that time included:

- **PRV control upgrading:** Pressure management is the most cost-effective leakage management strategy. In recent years the focus has moved away from installing new PRVs to optimising the performance of our existing units. Of the 1,200 PRVs in the network around 300 have outlet pressure modulation, and previous initiatives have seen most of the old style two stage modulation units replaced with new style flow modulation.
- **PRV critical point monitoring:** We have been optimising the performance of our PRVs by installing critical point loggers for a number of years.
- **WaterNet – Small area monitor:** The development of WaterNet has enabled more accurate measurement of DMA leakage which has improved the prioritisation of our active leakage control resources. However, we have encountered problems during the hot dry summer of 2013 as WaterNet cannot distinguish the difference between increases in leakage and increases in legitimate night-time consumption due hot dry summer weather.
- **Study of seasonal changes in night use:** We commissioned a study into seasonal changes in night use, DM#1578695, which concluded that a robust Small Area Monitor should be implemented. This monitors in detail 61 small areas to allow a seasonal night use adjustment to be made within WaterNet using near real time data. This is a significant investment, requiring £70k in 2014/15 and £200k in 2015/16. However, given the problems managing leakage during the hot dry summer of 2013 both Operations and E&A are in agreement this represents the right leakage efficiency investment for the Company at the present time.
- **WaterNet – Additional commercial logging:** The small area monitor deals with seasonal changes in night use from domestic customers. The study we commissioned into seasonal changes in night use also recommended additional commercial logging to better account for seasonal changes in non-domestic customers. Analysis has identified 75 DMAs (out of our total of over 650) which display distinct seasonal night use and have significant commercial use. Our current performance

Table 67 – PR19 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
Overall actual performance (Total Annual Leakage in Ml/d)	65.1	63.3	71.2		
Forecast overall performance (Total Annual Leakage in Ml/d)				63.5	63.8

PR19 target (%)	1.6%	3.9%	6.9%	9.9%	12.8%
Step change in performance (3 year average % reduction)	5.2%	10.8%	9.3%	10.0%	9.8%

The figures for 2020-21 to 2022-23 are those reported in the Table 3A W1 in the APR. Leakage is calculated in accordance with UKWIR Consistency of Reporting Performance Measures Report 17/RG/04/5 and Ofwat's final reporting guidance report for PR19. It is calculated using Maximum Likelihood Estimation (MLE) to reconcile the difference between the components of the water balance.

Preparations and associated reductions for AMP7 began late in AMP6. Significant investment in further ALC personnel were made, alongside a major purchase of loggers for fixed acoustic networks. Major schemes were delivered to ensure readiness for the implementations of the consistent reporting requirements of ongoing annual funding to remain compliant. Throughout this AMP, we have continued to invest in acoustic networks and the construction of Central Zones, both of which are areas of work that are aimed at identifying leakage increases sooner and targeting the recovery more quickly to reduce leak runtime. We have also progressed pressure management significantly in the last few years, growing the capability and investing in data and systems, e.g. Waternet functionality and network modelling software. We have also moved to managing our data logger assets in Microsoft Dynamics and we have established a dedicated Trunk Main Leakage team.

Overall actual performance in 2022-23 saw an increase in total leakage due to leakage outbreaks resulting from ground shrinkage caused by the long hot summer and further break out in December and January as a result of severe cold weather events. Much of this leakage has been recovered by the start of 2023-24 reporting year and we are now confident we can achieve the 2022-24in year target through a continuation of existing efforts.

We have taken a lesson learned approach to last year's events and embedded some new monitoring and forecasting systems along with revised working practices to try and predict/react to situations when they appear. For example, from April 2023 we have separated the repair of customer supply pipe leak workstream from our normal repairs and maintenance works. These leaks comprise of between 25-30% of our total leaks per year but tend to be smaller in volume than those which occur on the network. This work was previously completed by our multi-skilled in-house repair teams but to enable efficiencies they are now able to focus on the higher volume, more technical and complex leaks that occur on water mains, communication pipes and network fittings. This efficiency means we will have increased capability to reduce leak run times whilst also providing additional resilience in the event of extreme weather events.

Forecasted figures for the remainder of AMP7 are taken from Line 39FP in WRMP24 Planning Table 3c: DYAA – Final Plan. Forecasts for the end of AMP7 are not expected to achieve the PR19 AMP7 target.

Proposed PR24 baseline

Proposed baseline: 63.8 Ml/d

Rationale: The PR24 proposed baseline is the total annual leakage value forecasted for Year 5 of PR19 (2024-25).

Improvement from the baseline is proposed as part of the business plan version of the WRMP24 demand management strategy which has been derived to achieve the statutory leakage reduction target of a 50% reduction from the 2017-18 baseline by 2050.

1.9.4. Proposed Performance Commitment Level

Performance commitment level

We propose the following performance commitment level for AMP8:

Table 68 – Proposed performance 2025-2030

Performance in AMP8	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	13.0%	13.0%	13.0%	13.0%	13.0%
Step change in performance from enhanced expenditure	0.4%	0.7%	1.5%	2.5%	3.6%
Proposed PC level	13.4%	13.7%	14.5%	15.4%	16.6%

Forecasted total annual leakage is taken from the WRMP24 Planning table 3c with the business plan version of the demand strategy applied. An explanation for the difference in the demand strategy applied here is detailed in Section 1.9.7.

In our revised Water Resources Management Plan, we proposed significant reductions in leakage with a target 7.7 Ml/d total reduction between 2025-30 achieved through a combination of smart meter roll-out and enhancement of our core leakage reduction strategies. However, based on customer feedback and in response to the July 2023 EA Information Letter 17/2023 to consider phasing activities from PR24 into future price review periods, we have significantly reduced our proposed leakage reduction and smart metering programmes and as a result our forecast leakage reduction in AMP8 has reduced to 3.5Ml/d. We maintain an approach that enables us to meet the long-term target of a 50% reduction by 2050.

Our preferred plan now forecasts a 3.5 Ml/d leakage reduction between 2025 and 2030. Further detail outlining how we propose to achieve this reduction is provided in section 1.9.7 below.

How we will deliver this step change

The following interventions are proposed to deliver the above step change in performance:

Table 69 – Proposed interventions

Intervention	Capex cost (£m)	Opex cost (£m)	TOTEX cost (£m)	Expected Improvement in performance Leakage reduction (Ml/d)	% Impact on performance
Active Leakage Control (ALC)	14.8	2.5	17.3	1.47	42%
Pressure Management	2.5	1.8	1.6	0.4	11%

Trunk Main Leakage Reduction	0.6	0.7	1.3	0.08	2%
Data systems	0.7	0.3	1	0.05	1%
*Smart metering - Customer Supply Pipe (CSP) Leakage reduction	N/A	N/A	N/A	1.5	43%

Rationale:
We are committed to meeting our regulatory target of 50% leakage reduction by 2050. To achieve this, we will build on our current leakage reduction strategy with greater focus on expanding our acoustic logging and smart network capabilities, using data to bring about efficiencies in the active leakage control 'find and fix' backbone of our operation. We plan to invest further in our trunk main leakage activities, expanding our dedicated team so they're better able to resolve these inherently difficult to detect leaks.

In addition to these 'fix' activities we will also expand strategies that help prevent leakage such as pressure management. We have a mature pressure management operation but plan to expand this further to include more full flow modulation control devices and new control technologies such as closed loop systems. Pressure management has additional benefits beyond leakage reduction, a 'calmer' network prolongs asset life and reduces water quality risks such as discolouration.

Smart metering data will also play a key role in the evolution of our leakage strategy, allowing us to identify customer supply pipe leaks much sooner than current detection methods, and also identify smaller volume leaks that would have otherwise gone undetected.

For further information please refer to WSX15 annex 2 and CW19 commentary.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 50% reduction by 2050 from the 2017-18 level (ie. 46.3% reduction of the in-year reported values from the 2019-20 three-year average baseline used in the performance commitment). Our profile to achieve this in the context of our 2025-30 proposed PC level with enhancement expenditure in AMP9 and beyond is shown in Figure 13.

Figure 13 – Proposed profile of leakage reduction to 2050

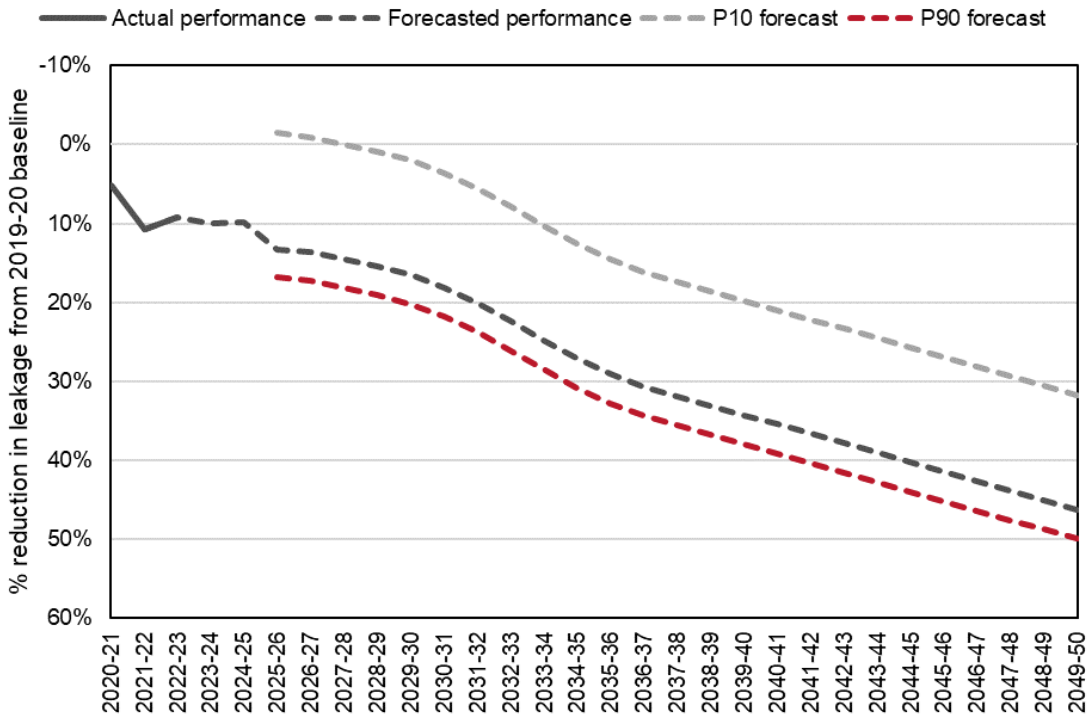


Table 70 – Performance profile 2025-2050 (three year average % reduction)

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	9.8%	16.6%	27.1%	34.3%	41.5%	46.3%

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 71 – Proposed performance 2030-2035 (three year average % reduction)

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	17.4%	17.8%	17.8%	17.8%	17.8%
Step change in performance from enhanced expenditure	0	0	0	0	0
Total performance	17.4%	17.8%	17.8%	17.8%	17.8%

This profile reflects the percentage reduction in leakage from the 2019-20 three-year average baseline. It should be noted that these figures differ to those populated in OUT1-4 as enhancement expenditure in AMP9 is excluded from the OUT tables. We forecast that base expenditure in AMP9 will maintain the Y5 AMP8 total annual leakage figure so there won't be any additional reduction from the 17.8% achieved in 2031-32 (resulting in Y2 of AMP9 as a result of the use of the three-year average):

1.9.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.364m outperformance and -£0.364m underperformance payment

Proposed standard ODI rate: £0.364m outperformance and -£0.364m underperformance payment

1.9.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 72 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	-1.4%	-1.0%	0.0%	0.9%	2.1%

P10 rationale: P10 is the average of the three most recent 'worst' years (2017-18, 2018-19, and 2022-23) minus the difference between the baseline and final plan three-year average. This results in a three-year average leakage value of 71.8 Ml/d, a reduction of 2.1%, at the end of AMP8.

Table 73 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	16.8%	17.2%	18.2%	19.1%	20.3%

P90 rationale: P90 has been calculated to reach a 2049-50 three-year average figure of 36.7 Ml/d which is a 50% reduction on the AMP6 three-year average. This results in a three-year average leakage value of 58.5 Ml/d, a reduction of 20.3%, at the end of AMP8.

Please note that the above values are in the same units as the performance commitment (percentage reduction of three-year average leakage in Ml/d).

1.9.7. Alignment with WRMP24

Our overall demand strategy, as derived through the Water Resources Management Plan process, will ensure we meet the requirements for licence reductions that are required to protect the environment, and are on a glidepath to achieving 2050 targets for PCC, leakage, business demand, and the Distribution Input target in 2037-38.

Customer feedback suggested our proposals went too far for customer preference on smart metering and leakage reduction. Wessex Water received a guidance letter from the EA on 5 July (Information Letter: EA/17/20023) asking us to consider phasing activities from PR24 into future price review periods to ensure our PR24 programme as a whole is deliverable, financeable and affordable for customers. This provided an opportunity to reflect customer preference in our business plan. As this letter was received just prior to submission of our revised draft WRMP, there was not time to update our WRMP based on this guidance, therefore there are some material changes in savings and costs presented in our revised draft WRMP and PR24 submissions.

The changes associated with this guidance relate to our demand management strategy and in particular a change to phasing of our smart metering programme and leakage reduction activities, reducing activity in AMP8 and increasing in AMP9 whilst ensuring we remain on-track to meet our statutory and long-term targets.

Smart Metering

In our revised draft WRMP, we set out a plan to achieve 75% smart meter penetration across our region by the end of AMP8, increasing to 95% by the end of AMP9. Based on customer feedback, for our PR24 business plan, AMP8 activity was scaled back to achieve 40% smart meter penetration with the programme being focused on the Hampshire Avon area, still completing our roll-out to 95% of properties by the end of AMP9. Smart meter installation numbers for our revised draft WRMP and updated PR24 plan are shown below:

Table 74 - Cumulative number of AMI smart meters installed (HH and NHH) - WRMP / PR24 comparison.

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
WRMP AMI meters installed (000s)	52.31	161.53	270.59	379.14	487.22	516.93	546.76	576.49	606.17	632.76
PR24 AMI meters installed (000s)	51.58	103.11	154.70	205.91	256.74	334.03	411.31	488.38	565.31	639.68

Leakage

Based on customer feedback and linked in part to the reduction in smart metering ambition for AMP8 and associated impact on customer supply pipe leakage (CSPL) reduction, our overall AMP8 leakage reduction programme was scaled back for our PR24 submission. Our revised draft WRMP set out a plan to reduce leakage by 7.7 Ml/d in AMP8, with 2.7 Ml/d of this being CSPL reduction associated with smart metering. Activity was scaled back for our PR24 business plan to target a 3.5 Ml/d reduction in AMP8, with 1.5 Ml/d of this being CSPL reduction associated with smart metering. Forecast in-year leakage profiles for our revised draft WRMP and updated PR24 plan our shown below:

Table 75 – Forecast in-year leakage profiles.

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
WRMP Leakage - in year (Ml/d)	62.72	61.45	59.93	58.15	56.11	55.23	54.35	53.47	52.59	51.71
PR24 Leakage - in year (Ml/d)	63.33	62.75	62.04	61.23	60.29	58.57	56.86	55.15	53.43	51.72

1.10. Per capita consumption (PR24_PCC_WSX)

1.10.1. Introduction

The Per Capita Consumption (PCC) performance commitment is designed to incentivise companies to help customers reduce their consumption. The benefit of reduced PCC is that it will improve long term water resources supply/demand balance and reduce need for water abstraction.

The performance measure is defined as the percentage reduction of three-year average PCC in litres per person per day (l/person/d) from the 2019-20 baseline. The 2019-20 baseline is a three-year average PCC. This is an existing performance commitment and there are no material changes in the definition since AMP7.

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

$$\frac{Measured\ household\ consumption\ +\ Unmeasured\ household\ consumption}{Total\ household\ population}$$

The measured and unmeasured household consumption uses post MLE (maximum likelihood estimation) data, as defined in the leakage performance commitment. Measured Consumption data is retrieved from billing data and unmeasured consumption is derived from the unmeasured consumption monitor. These values are used at year end in the water balance reconciliation using the MLE methodology. The total household population estimate is produced each year based on the Water Resources Management Plan definition of household population as set out in the guidelines and the UKWIR methodology for estimation of population.

PC units: percentage reduction

We calculate annual average and three-year average per capita consumption in l/person/d but it is the percentage reduction of the three-year averages from the 2019-20 baseline that is reported for the performance commitment.

1.10.2. Our long-term ambition

2050 target: 110 litres per person per day (a 21.9% reduction from the 2019-20 baseline).

There are several regulatory targets for demand management which have been set out under the Environment Act 2021 to reduce the use of public water supply in England per head of population by 20% by 2038 from the 2019/20 reporting figures[7]. To achieve this, a target of reducing PCC to 122 l/person/d by March 2038, on a glidepath to 110 litres/person/d by 2050 has been outlined in the Environment Improvement Plan. To achieve the statutory target of a PCC of 110 l/person/d by 2050, we must reduce PCC by 21.9% from the 2019-20 baseline of 137.8 l/person/d.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

[7] Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK (www.gov.uk); Environmental Improvement Plan (publishing.service.gov.uk); Water targets Detailed Evidence report.pdf (defra.gov.uk)

1.10.3. Our performance and proposed baseline

Historical performance

Table 72 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target (l/p/d)	-	-	-	137	135	134	133	132	131
Performance from base expenditure (l/p/d)	140.0	136.0	138.0	138.0	138.0	141.2	143.2	147.0	145.3
Step change in performance from enhanced expenditure (l/p/d)	-	-	-	-	-	-	-	-	-
Overall performance (l/p/d)	140.0	136.0	138.0	138.0	138.0	141.2	143.2	147.0	145.3

There has been an upward trend in PCC since around 2012-13 with a notable spike upwards in 2019-20 and 2020-21 linked to the Covid-19 pandemic. In these later years people were mandated by government to stay at home for periods of 'lockdown'; whilst household demand has declined in 2021-22 "post-pandemic" there has been a societal shift towards continued homeworking for some people and its associated increase in water use at home.

Measured customers consistently have a lower average PCC than unmeasured, hence our use of metering strategies to reduce household demand in recent years. We proposed a change of occupier metering policy for our supply area in WRMP14 and introduced it from October 2016. In December 2017, we launched our Money Back Guarantee: our promise to customers who opt to have a meter that if their total metered bill is higher after two years than it would have been had they remained unmetered, they can choose to revert back, and we will return them back to being an unmetered customer from the date they had the meter installed. We will also credit any over-payments to their account.

In WRMP19, we developed an enhanced metering programme which alongside the continuation of our change of occupier metering programme, it also included an optional metering programme with a promotional uplift. All meters installed in previous years have been basic or AMR, but the AMR meters function as basic meters so we do not achieve any consumption savings associated with such smart meters. WRMP19 also proposed the delivery of two enhanced water efficiency programmes: home check, and a customer engagement dashboard. The home check scheme enabled us to accelerate our programme of tailored in home advice and device fitting visits to promote reductions in consumption. The customer engagement dashboard option enhanced our online services to help customers better understand their water use and to encourage repeat participation, inevitably reducing consumption.

Our current performance

Table 77 – PR19 target and performance – shows PR19 target percentage reduction and percentage reduction of the three-year average PCC. Overall performance in l/person/d is reflective of the three-year average.

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target (% reduction)	0.1%	0.2%	0.3%	0.4%	0.9%
Performance from base expenditure (% reduction)	-3.9%	-5.2%	-5.3%	-2.6%	-1.7%
Step change in performance from enhanced expenditure (% reduction)	-	-	-	-	-
Overall actual performance (l/person/d)	143.1	145.0	145.2		
Forecast overall performance (l/person/d)				141.5	140.1

Our PR19 performance commitment target for PCC is 0.9% reduction by 2024-25. Our forecasts for the remainder of AMP7 are taken from WRMP24 and suggest that this target will not be met with associated commentary in our WRMP. All performance in AMP7 is delivered through base expenditure.

Total household consumption and population figures used in the PCC calculation are taken from APR tables 3A W2 and 4R, respectively, for 2020-21 to 2022-23. The consumption figures are calculated along with leakage in accordance with the UKWIR Consistency of Reporting Performance Measures Report 17/RG.04/5 and Ofwat's final reporting guidance report for PR19[8]. It is calculated using the Maximum Likelihood Estimation (MLE) to reconcile the difference between the components of the water balance.

PCC has been significantly impacted by the impacts of Covid-19 and its lockdowns through 2020-21 and 2021-22, with a move to more people at home and a change in working patterns resulting in an increase in household consumption. 2022-23 has seen a reduction in the in-year PCC in comparison to the previous year and has returned to a level comparable to the per capita water use seen before the Covid-19 pandemic. Although working patterns have changed since before the pandemic, with more people now working from home for at least part of the week, the overall number of home-workers has declined since the height of the pandemic in 2020-21. In addition, the cost-of-living crisis and particularly increasing energy bills since September 2022 has resulted in customers making behavioural changes to reduce their use of water and especially hot water.

While the periods of hot dry weather in the summer of 2022 led to increased customer demand, overall average per capita consumption is now comparable to demand levels prior to the pandemic. Our water efficiency promotions had a high uptake from customers during the year as they were motivated to save water in relation to both the drought and to reduce hot water use linked to the energy price increases. We re-launched our Home Check service to install water saving devices and offer bespoke behavioural advice to customers in their homes in April 2022. By the end of the year, we had visited 4,439 customers, and plumbers returned to 750 of these to fix leaking toilets and taps. We promoted our free water saving device pack through social media and in e-newsletters and distributed

[8] Outcomes definitions - PR19 - Ofwat

over 18,000 packs during the year, including nearly 11,500 eco shower heads. Over 21,000 households also signed up to use our online GetWaterFit water use calculator. In August 2022 we also launched a new non-household water efficiency programme targeting schools for device installations and leak fixes – we supported 91 schools by the end of March 2023. We continued to install meters when there is a change of occupier and when customers opted to switch to metered charges. We installed 6,826 new meters this year. The number of people opting for a meter was higher than the previous four years. This is likely due to the cost-of-living crisis putting pressure on all areas of household expenditure and customers wanting to do more to take control of their bills.

Due to the lasting impacts of Covid, it is unlikely that we will meet the PR19 performance commitment target by the end of AMP7 and are therefore forecasting a PCC figure in line with that forecasted in the revised draft WRMP24. The Water Resources Management Plan forecast accounts for the change in household demand since 2020 and the uncertainty in more recent consumption patterns as a result of the cost-of-living crisis. Nonetheless, over the next two years we expect PCC to reduce as we continue to deliver our demand management activities and as customers continue to be aware of their water and energy use due to the continued impact of the cost-of-living crisis. Our demand management activities include:

- Continuation of metering on change of occupier and optional metering. We have seen an increase in the number of optants following our unmetered bills going out in February. We will continue to promote the benefits of our Money Back Guarantee so that customers are aware they can try out a meter without the financial risk.
- Offering high users our Home Check water efficiency service; installing devices, providing tailored advice and fixing leaks.
- Promotion of non-household water efficiency audits to schools in partnership with retailers.
- The continued promotion of our GetWaterFit digital calculator.
- Promotion of discounted water butts to customers to help reduce demand in the summer months.
- The incorporation of behavioural science approaches in water efficiency communications.
- Collaboration with the Water's Worth Saving national campaign, and other promotional initiatives in partnership local organisations.
- Seeking opportunities to work with developers to increase water efficiency in new builds.

Proposed PR24 baseline

Proposed baseline: 140.81 l/person/d

Rationale: The PR24 proposed baseline is the forecasted annual per capita consumption for Year 5 of AMP7 (2024-25). This is a 2.2% increase from the 2019-20 three-year average baseline figure and indicates that we are not forecasting to achieve the PR19 AMP7 target.

Improvement from the baseline is proposed as part of the business plan version of the WRMP24 demand management strategy which has been derived to achieve the statutory PCC target of 110 l/person/d by 2050.

1.10.4. Proposed Performance Commitment Level

Performance commitment level

We propose the following performance commitment level for AMP8:

Table 78 – Proposed performance 2025-2030

Performance in AMP8	2025-26	2026-27	2027-28	2028-29	2029-30

Performance from base expenditure (% reduction)	-2.2%	-2.2%	-2.2%	-2.2%	-2.2%
Step change in performance from enhanced expenditure (% reduction)	0.2%	0.8%	1.9%	3.1%	4.2%
Proposed PC level (3 year average % reduction from baseline)	-1.9%	-1.3%	-0.3%	0.9%	2.0%

Forecast performance from base expenditure in AMP8 is the percentage reduction that is reflective of the Y5 AMP7 in-year PCC figure of 140.8 l/p/d. This is a 2.2% increase on the 2019-20 baseline figure of 137.8 l/p/d. We use the AMP7 Y5 figure as the base expenditure baseline for AMP8 as this reflects the PCC level that we will maintain without any enhancement expenditure applied in AMP8.

How we will deliver this step change

The following interventions are proposed to deliver the above step change in performance:

Table 39 – Proposed interventions

Intervention	Capex cost (£m)	Opex cost (£m)	TOTEX cost (£m)	Expected Improvement in performance (% reduction)	% Impact on performance
Smart metering*	79	10.3	89.3	1.8%	43%
Water efficiency programme – including Home Check visits	0	9.2	9.2	2.4%	57%

*Smart metering impacts leakage in addition to PCC.

Rationale:
The benefits of smart metering centre around the valuable customer usage data smart meters provide and how this data can be transformed into demand savings through identifying and resolving internal and supply pipe leakage and offering tailored support to customers on water efficiency.

Customer behavioural change – the high-resolution water use information that can be shared with customers, via an app or other means, will empower customers to understand their water usage and thus make changes to reduce usage and manage bills if supported by appropriate water efficiency engagement.

The availability of high-resolution consumption data arising from the smart metering roll out will facilitate ever better targeting of water efficiency services, and in particular our Home Check programme for household customers. Our existing Home Check programme which involves an in-home visit from a technician to fit water saving devices, check for plumbing leaks and offer tailored behavioural advice on water saving, targets the highest water using households using 6-monthly meter read information to maximise the savings per visit. The availability of hourly data will allow even more effective targeting and the rapid identification of continuous flows to reduce the run time of plumbing losses from leaking toilets and taps.

Further information on our demand reduction strategy can be found in WSX15 annex 2.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 110 l/person/d in 2050, equivalent to a 21.9% reduction from the 2019-20 baseline. Our profile to achieve this in the context of our 2025-30 proposed PC level with enhancement expenditure in AMP9 and beyond is shown in Figure 14.

Figure 14 – Proposed profile of PCC reduction to 2050

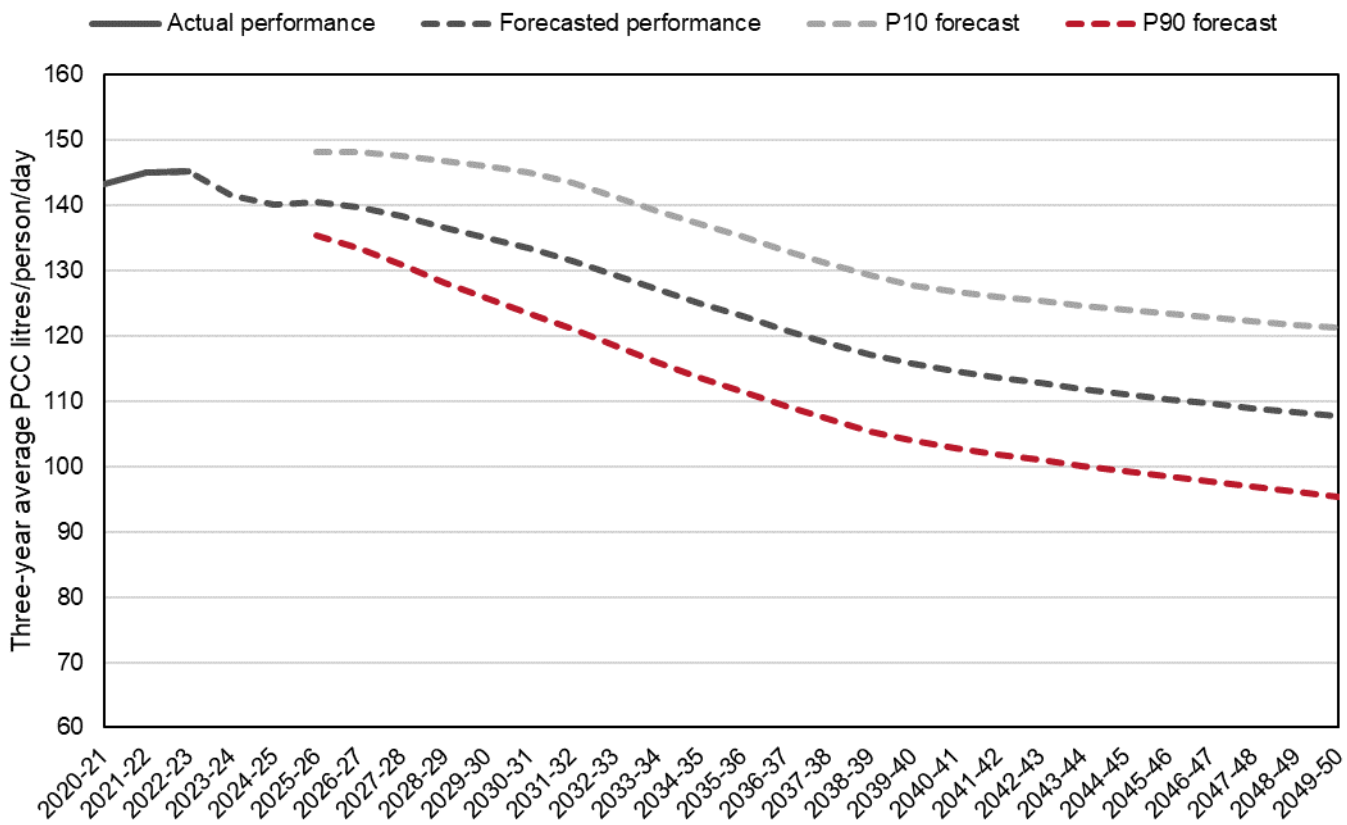


Table 80 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	-1.7%	2.0%	9.3%	16.1%	20.0%	21.9%

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 81 – Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	2.0%	3.8%	4.3%	4.6%	4.8%

Step change in performance from enhanced expenditure	1.2%	0.8%	1.9%	3.2%	4.5%
Total performance	3.2%	4.6%	6.2%	7.8%	9.3%

For AMP9, as per the table guidance, we must exclude any reductions to the household consumption forecast that are a result of enhancement expenditure. Therefore, in year total household consumption from 2030-31 onwards reflects the consumption once all impacts from AMP8 enhancement expenditure are applied. As total household consumption in Line OUT4.45 has been staggered to reflect half of the current and half of the previous year's savings, the total household consumption in AMP9 reflects the residual impacts of efforts in 2029-30 but no further reductions in 2030-31. Any reductions to consumption beyond this figure will be a result of enhancement expenditure, the base expenditure will maintain the consumption figure of 180.6 Ml/d. Although population continues to increase through AMP9, hence an increase in PCC performance, we assume that the efforts made to reduce PCC in AMP8 will be residual through AMP9, with previously targeted customers continuing to reduce their consumption and will balance out the consumption from new customers connected.

1.10.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.483m outperformance and -£0.483m underperformance payment

Proposed standard ODI rate: £0.483m outperformance and -£0.483m underperformance payment

1.10.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1-in-10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 82 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	-7.4%	-7.4%	-7.0%	-6.4%	-5.9%

P10 rationale: this is the DYAA high PCC scenario minus the difference between the baseline and final plan three-year average. This results in a three-year average PCC of 146.0 l/person/d at the end of AMP8.

Table 83 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	1.8%	3.2%	5.0%	7.0%	8.8%

P90 rationale: this is the NYAA low scenario PCC minus the difference between the baseline and final plan three-year average. This results in a three-year average PCC of 125.7 l/person/d at the end of AMP8.

Please note that the above values are in the same units as the performance commitment (percentage reduction of three-year average leakage in litres/person/day).

1.10.7. Alignment with WRMP24

Our overall demand strategy, as derived through the Water Resources Management Plan process, will ensure we meet the requirements for licence reductions that are required to protect the environment, and are on a glidepath to achieving 2050 targets for PCC, leakage, business demand, and the Distribution Input target in 2037-38.

Customer feedback suggested our proposals went too far for customer preference on smart metering and leakage reduction. Wessex Water received a guidance letter from the EA on 5 July (Information Letter: EA/17/20023) asking us to consider phasing activities from PR24 into future price review periods to ensure our PR24 programme as a whole is deliverable, financeable and affordable for customers. This provided an opportunity to reflect customer preference in our business plan. As this letter was received just prior to submission of our revised draft WRMP, there wasn't time to update our WRMP based on this guidance, therefore there are some material changes in savings and costs presented in our revised draft WRMP and PR24 submissions.

The changes associated with this guidance relate to our demand management strategy and in particular a change to phasing of our smart metering programme and leakage reduction activities, reducing activity in AMP8 and increasing in AMP9 whilst ensuring we remain on-track to meet our statutory and long-term targets.

Smart Metering

In our revised draft WRMP, we set out a plan to achieve 75% smart meter penetration across our region by the end of AMP8, increasing to 95% by the end of AMP9. Based on customer feedback, for our PR24 business plan, AMP8 activity was scaled back to achieve 40% smart meter penetration with the programme being focused on the Hampshire Avon area, still completing our roll-out to 95% of properties by the end of AMP9. Smart meter installation numbers for our revised draft WRMP and updated PR24 plan are shown below:

Table 84 - Cumulative number of AMI smart meters installed (HH and NHH) - WRMP / PR24 comparison.

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
WRMP AMI meters installed (000s)	52.31	161.53	270.59	379.14	487.22	516.93	546.76	576.49	606.17	632.76
PR24 AMI meters installed (000s)	51.58	103.11	154.70	205.91	256.74	334.03	411.31	488.38	565.31	639.68

Leakage

Based on customer feedback and linked in part to the reduction in smart metering ambition for AMP8 and associated impact on customer supply pipe leakage (CSPL) reduction, our overall AMP8 leakage reduction programme was scaled back for our PR24 submission. Our revised draft WRMP set out a plan to reduce leakage by 7.7 Ml/d in AMP8, with 2.7 Ml/d of this being CSPL reduction associated with smart metering. Activity was scaled back for our PR24 business plan to target a 3.5 Ml/d reduction in AMP8, with 1.5 Ml/d of this being CSPL reduction

associated with smart metering. Forecast in-year leakage profiles for our revised draft WRMP and updated PR24 plan our shown below:

Table 85 – In year leakage profiles 2025-30

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
WRMP Leakage - in year (Ml/d)	62.72	61.45	59.93	58.15	56.11	55.23	54.35	53.47	52.59	51.71
PR24 Leakage - in year (Ml/d)	63.33	62.75	62.04	61.23	60.29	58.57	56.86	55.15	53.43	51.72

1.11. Business demand (PR24_NHH_WSX)

1.11.1. Introduction

The Business Demand performance commitment is designed to incentivise companies to help business (non-household) customers reduce their consumption. The benefit of reduced business demand is to improve long term water resources supply/demand balance and reduce need for water abstraction.

The performance measure is defined as the percentage reduction of three-year average business demand (consumption at non-household premises) in mega-litres per day (Ml/d) from the 2019-20 three-year average baseline. This is a new performance commitment for PR24, but historical business demand has been calculated as part of the leakage and PCC water balance calculation.

Three-year average values are calculated from annual average values for the reporting year and two preceding years expressed in Ml/d. Annual average business demand is defined as the sum of measured and unmeasured non-household consumption, including meter under registration but excluding supply pipe leakage. This is post MLE (maximum likelihood estimation) data, as defined in the leakage performance commitment.

PC units: percentage reduction

We calculate annual average and three-year average business demand in Ml/d but it is the percentage reduction of the three-year average from the 2019-20 baseline that is reported for the performance commitment.

1.11.2. Our long-term ambition

2050 target: 17.4% reduction from 2019-20 baseline

There are several regulatory targets for demand management which have been set out under the Environment Act 2021 to reduce the use of public water supply in England per head of population by 20% by 2038 from the 2019/20 reporting figures[9]. To achieve this, the business demand target of 9% reduction by March 2038, on a glidepath to 17.4% reduction by 2050 from the 2019-20 baseline has been outlined in the Environment Improvement Plan. To achieve the statutory target of 15% reduction from the 2019-20 baseline by 2050, we must report an in-year value of 69.4 Ml/d or less in 2050.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.11.3. Our performance and proposed baseline

Historical performance

*Table 86 – Historical performance and targets**

Table heading	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20

[9] Plan for Water: our integrated plan for delivering clean and plentiful water - GOV.UK (www.gov.uk); Environmental Improvement Plan (publishing.service.gov.uk); Water targets Detailed Evidence report.pdf (defra.gov.uk)

PC target	No previous targets set								
Performance from base expenditure	85.9	80.84	83.46	83.14	82.57	81.62	81.86	83.8	79.06
Step change in performance from enhanced expenditure	-	-	-	-	-	-	-	-	-
Overall performance	85.9	80.84	83.46	83.14	82.57	81.62	81.86	83.8	79.06

**Note, values prior to 2017 are estimated and have not been fully back-calculated consistent with the leakage consistency methodology.*

Business Demand is a new performance commitment for PR24 so all previous efforts to reduce non-household demand has been driven by base expenditure. We have therefore not reported a figure for business demand outside of the non-household demand figure calculated as part of the water balance used for our leakage and PCC determination.

Water demand from metered non-household properties in the Wessex Water region has steadily decreased from 117 Ml/d in 1994-95 to 82 Ml/d in 2017-18, which represents a 30% reduction in 22 years. The agricultural sector is the largest component of measured non-household demand, with other important sectors within our regions consisting of, government, the service sector, tourism, and manufacturing. The most rapid period of decline occurred between 2004-05 and 2009-10 as a result of reductions seen in the manufacturing, agriculture and to a lesser extent government sectors. Consumption in other sectors had remained relatively stable at this time.

In April 2017, Ofwat required a change to how water services are sold to non-household customers. Non-household customers are now able to choose their retailer with Wessex Water remaining the wholesaler for water services.

Until 2019-20 NHH demand had remained relatively flat in recent years but in 2019-20 and 2020-21 NHH demand decreased significantly, which is largely attributed to the Covid-19 pandemic, where a large proportion of NHH sectors had to close down due to national lockdown restrictions. In 2021-22 NHH demand has recovered but has not returned to pre-2019-20 levels.

1.11.4. Our current performance

Table 87 – PR19 target and performance. Performance reflects in year non-household consumption in Ml/d

Table heading	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	No targets currently set for Business Demand				
Performance from base expenditure	70.6	74.6	78.0	79.0	78.8
Step change in performance from enhanced expenditure	-	-	-	-	-
Overall actual performance	70.6	74.6	78.0		

Forecast overall performance				79.0	78.8

Business demand is a new performance commitment for PR24 and therefore no targets are currently set, and all reductions made in AMP7 are a result of base expenditure. We report total non-household consumption each year in the APR as it is calculated along with Leakage and PCC in accordance with the UKWIR Consistency of Reporting Performance Measures Report 17/RG.04/5 and Ofwat's final reporting guidance report for PR19[10]. Total non-household consumption is calculated using the Maximum Likelihood Estimation (MLE) to reconcile the difference between the components of the water balance.

Business demand has seen a steady increase in recent years following a significant drop in 2020-21. The significant reduction in demand in 2020-21 can be attributed to the Covid-19 pandemic and its lockdowns causing businesses to temporarily close or change working patterns. The steady increase over the last two years reflects the return of workers and customers to businesses, and we forecast that this level will plateau over the next couple of years before reducing again as we enter AMP9.

Although business demand is not yet a performance commitment, our demand management strategy has always included a focus on NHH in order to reduce our overall company demand. Following delays in delivery as a result of Covid, our non-household schools programme was launched for the first time in August 2022, also with our partners Groundwork. So far, we have saved a total of 438,181 litres of water over 90 visits. We're saving an average of 4,959 litres per visit. Due to the small sample size, outliers may have skewed this average. The savings through the months are variable and it has been difficult to find a relationship between the savings and the data we collect during the visit. It therefore is possibly down to extraneous variables. For example, schools may or may not have a caretaker so the quality of upkeep will vary significantly; different schools have limited funding available to them and so building maintenance may be variable, buildings will be of different ages and therefore more or less susceptible to leaks. Lastly, plumbers have anecdotally suggested that schools in certain areas show a preference for using parts more prone to serious leaks.

For the remainder of the AMP, we will continue with promotion of our non-household water efficiency audits to school in partnership with retailers to ensure business demand does not rise to the levels seen before the pandemic.

Proposed PR24 baseline

Proposed baseline: 78.8 Ml/d.

Rationale: The PR24 proposed baseline is the total business demand value forecasted for Year 5 of AMP7 (2024-25). This is a 3.5% reduction from the 2019-20 baseline figure of 81.6 Ml/d. We use the AMP7 Y5 figure as the base expenditure baseline for AMP8 as this reflects the business demand level that we will maintain without any enhancement expenditure applied in AMP8.

Improvement from the baseline is proposed as part of the business plan version of the WRMP24 demand management strategy which has been derived to achieve the statutory non-household demand reduction target of a 15% reduction from the 2019-20 baseline by 2050.

[10] Outcomes definitions - PR19 - Ofwat

1.11.5. Proposed Performance Commitment Level

Performance commitment level

We propose the following performance commitment level for AMP8:

Table 88 – Proposed performance 2025-30

Performance in AMP8	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure (% reduction)	3.5%	3.5%	3.5%	3.5%	3.5%
Step change in performance from enhanced expenditure (% reduction)	0.3%	1.3%	2.8%	4.5%	6.1%
Proposed PC level (% reduction)	3.8%	4.8%	6.3%	8.0%	9.6%

The forecast total business consumption figures for the remainder of AMP7 and AMP8 are taken from table CW5 – the sum of lines CW5.33 and CW5.34. These lines were derived by taking the USPL away from the non-household water delivered values in the business plan version of WRMP24 Planning Table 3c: DYAA – Final Plan and converted to the normal year annual average scenario using the peak factor in the WRMP24 supply-demand balance model.

How we will deliver this step change

The following interventions are proposed to deliver the above step change in performance:

Table 89 - Interventions to deliver reduction in business demand.

Intervention	Capex cost (£m)	Opex cost (£m)	TOTEX cost (£m)	Expected Improvement in performance (% reduction)	% Impact on performance
Smart metering for NHH	4.3	0.3	4.6	1.7%	30%
Water efficiency visits for NHH	0	1.04	1.04	4.4%	70%

Rationale:
Our smart metering roll out will include non-household properties and we commit to working with MOSL, retailers and business users to ensure the data captured by smart meters is appropriately available within the market to improve billing accuracy and stimulate demand reductions through the identification of continuous flows which may be indicative of wastage, plumbing losses and external leaks.

Our preferred plan for non-household demand management for 2025-30 will facilitate over 160 visits a year to non-households to fix leaks and reduce water wastage. We anticipate continuing to work with schools and other not-for profit or community focussed organisations. This programme will be supported by the smart metering roll out that

will provide high resolution usage data to identify continuous flows – which can be investigated for leaks/wastage – and therefore enhance targeting.

Further information can be found in WSX15 annex 2.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 17.4% reduction in 2050. This would result in an in-year percentage reduction of 17.5% which exceeds the statutory target of achieving a 15% reduction from the 2019-20 baseline by 2050. Our profile to achieve this in the context of our 2025-30 proposed PC level with enhancement expenditure in AMP9 and beyond is shown in Figure 15.

Figure 15 – Proposed profile of business demand reduction to 2050

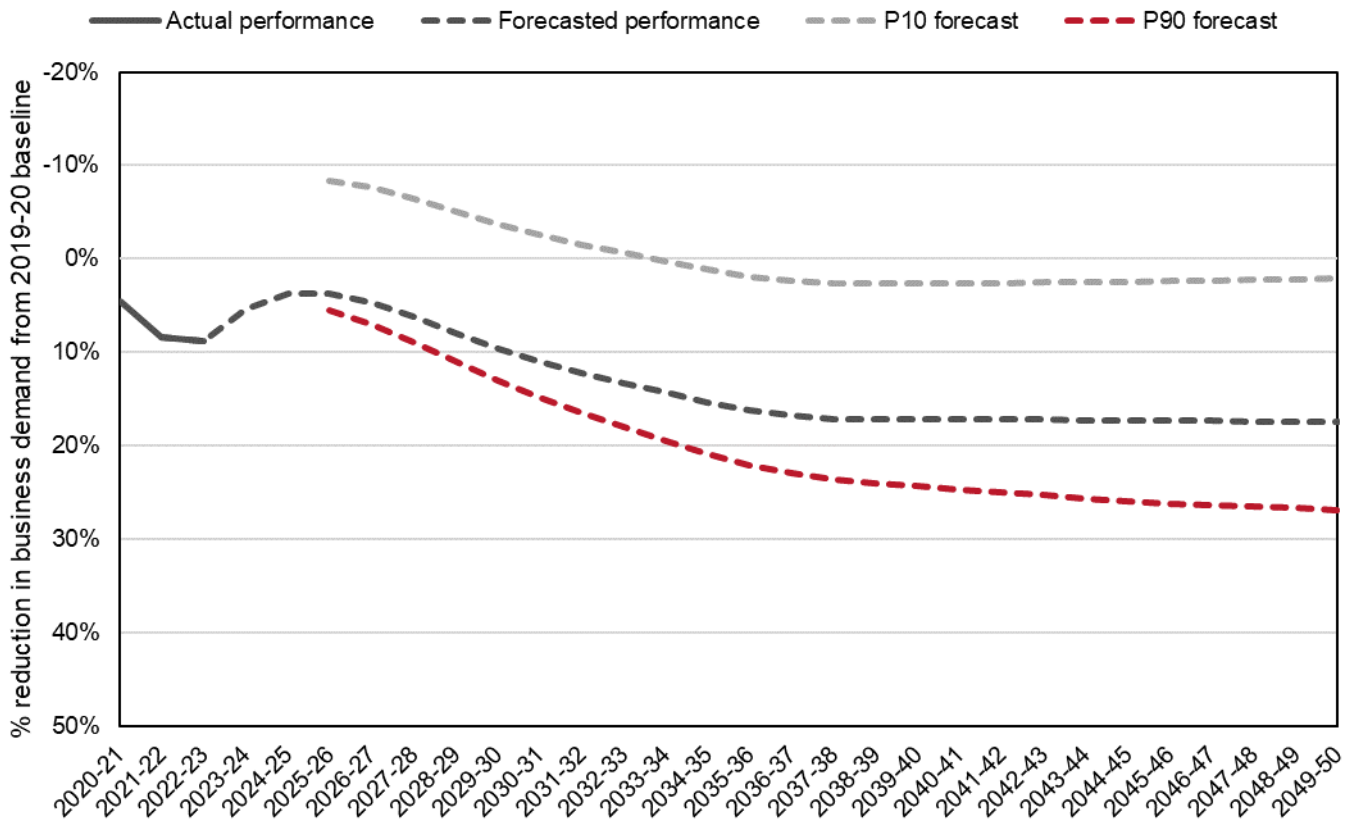


Table 90 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	4%	9.6%	15.4%	17.2%	17.3%	17.4%

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 91 – Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	10.8%	11.5%	11.7%	11.7%	11.7%
Step change in performance from enhanced expenditure	4.8%	3.2%	1.6%	2.6%	3.7%
Total performance (% reduction)	11.0%	12.2%	13.3%	14.3%	15.4%

For AMP9, as per the table guidance, we must exclude any reductions to the household consumption forecast that are a result of enhancement expenditure. Therefore, in year total business consumption from 2030-31 onwards reflects the consumption once all impacts from AMP8 enhancement expenditure are applied. We forecast that base expenditure in AMP9 will maintain the Y5 AMP8 total business consumption figure. The AMP9 baseline figure is therefore set at 72.1 Ml/d which is the Y5 AMP8 in year figure adjusted to reflect residual AMP8 enhancement expenditure impacts in Y1 of AMP9. The additional increases in performance in years 2 and 3 are a result of the use of the three-year average in the performance commitment.

1.11.6. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.364m outperformance and -£0.364m underperformance payment

Proposed standard ODI rate: £0.364m outperformance and -£0.364m underperformance payment

1.11.7. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 92 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	-8.4%	-7.7%	-6.5%	-5.1%	-3.7%

P10 rationale: this is the sum of the average of the DYAA and the NYAA high non-household consumption scenarios and a 1Ml/d conservative estimate for large new users in the region, minus the difference between the baseline and final plan three-year average. This results in a three-year average Business demand value of 84.6 Ml/d, a percentage increase of 3.7%, at the end of AMP8.

Table 93 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	5.5%	7.0%	8.9%	11.0%	13.1%

P90 rationale: his is the NYAA low scenario non-household consumption minus the difference between the baseline and final plan three-year average. This results in a three-year average Business demand value of 70.9 Ml/d, a percentage reduction of 13.1% at the end of AMP8.

Please note that the above values are in the same units as the performance commitment (percentage reduction of three-year average business demand in Ml/day).

1.11.8. Alignment with WRMP24

Our overall demand strategy, as derived through the Water Resources Management Plan process, will ensure we meet the requirements for licence reductions that are required to protect the environment, and are on a glidepath to achieving 2050 targets for PCC, leakage, business demand, and the Distribution Input target in 2037-38.

Customer feedback suggested our proposals went too far for customer preference on smart metering and leakage reduction. Wessex Water received a guidance letter from the EA on 5 July (Information Letter: EA/17/20023) asking us to consider phasing activities from PR24 into future price review periods to ensure our PR24 programme as a whole is deliverable, financeable and affordable for customers. This provided an opportunity to reflect customer preference in our business plan. As this letter was received just prior to submission of our revised draft WRMP, there wasn't time to update our WRMP based on this guidance, therefore there are some material changes in savings and costs presented in our revised draft WRMP and PR24 submissions.

The changes associated with this guidance relate to our demand management strategy and in particular a change to phasing of our smart metering programme and leakage reduction activities, reducing activity in AMP8 and increasing in AMP9 whilst ensuring we remain on-track to meet our statutory and long-term targets.

Smart Metering

In our revised draft WRMP, we set out a plan to achieve 75% smart meter penetration across our region by the end of AMP8, increasing to 95% by the end of AMP9. Based on customer feedback, for our PR24 business plan, AMP8 activity was scaled back to achieve 40% smart meter penetration with the programme being focused on the Hampshire Avon area, still completing our roll-out to 95% of properties by the end of AMP9. Smart meter installation numbers for our revised draft WRMP and updated PR24 plan are shown below:

Table 94 - Cumulative number of AMI smart meters installed (HH and NHH) - WRMP / PR24 comparison.

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
WRMP AMI meters installed (000s)	52.31	161.53	270.59	379.14	487.22	516.93	546.76	576.49	606.17	632.76
PR24 AMI meters installed (000s)	51.58	103.11	154.70	205.91	256.74	334.03	411.31	488.38	565.31	639.68

Leakage

Based on customer feedback and linked in part to the reduction in smart metering ambition for AMP8 and associated impact on customer supply pipe leakage (CSPL) reduction, our overall AMP8 leakage reduction

programme was scaled back for our PR24 submission. Our revised draft WRMP set out a plan to reduce leakage by 7.7 Ml/d in AMP8, with 2.7 Ml/d of this being CSPL reduction associated with smart metering. Activity was scaled back for our PR24 business plan to target a 3.5 Ml/d reduction in AMP8, with 1.5 Ml/d of this being CSPL reduction associated with smart metering. Forecast in-year leakage profiles for our revised draft WRMP and updated PR24 plan our shown below:

Table 95 –In year leakage profiles 2025-30

	2025-26	2026-27	2027-28	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35
WRMP Leakage - in year (Ml/d)	62.72	61.45	59.93	58.15	56.11	55.23	54.35	53.47	52.59	51.71
PR24 Leakage - in year (Ml/d)	63.33	62.75	62.04	61.23	60.29	58.57	56.86	55.15	53.43	51.72

1.12. Total pollution incidents (PR24_POL_WSX)

1.12.1. Introduction

‘Total pollution incidents’ is an existing common performance commitment from AMP7.

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

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

Total pollution incidents is defined in the total pollution incidents metric set out in the reporting guidance from the Environment Agency's water and sewerage company Environmental Performance Assessment (EPA) methodology version 9 May 2021 as published. The definition being: The total number of pollution incidents (categories 1 to 3) in a calendar year emanating from a discharge or escape of a contaminant from a water company sewerage asset affecting the water environment.

There have been changes to the way the definition has been applied, e.g. from December 2019 the guidance from the EA at national level has been correctly interpreted locally such that pollutions resulting from power outages are now included.

PC units: Total number of pollution incidents (categories 1 to 3) per 10,000km of sewerage

The length of sewerage to be used by each water company is defined in the EPA methodology.

1.12.2. Our long-term ambition

2050 target: Zero

At the heart of our Strategic Direction Statement (SDS) are eight outcomes, all co-created with stakeholders focusing on long-term ambition.

Excellent river and coastal water quality is one of these outcomes, and we have set ourselves the stretching aspirational target of zero pollutions by the year 2050. Both our customers and the wider public see this as a priority.

In 2017, the EA set out performance expectations for 2020 to 2025 in the Water Industry Strategic Environmental Requirements (WISER). Relevant extracts from the WISER are reproduced in Appendix 3 of Environmental Performance Assessment (EPA) methodology version 9. This includes an expectation of total pollutions (category 1 to 3) to trend to 66 incidents by 2025 (from 80 in 2021) as summarised in Table 96.

Table 96 – Thresholds for Total Pollutions as part of the EPA methodology.

Frequency

Annually, based on a calendar year.

Thresholds

The red, amber, green (RAG) threshold 5 year glide path (per 10,000km of sewer):

	Green threshold	Amber threshold	Red threshold
Year 1 (2021 data)	<=23	>23 & <42	>=42
Year 2 (2022 data)	<=22	>22 & <40	>=40
Year 3 (2023 data)	<=21	>21 & <38	>=38
Year 4 (2024 data)	<=20	>20 & <37	>=37
Year 5 (2025 data)	<=19	>19 & <35	>=35

The WISER Published 11 May 2022 describes the statutory and non-statutory expectations of water companies for price review 2024 (PR24) and expected practice. For total pollutions, the expectation is that companies achieve at least a 30% reduction of category 1 to 3 pollutions incidents by 2040 on current 2025 targets; equivalent to 46 incidents for Wessex Water. There may be some variation on our expectation depending on company performance during the current asset management plan period (2020 to 2025).

No definite targets have been set by the E.A, however, these expectations are consistent with our long-term ambition.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.12.3. Our performance and proposed baseline

Historical performance

Table 97 – Historical performance and targets

Table heading	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	No AMP5 or AMP6 target; AMP6 targeted **reward deadband** at less than 0 serious and 67 category 3 – rate of 19.17 (based on 34944km)								
Performance from base expenditure	17.36	18.85	26.04	23.04	25.44	21.55	23.64	24.54	22.75
Step change in performance from enhanced expenditure	-	-	-	-	-	-	-	-	-

Overall performance	17.36 (58 incidents)	18.85 (63 incidents)	26.04 (87 incidents)	23.04 (77 incidents)	25.44 (85 incidents)	21.55 (72 incidents)	23.64 (79 incidents)	24.54 (82 incidents)	22.75 (76 incidents)

We have reduced pollution numbers by more than half in the past 20 years, see Figure 16. However, a change in reporting process in 2012 led to an increase in recorded numbers with a plateau in recent years to about 80 incidents/year. We have developed our Pollution incident reduction plan (PIRP) to drive further improvements and seek to achieve the tightening annual performance targets in place for AMP7.

Figure 16 – Total incident performance since 2000.

Our current performance

Table 98 – PR19 target and performance

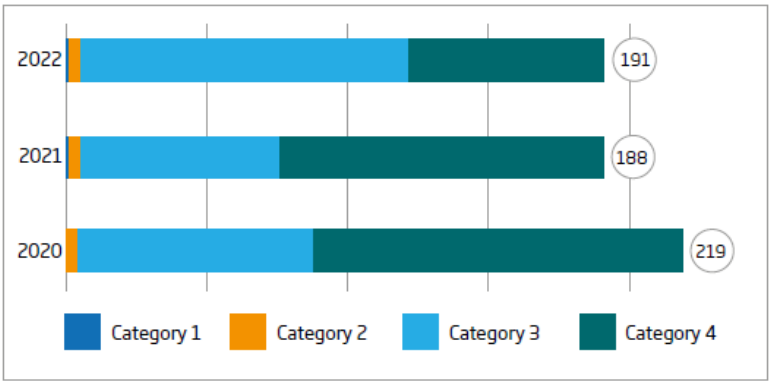
	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	24.51 (82 incidents)	23.74 (83 incidents)	23.00 (80 incidents)	22.40 (78 incidents)	19.50 (68 incidents)
Performance from base expenditure	26.04 (87 incidents)	20.60 (72 incidents)	31.48 (110 incidents)	31.48 (110 incidents)	25.76 (90 incidents)
Step change in performance from enhanced expenditure	-	-	-	-	-
Overall actual performance	26.04 (87 incidents)	20.60 (72 incidents)	31.48 (110 incidents)		
Forecast overall performance				31.48 (110 incidents)	25.76 (90 incidents)

The five-year average before reported performance for 2022-23 was 79 total pollution incidents, including 2022-23 performance of 110 brings the longer-term average to 84 (six-year average).

Two main factors have influenced our performance in 2022-23: drought and EDM spill history analysis.

The drought conditions experienced in our region during the summer of 2022, meant that even small discharges to the environment had a more pronounced effect, this is further demonstrated when examining the total number of pollutions including category 4 incidents for 2021-22 and 2022-23 (see Figure 17). Water resources in the region were declared in drought conditions by the Environment Agency (EA).

Figure 17 – Pollutions by category 2020-22



The similar number of incidents were recorded but more being characterised as category 3 in 2022-23 than in 2021-22.

Improved use of data gathered from EDM allowed for analysis and identification of historic spill events, which were then reported to the EA. These incidents defaulted to a category 3 under the Common Incident Classification Scheme (CICS) but given their historic nature it was not possible to carry out on-site investigations to confirm details or classification.

Between them the drought and historic EDM analysis account for 33 reported incidents in 2022-23; taking the reported figure from 110 to 77. If 77 was used for the performance in 2022-23, this would bring the longer-term average to 78.

The AMP7 target performance, funded from base, was 24.51 (equivalent to 86 incidents) in year 1 to 19.50 (68 incidents) at the end of the AMP.

Pollution Incident Reduction Plans

Our aspiration is to cause no pollution incidents and the delivery of our PIRP is our mechanism for achieving this.

The four main delivery themes for the PIRP are:

- People and process
- Assets and maintenance
- Customers and stakeholders
- Data and analysis

The first Pollution Incident Reduction Plan 2020 was written in 2020 and covered our 2019 performance. This PIRP demonstrated our existing and planned approach to ensure that we have the right resources, skills and processes required to reduce the number of pollution incidents. The PIRP highlighted over 20 activities that we were undertaking under four delivery themes to help reduce the total number of pollutions and reduce the number of pollutions caused by blockages and sewer misuse.

PIRP 2020-2021

2020 was a very challenging year in several ways – from the impact of Covid-19 on working arrangements and our ability to interact with customers, to dealing with the wettest year since 2014. Despite the additional focus and greater levels of investment in 2020 we were unable to deliver the improvements that were expected however we achieved our overall pollution performance target. Root cause analysis showed a decrease in blockages compared to previous years, but an increase in pollutions caused by rising main bursts and ingress, both of which can be influenced by the weather, but also attributed to asset condition.

Covid-19 allowed us to review our strategy and refocus our programme to put more of a focus on our sewer misuse campaigns and rising main burst detection and prevention.

PIRP 2021-2022

For 2021, we achieved our overall pollution performance commitments and achieved our environmental performance assessment target (72 incidents against target of 87). As a result of our performance improving, we were also below our five-year average. Root Cause analysis for 2021 showed that sewer blockages continued to be the dominant cause of pollution incidents and these blockages were predominately caused by wet wipes. However, there was an overall decrease in the number of blockages compared to previous years.

There was also a decrease in the number of pollutions caused by rising main bursts, which could be attributed to our increased monitoring capabilities and pump performance analysis.

Our 2021 review showed that our sewer network was an area where we could make the most gains, so we accelerated activities such as intelligent sewer networks, customer and community engagement, FOG management and rising main burst detection to maximise the benefits we saw in 2021.

However, we also did not neglect our performance at WRCs, and began initiatives to more proactively clean our inlet works and in embedding incident reviews and learnings across our catchments.

PIRP 2022-23

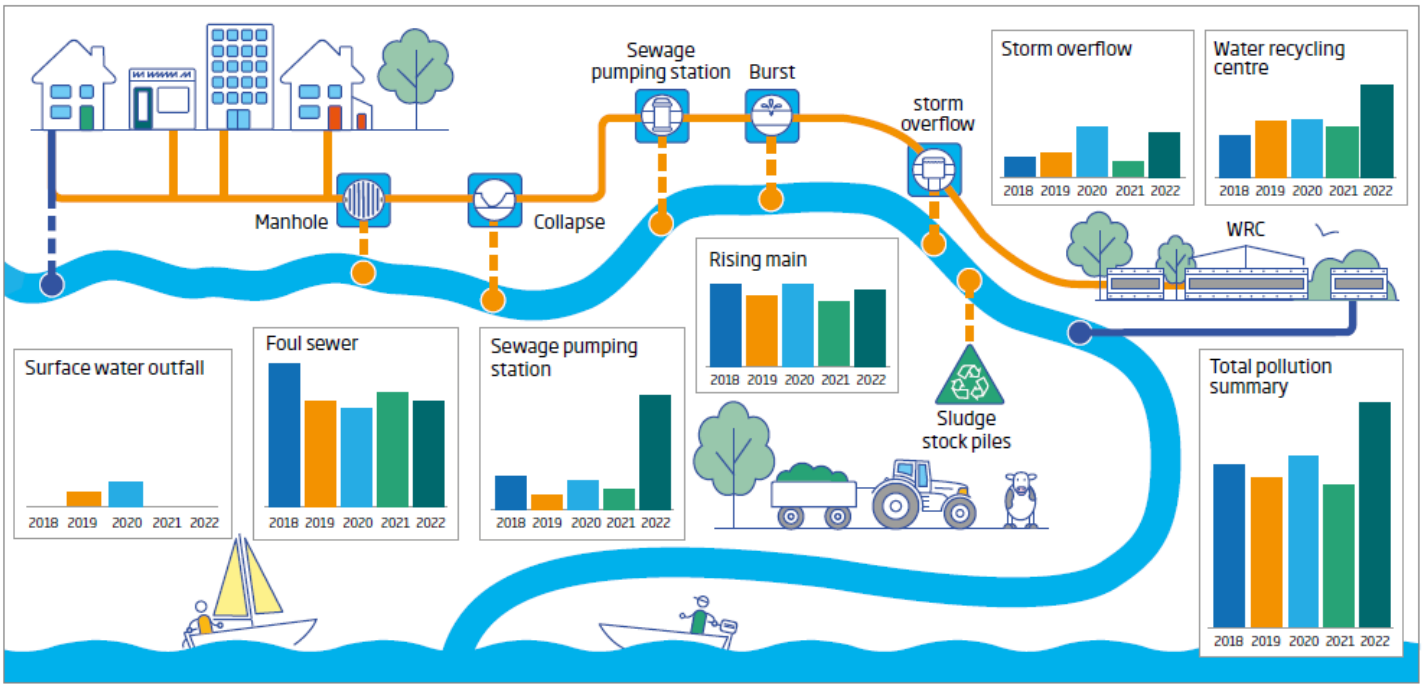
For 2022 we did not achieve our total pollution target and we exceeded our serious pollution target. The overall number of cat 1-4 is similar to those in 2021, however there has been a shift in the proportion of Cat 4 up to Cat 3s. This has been attributed to two factors; the first was droughts in the summer of 2022 exasperating very small spillages resulting in an impact being reported. The second was the improved use of data gathered from EDM, allowing for analysis and identification of historic spills which were reported to the EA. These spills defaulted to Cat 3s.

In 2022 there was a step change in the number of pollutions reported at both WRCs and SPSs. WRC incidents increased from an average of 22 to 40, and SPS incidents from an average of 5 to 21 incidents. Foul sewer pollutions remained similar to previous years. Unlike in previous years where we have seen a decrease in blockages, we saw a notable increase. This has been attributed to the prolonged drought followed by very heavy rainfall.

We will continue to focus and evolve our root cause analysis and lessons learnt from incidents to enhance our ability to deliver further benefits to WRCs and SPSs.

Figure 18 provides a breakdown of the number of pollution incidents we have experienced since 2018 at each stage of our wastewater process over the past five years.

Figure 18 – Total pollutions by wastewater stage 2018-2022



Our forecast for AMP7 Year 4 is 31.48 (110 incidents) and for Year 5 is 25.76 (90 incidents).

The projected performance for Year 4 is higher than our historical average, 22.4 (78 incidents), is because of extreme rainfall in the 1st quarter of 2023. With January being 132% and March 235% of the long-term average and March being the wettest March for over 40 years. We also continue to monitor the impact of an increasing number of EDM, to understand new data and update processes to attempt to receive alerts pre-discharge to prevent incidents.

The following insert shows our current performance in the context of the wider industry.

Comparative Performance
Top 3 green, bottom 3 red

	Year	Anglian	North-umbrian	Severn Trent	Southern	South West	Thames	United Utilities	Dwr Cymru	Wessex	Yorkshire	Average	Wessex Rank of 10
Pollution incidents (per 10,000km of sewers)	2022/23	33.36	19.98	20.64	90.11	61.93	30.37	16.29	24.55	31.48	22.39	35	6
	2021/22	34	23	22	94	87	25	18	23	21	27	37	2
	2020/21	28	15	21	102	131	27	18	21	25	24	41	6

Proposed PR24 baseline

Proposed baseline: 22.26 (equivalent to 78 incidents)

Rationale: The proposed PR24 baseline isn't the end of AMP7 performance target of 19.50 (68 incidents). The proposed baseline is a stretching baseline because of the changes in how reporting guidelines are being followed and the impact of increase data being provided by EDM. The baseline reflects a calculated five year average, taking account of the recent inclusion of power outages within the target, removing the impact of the drought conditions and the historic EDM analysis undertaken in 2022/23.

In the PR19 process, a cost adjustment claim (PR19 CAC, £15.6m) was submitted to support the step-change in performance the performance targets requested, unfortunately the cost adjustment claim was rejected.

There have been further upward pressures on the total pollution baseline due to changes in interpretation of reporting guidelines by the EA, especially in relation to incidents resulting from power outages. Prior to AMP7, power outages causing pollution incidents would have been classed as third-party issue and not included in reported pollution incident totals. See Table 99 for the historical number of pollutions giving an indication of the upward pressure on performance against the original PR19 PC targets.

We have not been funded to achieve the target given these upward pressures. Despite spending all of the maintenance we have been given, significant penalties have been incurred (£1.7m) and are forecast to be incurred (£4.1m) in the remaining two years of this AMP period for not meeting PC performance levels.

Table 99 – Pollutions attributable to power outage

	2019-20	2020-21	2021-22	2022-23	Average	2023-24*
Power failure pollutions	9	3	2	4	4.5	5

Note: * year to date figure.

The following case study provides an example of the kind of situation where power outage will now impact our performance.

Case Study – Mains power outage at North Curry Stoke Rd SPS

Prior to 2019, mains power outages were attributed to the Distribution Network Operator (DNO).

In December 2019, the EA provided clarification that discharges in the event of a mains power outage are in part the responsibility of the WaSC and therefore should be attributed to WaSC and not the DNO.

In an incident that is caused by a power outage the water company operators are still a 'cause' of such incidents, therefore the responsibility for such incidents should be attributed to them in our NIRS records. The defence in the permit would stand in any criminal proceedings.

Site: **North Curry Stoke Rd SPS (15465)** Date: **June 2023**

Water impact: **Category 3**

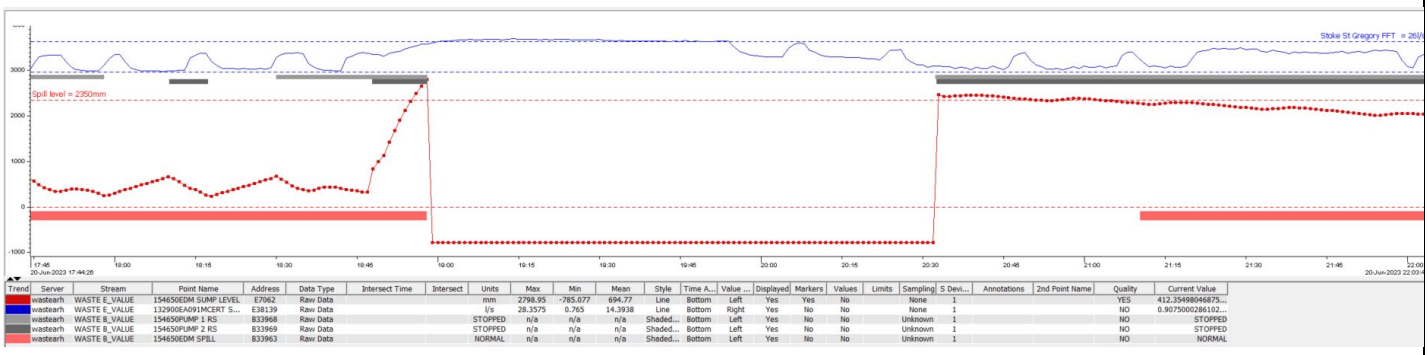
On 20th June 2023, the sump level at North Curry SPS began to rise from 18:45 in response to rainfall. Telemetry data shows that the sump filled and began to spill to the environment from 18:55.

The site suffered an unplanned mains power outage at 19:00. A mains failed alarm was received into control room and passed to an SPS operator at 19:50. An operator attended site and found that the power outage had caused the Miniature Circuit Breaker (MCB) within the control panel to trip, requiring a reset.

The reset was completed at 20:30 and mains power returned to site. SPS pumps and telemetry data was unavailable for the duration of the power outage. However, as shown by the trend below, the sump level was above the spill level of 2350mm both prior to and after the power outage indicating that the spill continued for the duration without power.

The spill to the environment stopped at 21:10 once the site had caught up with network flows.

Figure 1. Telemetry trend showing the period of the power outage and corresponding overflow spill. The SPS sump and spill level are shown in red, the blue trend at the top shows the downstream WRC MCERTS flow.



The downstream WRC MCERTS flow trend shows that flows began to drop off from 20:00, indicating the end of the storm event. Had the power outage not occurred, a similar trend would have been observed at the SPS. Whilst a storm spill would have occurred at the SPS and in response to wet weather, the duration of that spill was extended by the power outage and the MCB which subsequently tripped.

The incident has been assigned a category 3 impact to water by the Environment Agency, this is due to high suspended solids results from samples collected at the time (84mg/l at POI and 77mg/l downstream).

Case Study: Mains power outage – North Curry Stoke Road SPS

1.12.4. Proposed Performance Commitment Level

Performance commitment level

Considering our performance from base is expected to only maintain performance against an upward pressure and that our proposed additional enhancement expenditure will deliver continual improvement to match the priority that our customers continue to place in minimising total pollutions, we propose the following performance commitment level:

Table 100 – Propose performance commitment level

Table heading	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	22.32 (78)	22.23 (78)	22.23 (78)	22.23 (78)	22.23 (78)
Step change in performance from enhanced expenditure	(-4)	(-7)	(-12)	(-17)	(-23)
Proposed PC level	21.18 (74)	20.23 (71)	18.81 (66)	17.67 (61)	15.67 (55)

The Strategic Direction Statement 2022 states the Company ambition to eliminate pollutions from our network by 2050. For the revised baseline of 78 incidents for AMP8 as described in 1.12.3. the proposed 2029-30 target of 55 meets the EA WISER target proposal of at least a 30% reduction of all pollution incidents (category 1 to 3) by 2030.

How we will deliver this step change

The following interventions are proposed to deliver the above step change in performance.

Table 101 – Proposed interventions

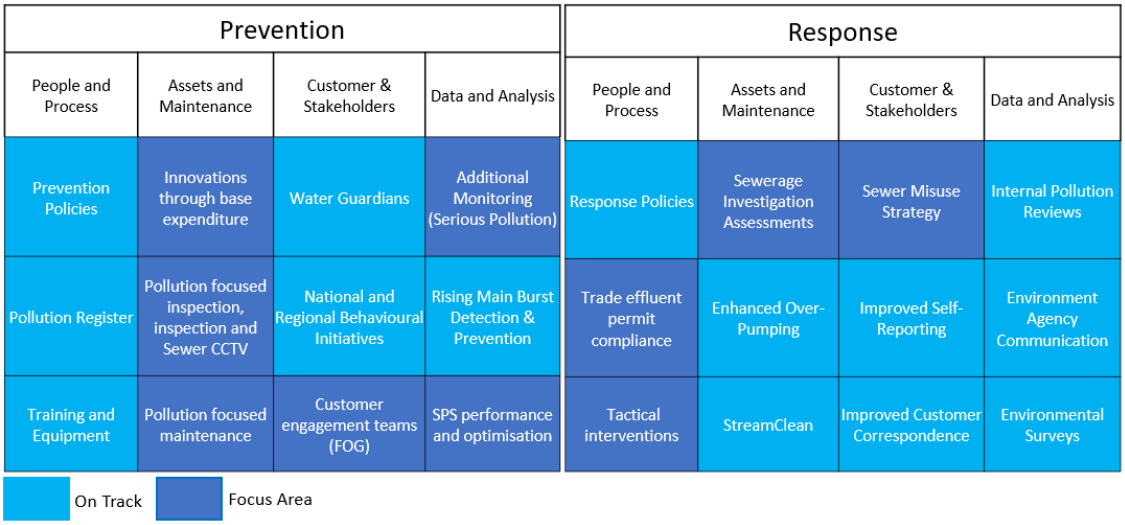
Intervention	Capex cost (£)	Opex cost (£)	TOTEX cost (£)	Expected Improvement in performance	% Impact on performance*
DWMP – Total Pollutions	32.53	11.30	43.83	-13.3 total pollution incidents/annum	-17.1%
Smart Networks – 12,000 in-sewer monitors	30.00	11.70	41.70	-5.7 total pollution incidents/annum	-7.3%

*Impact on performance calculated assuming 78 incidents as baseline

A key principle of our PIRP has always been to use data to inform our actions. When the PIRP was originally published the greatest focus was on foul sewers as these assets had the highest number of pollution incidents. Our annual review allows us to develop and focus our plan based on our annual performance.

Although only 24 of our ongoing activities are highlighted in the table below, we now have more than 40 ongoing preventative and response activities which we continue to develop and evolve over time to help us achieve our pollution targets. These are focused in two broad areas of prevention and response with delivery through the four themes as summarised in Figure 19.

Figure 19 – Summary of our pollution reduction activities



Activities were chosen on a cost-beneficial basis, on an expenditure per pollutions incidents prevented, below are key initiatives that are being focused on as part of our AMP8 PIRP.

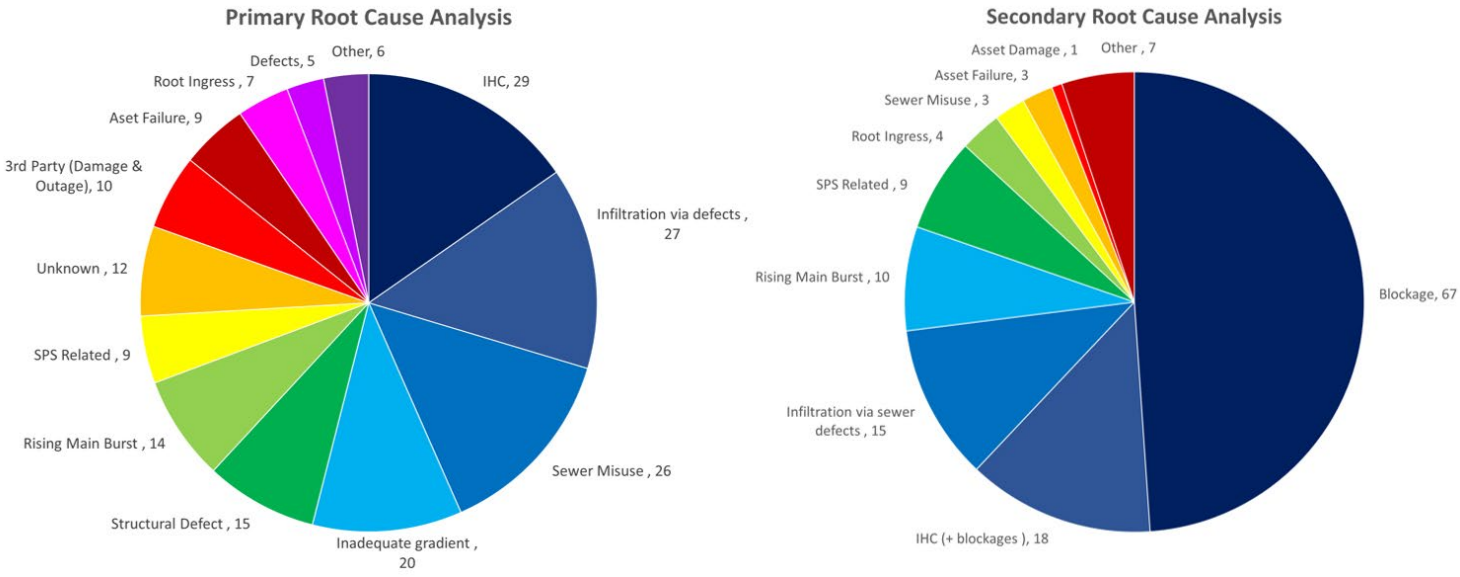
1. Sewerage investigation assessment (SIA)

Sewerage incident assessments (SIAs) were developed to help identify the root cause of a pollution incident, as well as identifying proactive interventions that can be put in place to prevent future pollutions. Since the SIA process began in 2019, we have undertaken over 500 assessments, which have been triggered by either an urgent pollution or hotspot analysis. SIAs are reviewed and actioned at regional meetings held with internal stakeholders, including operational staff to discuss interventions such as maintenance frequency, asset improvements or further CCTV inspections.

A key lesson learnt by undertaking SIAs, is that having all available information in one document that summarises current and historical issues is vital. Duplication of effort throughout the business is avoided and the focus is to contribute to one report. This has had the added benefit of allowing timely and accurate updates to local EA officers and other relevant parties.

Figure 20 shows an analysis of pollution root causes, both primary and secondary, identified through the SIAs show that the main causes of pollutions are blockages, inadequate hydraulic capacity, and infiltration.

Figure 20 – Analysis of pollution root causes



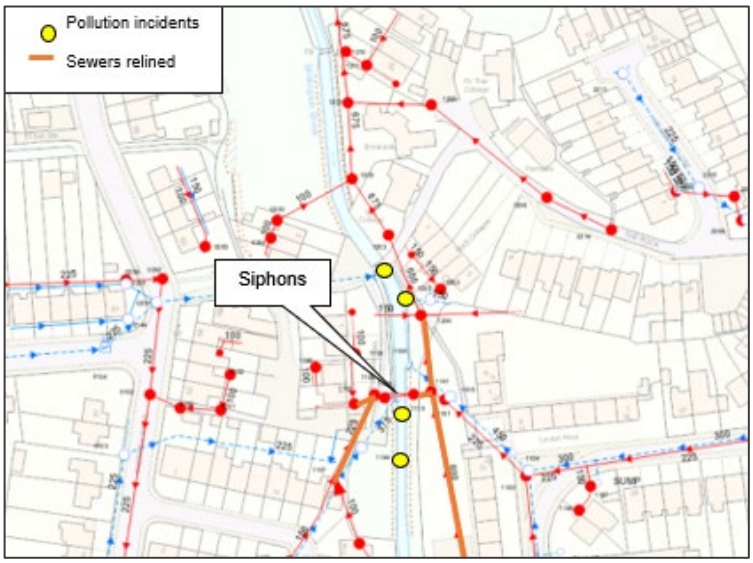
A wide mix of actions are identified, 1385 to date, with 722 actioned.

The actions include raising sewerage CCTV, undertaken customer misuse engagement, added sewerage lengths to routine inspection and maintenance, requesting sewage pumping station surveys, requesting various types of repairs to sewerage assets etc.

The following case study is an example of where the SIA process has identified an area of concern and a cross business approach has been used to help mitigate against future pollution incidents.

Sewerage Investigations Assessment – Brislington Broomhill

A Sewerage Investigation Assessment (SIA) was undertaken for Brislington Broom Hill, to identify the root cause of historical pollution incidents at the siphons, and to highlight any proactive interventions which could be implemented to prevent future pollution incidents occurring.



During the assessment the SIA recommended a follow up CCTV survey of the siphon and adjacent sewers. The survey revealed a blockage in the siphon which was removed at the time, as well as root ingress and several structural defects (fractures and holes) which could not be removed due to restricted access and the poor condition of the sewer.

Based on the CCTV survey the SIA report made several recommendations to our Operational team, which included reviewing access arrangements and procedures for future visits, increasing routine maintenance from every 6 months to every 3 months and undertaking a rehabilitation scheme to address the structural defects.

The rehabilitation work began in 2020 and involved installing a combination of no-dig full length and patch liners in 5 lengths of varying sized foul sewers. Additional works required for the scheme involved the construction of a new foul manhole downstream of the siphons, to control the flow during the rehabilitation works and improve access for future routine maintenance.

Case Study: Sewerage Investigations Assessment – Brislington Broomhill

2. Pollution focused inspection and rehabilitation

We have a significant amount of data about our sewerage network. The sewer risk model combines all the available data (environmental impact, asset condition, historical incidents, condition surveys, proximity to pollution hotspots, food outlet density, etc.) into a single place to enable easy analysis. Within the sewer risk model there are four main risk categories:

- **Structural risk** - primarily driven by asset condition
- **Service risk** - primarily driven by the customer service impact of escape of sewage
- **Capacity risk** - primarily driven by hydraulic capacity information
- **Pollution risk** - primarily driven by the environmental impact of an escape of sewage

The model provides risk values at individual pipe level for each of the categories, as well as producing an overall risk score. This is an objective way of identifying the most vulnerable parts of our sewer network, efficiently and with

relative ease. The flexibility of the model means that, depending on the outcome sought, weightings for risk calculations can be easily varied. Examples of the various outcomes that the model can be used for are:

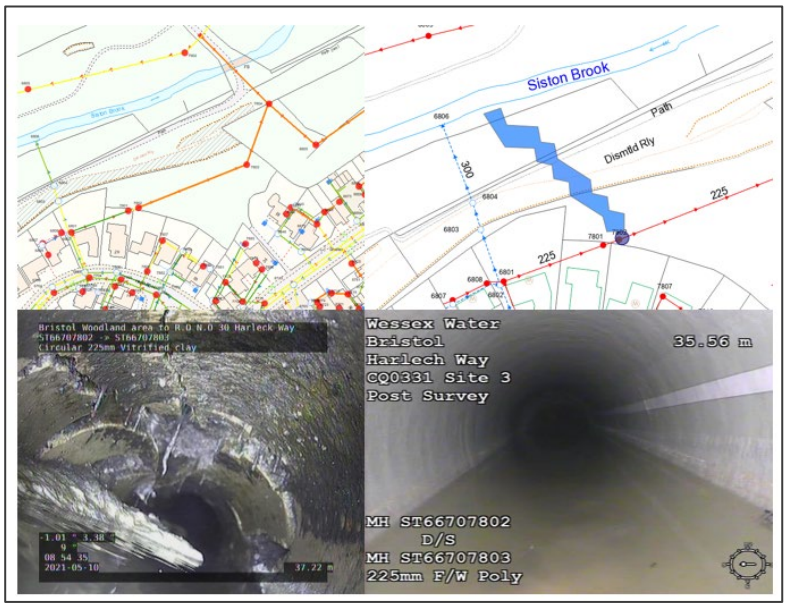
- **CCTV survey inspection** - the model results are directly used to identify sewer lengths to be inspected in the short and long term
- **Pollution prevention** - reduction of pollutions from the sewer network through targeted proactive inspections
- **Flooding prevention** - model identifies locations repeated customer incidents like flooding due to 'other causes', blockages, restricted toilet use etc. to focus the inspections and to influence maintenance activities.
- **Drainage and Wastewater Management Plans** – provides overall performance indicator on a catchment level for future strategic investment policies
- **Sewer rehabilitation** – risk results are used to calculate a prioritisation score.

The following case study provides an example of this process.

Pollution Prevention CCTV & Rehab - Case Study

The pollution risk scores in the Sewer Risk Model are used to identify sewer lengths to be inspected in the short and long term. The 2021 version of the Risk Model identified lengths to the rear of houses on Harlech Way, Bristol, as being a medium – high risk.

When our CCTV team attended the site, they identified significant fractures and cracks in the length, which was on its way to full collapse. Rolling Ball analysis tells us that if an escape of sewerage were to occur here, due to collapse or blockage from the structural defects, the resulting spill would run directly into the Siston Brook. In addition to this the immediate area is a County Wildlife Site (which is a conservation designation in the United Kingdom, which despite conferring no statutory protection onto a site, does affirm a site's importance and value for wildlife in its county context).



The rehab team proposed to CIPP line the sewer, as diversion of the sewer by excavation would require considerable temporary works and the impact in doing so would be profound on the public green space, not to mention costs involved in doing so.

By lining this sewer length, a potential Category 3+ pollution was averted (potential pollution impact based on previous incidents on this length of the Siston Brook from Escapes of Sewerage).

Case Study: Pollution Prevention CCTV & Rehab – Harlech Way, Bristol

3. Pollution Focused Maintenance

Pollution focused maintenance is primarily focused on two main asset types: sewerage and WRCs.

In 2020/21 following the spike in pollution numbers, a focused additional programme progressed the cleaning of 204 of 406 WRC inlets, and a notable improvement was seen with no pollution incidents being attributed to inlet blockages. This enhanced programme is now included in our future cyclical maintenance programmes.

The proposed additional JetVac for WRCs will allow us to carry out the proposed cyclical JetVac cleaning of inlet and pipework within WRCs to prevent potential blockages and focus on a catchment approach to cleaning within the sewerage network and down through the systems to the inlet. There will be a rolling programme based on the volume of material collected - sites will have 3 monthly, 6 monthly or annual cleaning.

The majority of the JetVac maintenance has been identified through issues that have impacted customers and/or the environment, previous identified hotspots for blockages, backing-up, pollution and flooding events. The focus for our maintenance is around these hotspots to prevent the deterioration in performance of the sewer from misuse or to keep assets free flowing such as syphons or hydrobrakes that can unintentionally catch misuse items or material such as FOG.

There will also be an increased demand in the amount of cleaning required as a result of the introduction of in-sewer monitoring will lead to earlier identification of issues.

4. Customer engagement teams

4.1 Commercial Engagement Officers (CEOs)

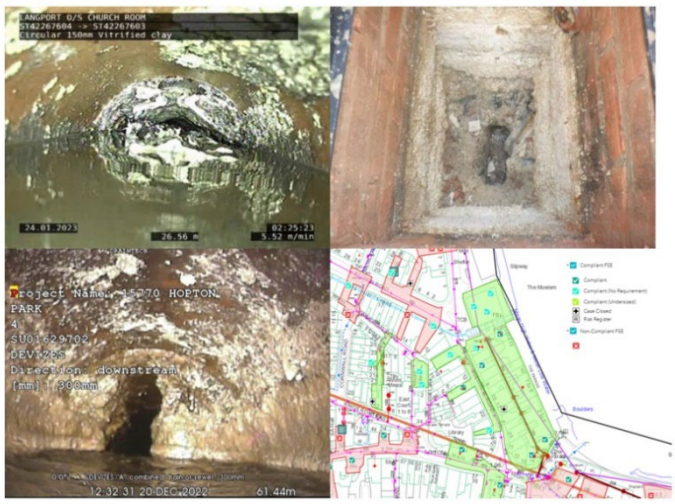
The commercial engagement team, work with food service establishments and other non-household customers to manage the disposal of fat, oils and grease. Their aim is to reduce blockages and asset failure which can result in detrimental environmental and customer impact. Working under the 4 “E”’s principles they:

- **Engage** with Food Service Establishments (FSE’s) and other non-household customers.
- **Education** regarding fats, oils & grease (FOG) damage and management
- **Encourage** best practice for correct disposal of FOG including installation of correctly sized grease trapping equipment.
- **Enforcement** action where repeated breaches of Section 111 of sewer law, with aims to recover costs and prevent future misuse of the sewer.

FSE’s are identified following a review of repeat blockages, which are caused by FOG or illegal discharge from Non-Household Customers. CEO’s visit the FSE and inspect their grease trap, whilst also enquiring how they dispose of the grease. The CEOs use an app called the Commercial FOG Targeting App to see which FSE are compliant, and which need monitoring and further intervention. FSE are organised into clusters, which enables monitoring of misuse caused incidents to be completed, and any incidents which occur attributed to one or a few FSEs. Clustering also allows the team to see if the engagement work being carried out is having a positive impact – i.e. from a reduction in blockage numbers within a cluster.

Since we have been working with FSEs, 1,377 at present, we have prevented 1.2m litres of FOG from entering the sewer network. The following case study is am example of this activity.

Commercial Engagement Officers Case Study



Following a review of repeat blockages, The Parade in Swanage was identified as a FOG hotspot with 11 incidents occurring within a 3-year period. 8 incidents were confirmed to be because of FOG, the remaining 3 were attributed to an "unknown" cause.

Since the CEO's began engaging with FSE's within the cluster and compliance was achieved at them all there have been 3 further incidents. Two of these have been attributed to residual FOG in the line before compliance was achieved, the third was due to rag.

Case Study: Commercial Engagement Officers – The Parade, Swanage

4.2 Domestic Engagement Officers (DEOs)

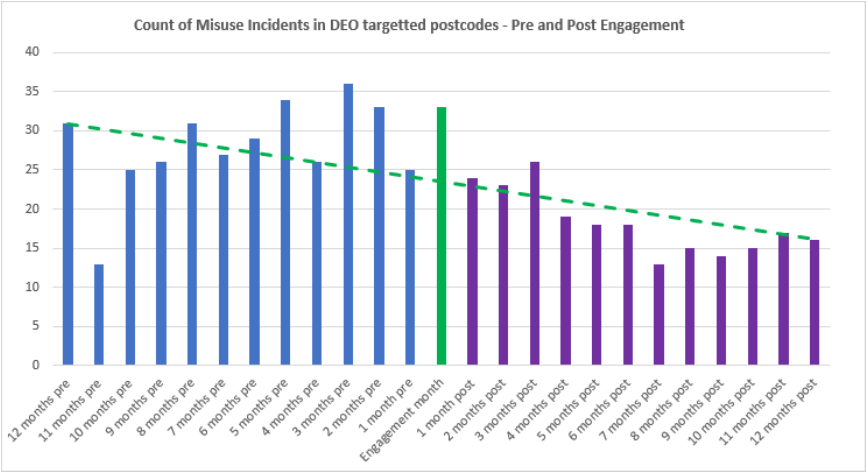
Each year we deal with approximately 13,000 blockages in our sewer network at a cost of around £5m. Of these blockages approximately 75% of them are caused by sewer misuse, where customers have incorrectly disposed of items such as wet wipes, sanitary items, or FOG into the sewer.

There are 3 DEOs which are assigned to one of the three regions in the Wessex Water area. They have the role to educate and spread awareness on what should, and should not, be flushed down customer toilets, or disposed of down their sinks.

DEOs are assigned properties in "misuse hotspots" within their regions and visit these properties to discuss with our customers how to prevent unnecessary blockage on our sewer network. They may also drop off informative leaflets or direct customers to our website where they can order free waste pack which contains devices to help customers keep their drains clear of blockages. The DEOs also attend community events and visit external stakeholders to further spread awareness.

To date approx. 22,000 households across the Wessex region have engaged with one of the DEOs on sewer misuse. Due to these positive engagements, we have seen a marked reduction in misuse caused incidents.

Figure 21 – Profile of the reduction in sewer misuse incidents



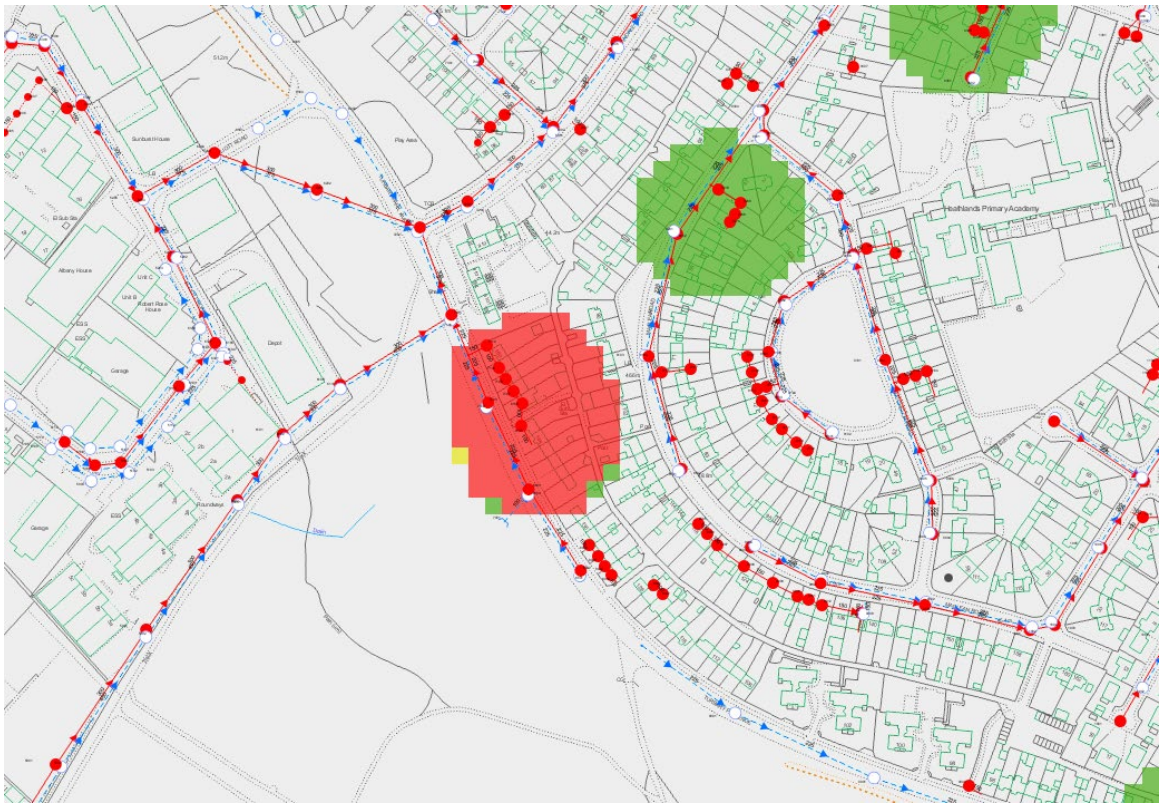
The following case study is an example of this activity.

Domestic Engagement Officers Case Study

Following a significant pollution incident and a history of 18 blockages in the area, a road in Bournemouth was identified as being a blockage hotspot and a suitable candidate for a domestic customer engagement trial. As part of the trial our Environmental Educational Team completed domestic educational visits at all 267 properties.

Where possible the Environmental Educational Officers engaged with customers in the area to advise on the recent and historical blockage incidents and looked to educate as to how they (the Wessex Waters customer) could assist moving forward in ensuring the risk of blockages is reduced.

As part of this engagement “Stop the Block” letters were also provided to each property and customers were asked to complete a short survey. The data from this trial showed that 96% of customers were aware of sewer misuse and the impact on the sewerage system. It also highlighted that 12% of customers used “flushable” wipes and of those that used them 22% flushed the wipes down the toilet.



Case Study: Domestic Engagement Officers – Bournemouth

5. SPS Performance and optimisation

We continue to invest in the monitoring of sewage pumping stations and machine learning tools to help us analyse performance data. The active monitoring of these sites allows us to respond quickly and efficiently to unusual behaviour at sites which could lead to a pollution. These analytical tools can also be used to monitor various compliance causes of sites with overflow permits such as screen performance.

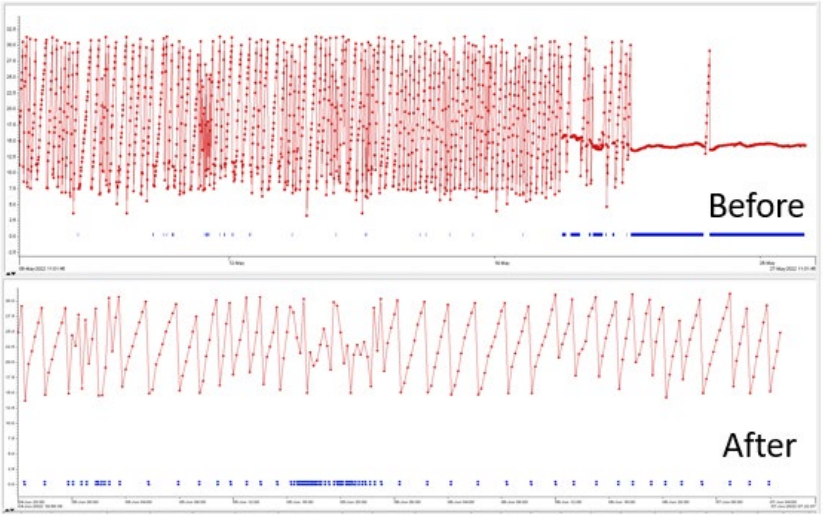
In addition to this we are also undertaking small scale modifications to control assets, under the SPS MCB replacement programme, to reduce the risk of failure at SPS's. Work under this programme includes panel modification where old panels give false readings on pump running when phase fuse blows and stops the pump from running but PLC & Prism both show pump running. This happened at Melksham Primrose Drive SPS and Box Mill Lane SPS, leading to pollutions. In AMP7, 40-50 sites have had panel modifications to reduce the risk of failure.

Without this monitoring programme it is unlikely that the issues picked up under this programme would have been detected as quickly and these sites may have been at risk of potential pollutions if they were left unresolved.

The following case study provides an example of the benefits of SPS performance and optimisation.

SPS performance and optimisation Case Study

At 15595 Weston-Super-Mare Anchor Head SPS the pumping station run stops were analysed and showed a significant increase in pumping run time, whilst the wet well level remained relatively constant. A site visit revealed that the stop level for the pump had been set too low. Once this was resolved the pump runtimes and sump levels returned to normal.



Without data analysis we would not have picked up that the pump was running almost continuously. As this site only has one pump at the site, if it failed the consequences would be severe.

6. Trade effluent permit compliance

During AMP7 we have noticed an increase in the number of pollution incidents, or near misses, that have resulted from a discharge into the sewer from one of our trade effluent customers. These have the potential to cause a severe failure of the sewage treatment process and pollutions. For example, a strong industrial chemical can cause biocide of the activated sludge process, or a significant organic spill can overwhelm smaller sewage works.

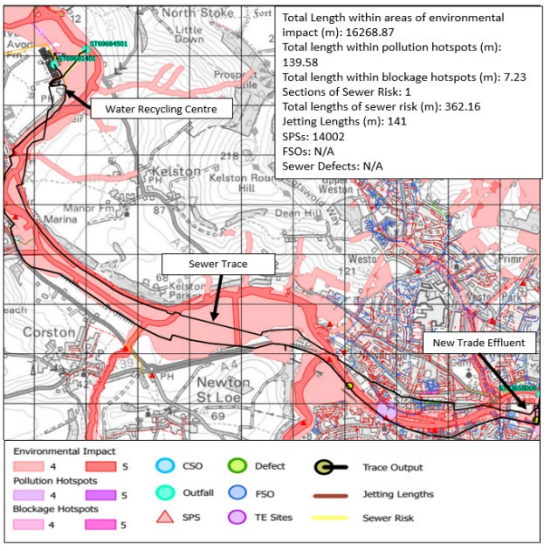
To ensure more effective risk management going forward, we are proposing to increase our monitoring of our trade effluent customers with more regular sampling, consultation and enforcement. This should enable us to catch problems earlier, and hence protect a failure of the sewage treatment works and hence pollutions in the watercourse. The following case study provides an example of the success of the proposed approach.

We currently have c1,200 trade effluent customers, of which we manually sample monthly c250 of the higher risk. In the past 4 years, we have had 8 known pollutions from our trade effluent customers, including two category 1 pollutions, but suspect the true figure to be higher than this. These pollutions tend to come from the food & drink industry (eg dairy, brewing & abattoirs) and from textile manufacturing (eg leather and garment manufacturing), and it is with these industries that we propose to first introduce greater monitoring and liaison.

Trade effluent Case Study

Following several pollutions attention has been brought to the amount of information shared between the Trade Effluent team and Sewerage managers, and the involvement of sewerage managers in the initial consenting and re-consenting of Trade Effluents (TE). To aid information sharing and increase the understanding of routes, proximity to known issues and areas of concern a GIS system was required.

Historically when a new trade customer wanted to connect, the trade effluent team had to undertake a manual sewer trace downstream from the point of connection down to the catchments water recycling centre. During this manual trace they would highlight areas of concern.



With the development of this automated GIS system a trace from the TE to the WRC can be created, highlighting any high-risk environmental impact areas, pollution or blockage hotspots, structural defects, jetting lengths, high risk sewer lengths and the presence of other assets. By running this process an automatic trade effluent trace report is produced which provides details on everything found.

The document can then be used by Trade Effluent officers to set appropriate consent limits for the trader and used in consultation with the sewerage managers to decide whether the proposed discharge is acceptable. For example, the Sewerage manager may raise concerns about the potential risk and either suggest a stricter limit (e.g., for instantaneous flow rate) or in extreme cases object to the proposed discharge. In the latter case, the concerns will have to be escalated through the business for further review

The automated trace can also be used to perform an upstream trace from any point on the sewer network to identify all the trade effluents that discharge upstream. This trace can be used following repeat blockages caused by fat oil and grease to help identify potential food service establishment which may be contributing. These businesses will then be referred to our internal FOG team or the Trade effluent team.

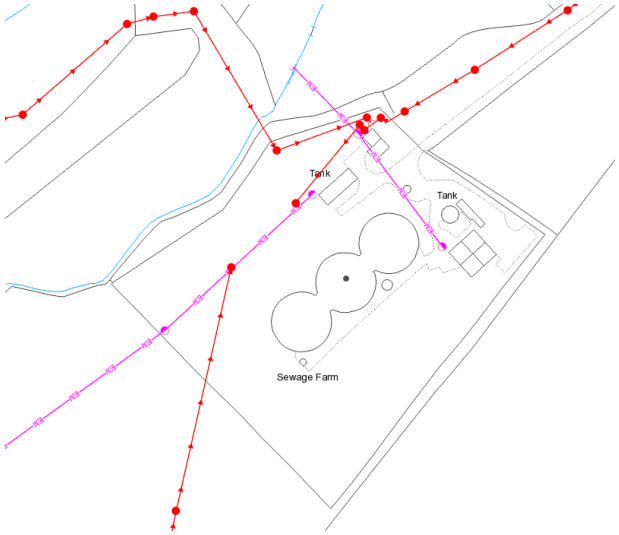
7. Tactical Interventions

As we mature in our approach with dealing with pollution events across our WRC estate, we have implemented a series of cross-company learnings from individual events. From these, we then drive continuous improvement initiatives on all WRCs through making tactical and preventative interventions. Examples of these activities include putting in additional temporary treatment during wet weather, proactive management of inlet works, clearing underground pipework and drains, increasing ICA and control equipment on critical process steps and smarter control of our storm discharges.

As we progress into AMP8, we anticipate an ever-increasing need for these types of intervention to meet an even tighter target for pollutions. The following case study provides an example of the benefit of tactical interventions.

Compton Bassett tactical intervention Case Study

During periods of heavy rain, Compton Bassett frequently discharges to the environment via its Emergency Overflow (EO) as a result of receiving flows that are in excess of the combined flow rate of the inlet and storm pumps. Although the site has a permitted high level EO the Environment Agency dictates any discharge from it as a pollution.



Following four pollutions within a five-week period, temporary over-pumping was installed at the site to pump excess flows from the inlet pumping station to the storm tanks, therefore preventing the discharge and resultant pollutions. Following this set up the level control showed that the over-pumping was utilised at least 20 times between Feb 21 and April 22. Though there were still a couple of discharges from the EO within this period, they were able to be categorised as a Cat.4 no impact due to the reduced discharge from the EO. On this basis it could be estimated that the over-pumping prevented multiple pollution events.

8. Adopt An Outfall initiative

This summer the “Adopt An Outfall” strategy was rolled out to Wessex Water staff. Colleagues were invited to sign up for a new in-house initiative to help improve the amount and quality of data we hold about the 10,000+ outfalls across our region.

A fit for purpose app was built to enable colleagues to “Adopt” an outfall close to their home, or somewhere they visit regularly. The app is used to record anything unusual about an outfall and allows colleagues to take a photograph which is analysed, recorded – and if necessary, passed on for investigation. All images are also loaded to the corporate image bank to help build a picture of what looks like “normal operation” for our outfalls, so any issues can be more easily identified, such as sewage debris or fungus.

Since the initiative was launched in June, 554 outfalls have been adopted by 434 employees, with nearly 1000 observations submitted via the app. A total of 152 issues have been identified and resolved through employee submissions and collaborative working across Sustainable Operations and Engineering.

The percentage of unmonitored outfalls has dropped from 92%, to 37%.

The Adopt an Outfall initiative is being funded from innovation through base expenditure.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of zero pollutions in 2050. Our profile to achieve this in the context of our 2025-30 proposed PC level is shown in Figure 22.

Figure 22 – Proposed profile of total pollutions to 2050

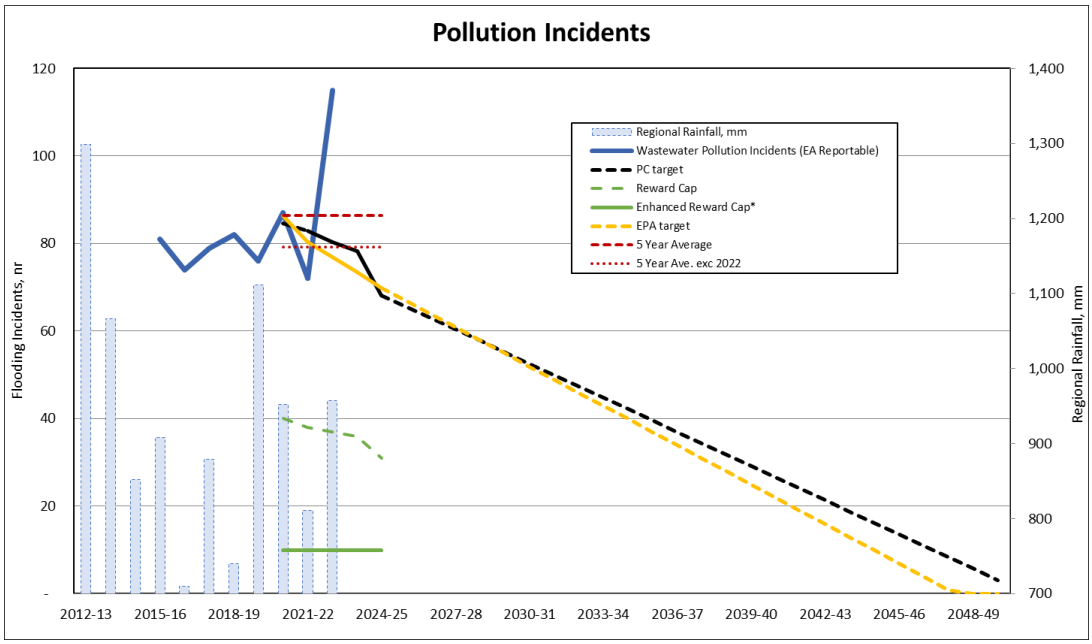


Table 102 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	25.76 (90)	15.67 (55)	11.95 (42)	8.22 (28)	4.54 (14)	0.00 (0)

This profile of performance is in the best interest of customers because:

- A linear trend is most cost-beneficial, not promoting excessive costs in order to try to achieve tighter targets earlier
- Allows for experience, learnings and technologies to develop at a more appropriate rate
- As target trends to zero, the ability to improve performance is likely to get more difficult

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 103 – Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	15.67 (55)	15.59 (55)	15.59 (55)	15.59 (55)	15.59 (55)
Step change in performance from enhanced expenditure	-0.70 (-2)	-1.43 (-5)	-2.17 (-8)	-2.91 (-10)	-3.64 (-13)
Total performance	14.97 (53)	14.16 (50)	13.42 (47)	12.68 (45)	11.95 (42)

As the performance tables only include the enhancement expenditure in AMP8, table OUT1 only reflects the performance from base expenditure in 2030-35.

1.12.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.791m outperformance and -£0.791m underperformance payment

Proposed standard ODI rate: £0.791m outperformance and -£0.791m underperformance payment

1.12.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 104 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	28.62 (100)	27.19 (95)	25.76 (90)	24.32 (85)	22.89 (80)

P10 rationale: worst recent performance 110, profile proposed based on improvements outlined

Table 105 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	20.03 (70)	18.60 (65)	17.17 (60)	15.70 (55)	14.30 (50)

P90 rationale: effects of investment will be realised towards the end of the AMP.

1.13. Serious pollution incidents (PR24_SPL_WSX)

1.13.1. Introduction

Serious pollution incidents is a new common performance commitment for AMP8.

This performance commitment is designed to incentivise the company 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.

A serious pollution incident is defined in the serious pollution incidents metric set out in the reporting guidance from the Environment Agency's water and sewerage company Environmental Performance Assessment (EPA) methodology version 9 published in May 2021.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 an escape of a contaminant from a water company sewerage asset or water supply asset affecting the water environment.

PC units: Number of serious pollution incidents. This measure is not normalised.

1.13.2. Our long-term ambition

2050 target: Zero

At the heart of our Strategic Direction Statement (SDS) are eight outcomes, all co-created with stakeholders focusing on long-term ambition.

Excellent river and coastal water quality is one of these outcomes, and we have set ourselves the stretching aspirational target of zero serious pollutions by the year 2050. Both our customers and the wider public see this as a priority.

In 2017, the EA set out performance expectations for 2020 to 2025 in the Water Industry Strategic Environmental Requirements (WISER). Relevant extracts from the WISER are reproduced in Appendix 3 of Environmental Performance Assessment (EPA) methodology version 9. This includes an expectation for serious (category 1 and 2) pollution incidents to trend to zero by 2025.

Table 106 – Thresholds for Serious Pollutions as part of the EPA methodology.

Thresholds

The red, amber, green (RAG) threshold 5 year glide path:

	Anglian Water Severn Trent Water Thames Water United Utilities	Dŵr Cymru Welsh Water Northumbrian Water Southern Water South West Water Wessex Water Yorkshire Water
Year 1 & 2 (2021 & 2022 data)	<=3	<=1
	4 or 5	2 or 3
	>=6	>=4
Year 3 & 4 (2023 & 2024 data)	<=2	<=1
	3 or 4	2
	>=5	>=3
Year 5 (2025 data)	<=1	0
	2 or 3	1
	>=4	>=2

The WISER Published 11 May 2022 describes the statutory and non-statutory expectations of water companies for price review 2024 (PR24) and expected practice. The expectations for serious pollution incidents is of zero incidents (category 1 and 2).

A target of zero serious pollutions is particularly stretching. Historically the water industry has been notified of issues by customer notification and has not had real time visibility of its assets. However, this is changing with the installation of event duration monitoring (EDM) and sewer network monitoring, but this is still limited and leaves a significant area to be covered where we do not have eyes and ears to identify when assets are not operating as normal.

The sewerage network is an open network and customer behaviour is a big part of pollution root causes, with 65% of our Cat 1-4 pollutions coming from blockages. Rag/wet wipes and Fat Oil and Grease (FOG) being the biggest single contributor for these blockages. Increasing customer awareness of the impact of flushing items that are not suitable for the sewer/WRC and changing customer behaviour is not an overnight activity and the industry co-ordinated group SNAP (Sewer Network Abuse Prevention) have evidence that even areas that have shown improvement may not sustain this change and need constant reinforcement. As an industry we are looking for support from wet wipe manufacturer to move to products that are bio-degradable and are fine to flush, for food establishments and domestic user to recognise food and FOG should not be put down the sewer.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.13.3. Our performance and proposed baseline

Historical performance

Table 107 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	No AMP6 PC target. EPA target for serious pollutions, 2 incidents.								
Performance from base expenditure (Nr)	2	0	6	3	3	2	3	4	1
Step change in performance from enhanced expenditure	-	-	-	-	-	-	-	-	-
Overall performance (Nr)	2	0	6	3	3	2	3	4	1

In AMP6, the pollution caused by the Brean Merry Bee rising main burst and the resultant Enforcement Undertaking (EU) resulted in a commitment to install rising main burst detection at 50 sites; these installs were completed in 2019.

The programme was further extended in AMP6 and into AMP7 because of the increasing likelihood of failure due to ageing and deteriorating infrastructure, in particular asbestos cement and uPVC mains built in the 1960s/70s. To meet the Company's pollution reduction targets, forward looking investment plans will step up investment in proactive replacement to keep pace with the rate of asset deterioration. However, "business as

usual” operation still exposes Wessex Water to an increased risk of pollutions and operational issues following a failure in a rising main. Therefore, additional proactive measures are required to understand deterioration in rising main system performance.

The objective of the burst detection programme is to provide flow and pressure measurement to detect rising main bursts quickly and reliably, to reduce pollution effects and allow an expedient operational response. Increased knowledge of asset condition and indication of abnormal system performance will initiate more proactive maintenance interventions (before failure) on pumps, NRV, air valves etc, leading to improved energy efficiency, flow compliance and a reduction in reactive failures.

The following case study is an example of the benefits of the burst detection programme.

Case study - Stoborough – Wareham rising main burst

Date of Pollution: 19/04/2020
Water Impact Category: Category 3

At 22:00 on the 19th April 2020 the rising main from Stoborough Kings Arms SPS burst. This was discovered on the 21st April using our burst detection software, which detected that a greater volume of flow was entering the rising main compared to the volume leaving the rising main. Following the alert Operations were able to attend the site and locate the burst; allowing for both Stoborough Kings SPS and Stoborough Ridge SPS to be isolated and tankered preventing any further discharge to the environment.

Had the burst not been detected via the burst detection software, it is likely that the spill duration of the pollution would have been much greater due to the burst's remote location. Unless the pollution had been noticed by the landowner, it is unlikely that a member of the public would have noticed it for some time due to its distance from any public footpaths. As we managed to reduce the spill duration of the pollution it meant that we significantly decreased the impact to the environment, therefore protecting Wareham meadows SSSI from a significant pollution incident.

Currently 352 rising mains (Of 2600+ in total) have been classified as “critical rising mains” requiring improved monitoring. These are defined as a rising main that crosses any main river as defined by the EA, any railway or significant road. Or any main that passes through an area of significant environmental importance.

The installation profile of the burst detection programme since 2018-19 is shown below:

Table 108 – Installation profile of burst detection programme

	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	2024-25	Total
Planned installation	20	50	25	25	15	30	12	177
Installation completed	20	53	25	25	18			143
Installation completed (cumulative)	22	75	100	125	143			143

Our current performance

Table 109 – PR19 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	No AMP7 PC target. EPA target green status – 1 serious incident or below.				
Performance from base expenditure	4	5	4	2	2
Step change in performance from enhanced expenditure	-	-	-	-	-
Overall actual performance	4	5	4		
Forecast overall performance				2	2

Our average performance for serious pollutions is four incidents per year for the last five years. This has not dramatically changed over time; however, the EA EPA target through AMP7 has reduced from two to one in order to achieve the ‘green’ threshold for the serious pollution EPA indicator.

Our lessons learnt data shows that all cat 1-4 incidents come from the same root causes and our focus in our improvement plan is to reduce all pollutions. The key factor for our serious pollutions from the lessons learnt data is to intervene quickly, this is a key step in stopping a pollution increasing the impact it has on the environment.

Our Pollution Incident Reduction Plan (PIRP) details a variety of areas we are looking to continue to improve. We use it as a continuous improvement principle, learning lessons and instigating improvement all the time with a view to reducing the frequency of pollution incident and the impact they have.

The forecast performance for AMP7 in 2023/24 and 2024/25 is based on achieving Amber EPA status threshold for the serious pollution metric with two serious pollution incidents.

Proposed PR24 baseline

Proposed baseline: 3

Rationale: Performance baseline derived from the long-term average since 2011 of 3.2.

1.13.4. Proposed Performance Commitment Level

Performance commitment level

Considering our performance from base is expected to only maintain performance against upward pressures and that our proposed additional enhancement expenditure will deliver continual improvement to match the priority that our customers continue to place in minimising serious pollutions, we propose the following performance commitment level:

Table 110 – Propose performance commitment level

Table heading	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	3	3	3	3	3
Step change in performance from enhanced expenditure	-2	-2	-2	-2	-2
Proposed PC level	1	1	1	1	1

Whilst aiming to achieve zero serious pollutions in AMP8, this is unlikely whilst the sewer network monitoring is being installed and operated. Learnings from the operation of the sewer network monitoring will lead to developments in approaches and process that will help us achieve zero pollutions.

The proposed PC level will mean that we will only ever achieve ‘amber’ threshold for the serious pollution indicator in the EA EPA measures.

How we will deliver this step change

The following interventions are proposed to deliver the above step change in performance.

Table 111 – Proposed interventions

Intervention	Capex cost (£)	Opex cost (£)	TOTEX cost (£)	Expected Improvement in performance	% Impact on performance
Smart Networks – 12,000 in-sewer monitors	30.00	11.70	41.70	-2.75 serious pollution incidents/annum	-75.0%
Proactive CCTV near watercourses	3.43	0.00	3.43	-0.25 serious pollution incidents/annum	-12.5%

Improvement in performance through enhancement expenditure to one serious pollution per annum in AMP8.

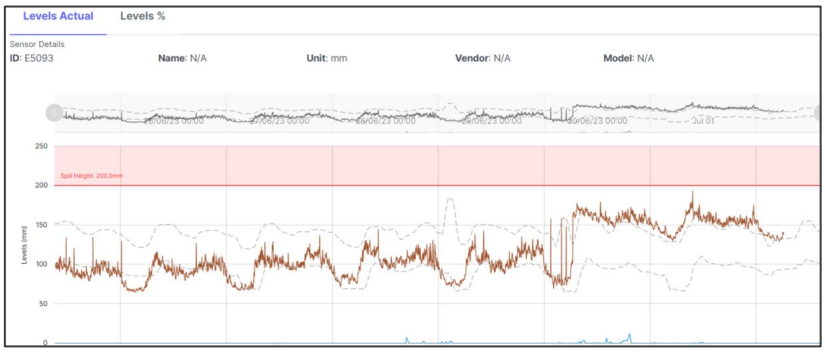
Some of the proposed initiatives to help reduce the risk of serious pollutions are summarised below.

- **Proposed improvement – Smart Networks**

We are currently using our EDM and StormHarvester to identify blockages near our SPS, CSO and WRC to identify these and respond quickly, see the following case study.

StormHarvester Case Study

The Network Monitoring Team were alerted via StormHarvester, a machine learning tool that detects anomalies in the sewer, to unusually high levels at Saltford CSO (Graph 1).



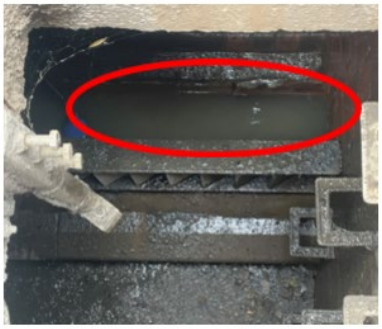


Figure 1: Sewage in the CSO channel flowing slowly (sewage looks still) and at a high level. CSO channel circled in red.

Figure 2: Blockage (circled in red) downstream of the CSO. Note flows are running left to right with high level before the blockage and low fast flows after.

When our North Sewerage team attended the site, they identified a partial blockage downstream of the CSO. They were able to jet the sewer clear and remove the blockage. Due to the location of the blockage early detection and fast action of our operational team meant a Category 2 pollution was averted (potential pollution impact based on previous incidents at this CSO).

In AMP8, we are looking to increase our monitoring, analysis and control in our Smart Waste System strategy by installing a further 12,000 in-sewer monitors. We are also looking to develop the use of the data we have already and identify the gaps to be filled by new monitoring within the network and WRC then how that is used effectively to change our intervention. We want our interventions to be directed by real time data rather than being guided by customer information as this will switch to proactive rather than reactive.

The installation of 12,000 monitors during AMP8 will lead to approximately 4,000 incidents requiring attendance per annum leading to interventions from a simple visit and clean to potentially significant repair and maintenance works required, for example, to repair a sewer collapse.

In the last 12 months, StormHarvester has identified 158 ‘Good Catches’ which refers to an issue what has been identified and resolved that may have caused a spill or operational issue if not picked up; this is primarily made up of blockages, however, also includes pump and control issues. Since we began using StormHarvester in November

2021, we have had 204 good catches and potential pollutions avoided. It must be remembered that the current location of the monitoring is the event duration monitoring installed at storm overflows and not for the task of identifying sewerage operational issues.

- **Proposed improvement – proactive CCTV near watercourses**

The following table shows the total length of sewerage near a watercourse using different buffer sizes.

Table 112 – Sewer length categorised by buffer sizes.

Sewerage near watercourse, buffer size	50m	100m	125m	150m
Total length of sewerage, km	3904	6619	7843	9017
Length of CCTV completed, km	287 (7%)	371 (6%)	403 (5%)	429 (5%)
Pollution Risk (PR) Grade 5, length km	34	40	41	41
PR Grade 4, km	500	617	657	693
PR Grade 3, km	1164	1601	1771	1925
PR Grade 2, km	1496	2600	3097	3572
PR Grade 1, km	710	1762	2279	2787

The average distance from pollution source to watercourse is 140m, however, 75% of pollution incidents occur within 50m of the sewerage system.

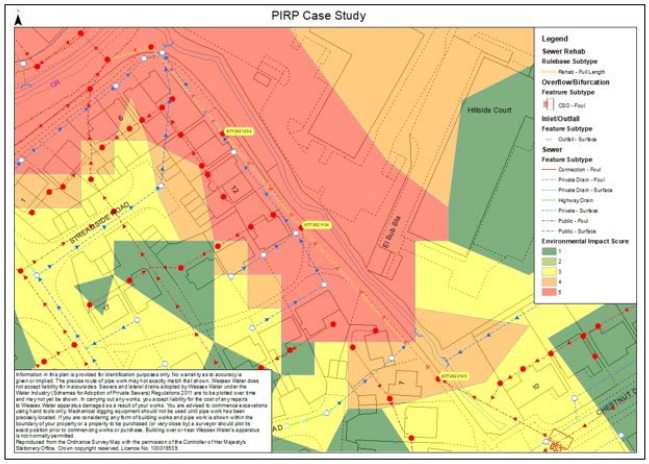
The length of sewerage that has had a CCTV inspection of the total length of sewerage near to a watercourse is relatively small, 5-7%. The proposal is to inspect all sewerage within 150m of a watercourse with a pollution risk grade of 4 and 5.

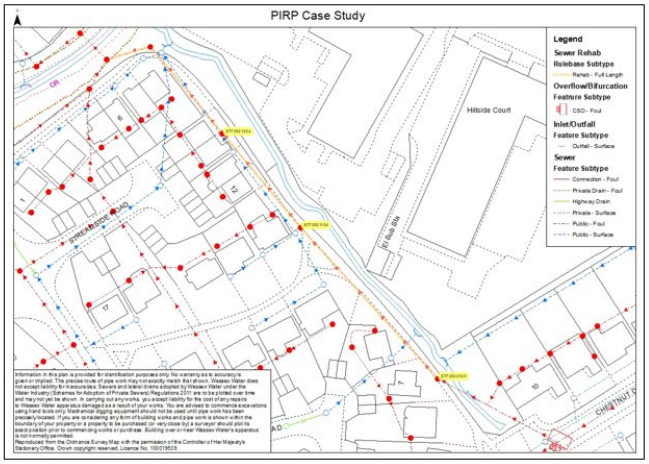
The pollution risk grade is calculated by combining all the available data (environmental impact, asset condition, historical incidents, condition surveys, proximity to pollution hotspots, food outlet density, etc.) to produce an overall risk score for each pipe. How this is calculated is covered in more detail in section 1.12 the total pollution performance commitment commentary.

The following case study provides an example of the benefits of proactive CCTV.

Proactive CCTV near Watercourses Case Study
To effectively manage our capital investments and the maintenance of our sewer network Wessex Water use a Sewer Risk Model, which gives each pipe in our network a risk score based on all available date (environmental, assets, incidents surveys etc). This provides an objective and pragmatic approach to identify and prioritise areas and assets in need of investment based on real life information.

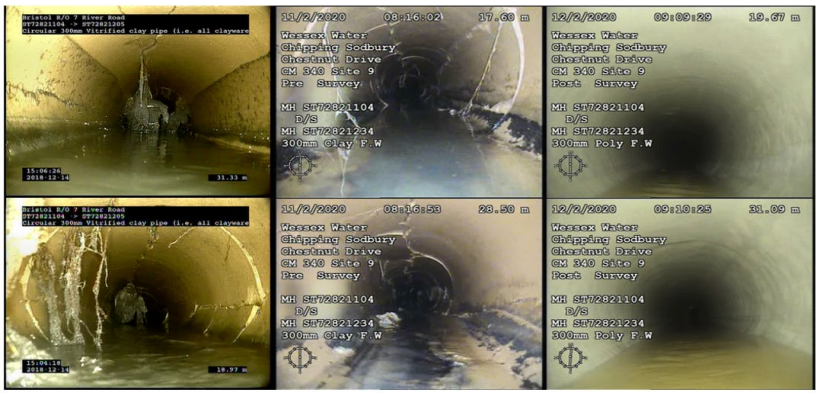
The Sewer Risk Model flagged the length of sewer running parallel to a watercourse as high risk in Chipping Sodbury. Due to the section of the network running parallel to a tributary of the River Frome, being downstream of a CSO and being surrounded by woodland the section was designated as high risk with a maximum Environmental Impact Score.





Following the identification of this section a new CCTV Survey was raised to investigate and confirm the networks conditions (~300m of survey). This survey confirmed that the network had poor structural and service grades with root mass ingress, mass debris, lateral fractures and circumferential fractures. In order to mitigate the risk of a potential collapse, a scheme was raised to complete a full structural lining of 253m of the sewerage network. Below shows the initial CCTV, the pre-rehab clean and post rehab.

Initial CCTV Pre-Rehab Clean CCTV Post Rehab CCTV



Had this section not been identified using the sewer risk model and a collapse or blockage had occurred it is likely that a significant pollution incident could have occurred, with a high environmental impact.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 0 total pollutions in 2050.

Table 113 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	2	1	1	1	1	0

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 114 – Proposed performance 2030-2035

Table heading	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	1	1	1	1	1
Step change in performance from enhanced expenditure	0	0	0	0	0
Total performance	1	1	1	1	1

As the performance tables only include the enhancement expenditure in AMP8, table OUT1 only reflects the performance from base expenditure in 2030-35.

It is assumed that the maintenance and replacement cost of the monitoring equipment installed during AMP8, will become a base expenditure cost in AMP9, as well as the proactive interventions because of the increased monitoring.

1.13.5. Outcome delivery incentive

Incentive type: underperformance payments only

Ofwat standard ODI rate: -£1.141m underperformance payment

Proposed standard ODI rate: -£1.141m underperformance payment

1.13.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 115 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	5	5	5	5	5

P10 rationale: worst level of performance since 2011-12

Table 116 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	0	0	0	0	0

P90 rationale: best level of performance since 2011-12

1.14. Discharge permit compliance (PR24_DPC_WSX)

1.14.1. Introduction

The purpose of this discharge permit compliance performance commitment is to incentivise the company to fully meet its 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 the company discharges.

Discharge permit compliance is an existing AMP7 PC, where it is titled “Treatment works discharge compliance.”

The discharge permit compliance is defined in the discharge permit compliance (numeric) metric in the reporting guidance from the Environment Agency for the water and sewerage company Environmental Performance Assessment (EPA) methodology. It is reported as the performance of water recycling centres, WRCs (to treat and dispose of sewage), and water treatment centres, WTCs (for the water supply service), 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.

In the PR24 Final Methodology, Ofwat advises that it expects to use the latest methodology version which is in effect at the date of our PR24 final determinations, subject to the outcome of the PR24 determinations process. The latest published version from the EA is version 10 (February 2023). The EA is currently consulting on adding flow (Flow Passed Forward and/or Dry Weather Flow) to the EPA. It is unclear if they will add this to the metric list under discharge compliance or add as a new metric. Stakeholder consultation is expected spring/summer 2024, with revised methodology in spring 2025. As such, we have not made any consideration to potential flow-related changes to the EPA and any subsequent impact on this discharge permit compliance PC.

PC units: Percentage compliance, reported to one decimal place.

Reporting is annual, on a calendar year basis (to align with the EPA). For example, performance assessment for 2025-26 will be based on the calendar year 2025, and 2029-30 assessment will be based on the calendar year 2029.

1.14.2. Our long-term ambition

2050 target: 99.7%

Whilst we aim and work hard to achieve 100% discharge permit compliance, there are a number of factors outside of the control of the company that could lead to a site being classed as not meeting certain conditions. With ever-tightening permits, there is increasingly a need for sites to be running optimally and adequate redundancy / standby provision for an increasing range of scenarios. We do not believe the level of investment required to guarantee 100% discharge permit compliance under all possible scenarios is cost-effective.

Long term we are considering adding continuous monitoring of our inlet works, particularly those with trade effluent discharges within their catchments. This will indicate potentially elevated influent levels outside the design parameters of a site. Combined with Digital Twins of our WRCs, these can be used to predict WRC performance and give an early warning of discharge permit compliance risks. This warning will mainly be used to generate alarms for operational staff to react to as for most sites we do not have the ability to divert incoming flows to a holding tank and/or change how the site operates.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.14.3. Our performance and proposed baseline

Historical performance

Table 47 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	Part of the EA's EPA in previous AMPs – green status equal to or more than 99%								
Performance from base expenditure	99.67	99.67	99.02	99.67	99.67	99.37	99.02	100.00	98.46
Step change in performance from enhanced expenditure	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Overall performance	99.67	99.67	99.02	99.67	99.67	99.37	99.02	100.00	98.46

We aim to operate our water recycling centres (WRCs) and water treatment centres (WTCs) to meet all regulatory standards, to minimise environmental impact and to ensure that they continue to deliver high quality reliable services, even in the face of unusual events. Capital investment is required at times to maintain and enhance our treatment level of service, particularly to meet changes to any discharge permit limits, as required by the EA to meet our environmental obligations.

Whilst the data above is provided to 2011, WTCs only formed part of the permit compliance metric from 2016.

Our current performance

Table 118 – PR19 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	100.0	100.0	100.0	100.0	100.0
Performance from base expenditure	99.08	100.00	99.35	99.03	99.03
Step change in performance from enhanced expenditure	0.00	0.00	0.00	0.00	0.00
Overall actual performance	99.08	100.00	99.35		
Forecast overall performance				99.03	99.03

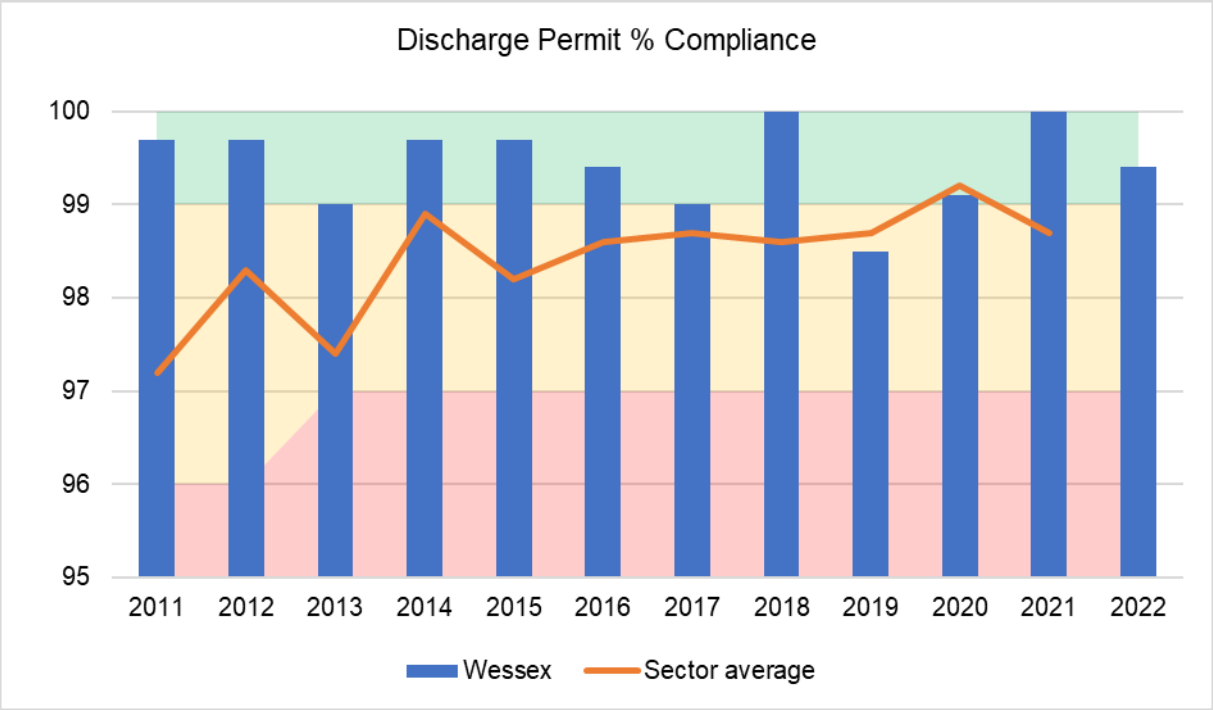
The table below provides a breakdown of the derivation of our overall performance for PR19.

Table 119 – Detail of PR19 performance

	2020-21	2021-22	2022-23
Overall performance	99.1	100.0	99.4
Number of permitted discharge outlets from WRCs	299	297	290
Number of permitted discharge outlets from WTCs	26	18	18
Number of non-compliant WRCs	1	0	1
Number of non-compliant WTCs	2	0	1

The following graph shows our historical and current performance in the context of the wider industry.

Figure 23 - Sector comparison of discharge permit comparison



Wessex Water have historically consistently ranked 1st or 2nd for discharge permit % compliance. We have ensured our historical level of investment was appropriate in order to safeguard our ability to maintain this leading performance. However, as can be seen in the chart above, our discharge permit % compliance his trending downward while the sector average has improved. Indeed, in 2019 and 2020, we were below the sector average.

Proposed PR24 baseline

Proposed baseline: 99.0%

Rationale: This baseline is taken as the average of the past five years (2018-2022), recognising the variability during this period.

1.14.4. Proposed Performance Commitment Level

Performance commitment level

Ofwat is proposing a performance commitment level of 100%, without a deadband.

Whilst we aim and work hard to achieve 100% discharge permit compliance, there are a number of factors outside of the control of the company that could lead to a site being classed as not meeting some of its permit conditions. With ever-tightening permits, there is increasingly a need for sites to be running optimally and adequate redundancy / standby provision for an increasing range of scenarios. We do not believe the level of investment required to guarantee 100% discharge permit compliance under all possible scenarios is best for customers and the environment, and especially given other competing priorities.

We propose the following performance commitment level: 99.0%.

Alternatively, if Ofwat were to propose a performance commitment level of 100%, we would seek a deadband of 99%, which is comparable to that of PR19.

Our forecast is based on no changes to the number of discharges from 2022 to the start of AMP8, which comprised discharges from 290 WRCs and 18 WTCs, meaning one failing site equates to 0.33%. The resultant values at the start of AMP8 rounded to one decimal point would be:

- 0 failing sites = 100.0%
- 1 failing site = 99.7%
- 2 failing sites = 99.4%
- 3 failing sites = 99.0%
- 4 failing sites = 98.7%

We do, however, forecast that the number of sites will change during AMP8 and into AMP9:

- We expect a number of WTC permits for run to waste discharges in the coming AMP, although our current view is that these would be descriptive rather than numeric permits.
- Market Lavington WTC is being considered for a permit revocation, during AMP8.
- Ubley WRC will be closing, with flows transferred for treatment at Blagdon WRC. In the PR19 WINEP the phosphorus removal scheme has a regulatory date of 22/12/2024, however due to third party delays we have requested to the EA an extension to the completion date to 22/12/2026.
- Nynehead WRC currently has a descriptive permit but is exceeding 250pe, and we are going through the process of applying for a numerical permit with the EA. Subject to the permit application process, we forecast gaining this new permit during 2025/26.
- Lytchett Minster WRC will be closing, with flows transferred for treatment at Poole WRC. This is our proposal to meet the PR24 WINEP phosphorus and nitrogen outcome, with planned delivery during 2033.

The net effect that we can determine at this point is profiled in the following table.

Table 120 – Proposed performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Number of contributing sites	309	308	307	307	307
Performance from base expenditure (3 failing sites)	99.0	99.0	99.0	99.0	99.0

Step change in performance from enhanced expenditure (3 failing sites)	0.00	0.00	0.00	0.00	0.00
Proposed PC level	100.0	100.0	100.0	100.0	100.0
Proposed deadband (if PC is 100% compliance)	99.0	99.0	99.0	99.0	99.0

Please note that the above figures marginally differ from the performance commitment tables as the tables are structured to two decimal places, however, as per the formal definition, the units should be to 1 decimal place only.

How will we maintain our service

We will maintain our service through base maintenance and growth provision required to net off the deterioration that would be due to population increase, at the levels and costings and proposed within this business plan.

How does this achieve our long-term target?

Our long-term aspiration is to achieve 100% discharge permit compliance, however due to the range of factors outside our control that would be disproportionately expensive to mitigate, our long-term target is to achieve a performance commitment level of 99.7% in 2050.

Table 121 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target (% compliance)	99.0	99.0	99.4	99.4	99.4	99.7

We believe this is an appropriate balance of investment, risk and performance under all possible scenarios that is best for both customers and the environment. New schemes are already costing more than historical schemes for the same permit conditions, because they are required to have a higher level of resilience than previous e.g. the Environment Agency no longer waiver sample failures associated with National Grid power outages, or elevating/protecting assets to a higher flooding level.

Our commentary for Total Pollution Incidents refers to our Pollution Incident Reduction Plan. This demonstrates our commitment to reducing pollutions and improving discharge permit compliance, whilst all highlighting the many challenges as we aim for ever lower (in the case of pollutions) or higher (in the case of discharge permit compliance) targets.

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 122 - Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	99.02%	99.02%	99.02%	99.02%	99.02%
Step change in performance from enhanced expenditure	0.00%	0.00%	0.00%	0.00%	0.00%
Total performance	99.02%	99.02%	99.02%	99.02%	99.02%

1.14.5. Outcome delivery incentive

Incentive type: Underperformance payments only

Ofwat standard ODI rate: -£2.359m underperformance payment

Proposed standard ODI rate: -£2.359m underperformance payment

1.14.6. Risks to performance (P10/P90)

P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 123 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	98.5%	98.5%	98.5%	98.5%	98.5%

P10 rationale: This P10 figure represents our worst performance since 2011 and occurred in 2019. It equates to five failing sites.

Table 124 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	100.0%	100.0%	100.0%	100.0%	100.0%

P90 rationale: This P90 figures represented our best performance and also the maximum attainable.

1.15. Bathing water quality (PR24_BWQ_WSX)

1.15.1. Introduction

The purpose of this bathing water quality performance commitment is to incentivise the company to improve water quality at surface waters designated for swimming within its region. By encouraging the improvement of bathing water quality, this performance commitment will also help to enhance coastal and inland environments and support the creation of further social and environmental value.

This Bathing water quality PC is new for PR24, although we had a bespoke PC in AMP7 titled "Working with communities to improve bathing water experience", which incentivised engagement activity.

Formal classifications for bathing waters are determined by the Environment Agency annually, as stipulated through the Bathing Water Regulations. The regulations make provision for the exclusion of samples taken at the time of short term pollutions – which is a pollution that has clear causes, can be predicted and is expected to affect the quality of a bathing water for less than 72 hours – however Ofwat are proposing to include these samples in the classifications for this PC. No consideration is given to whether or not the water company is implicated in the cause of any short term pollution (in historical datasets or during PR24), and we advocate the alignment of the PC definition to the EA's own formal classifications.

Performance for this PC is calculated as a single overall average 'score' for bathing water quality as follows:

$$\frac{\sum_i \ Weighting \times number\ of\ bathing\ water\ that\ meet\ the\ classification}{Number\ of\ bathing\ waters\ in\ the\ company\ area}$$

Where:

- i = bathing water classification which can be excellent, good, sufficient or poor.
- Weighting is 100% for excellent classification, 66% for good classification, 33% for sufficient classification and 0% for a poor classification.
- An overall average score of 100% would mean that all bathing waters are excellent, whereas 0% would mean all bathing waters are poor.

The bathing water season is 15th May to 30th September. In their PR24 Final Methodology, Ofwat advise that the baseline is designated bathing waters and their classification as at the Final Determination in December 2024, i.e. as per the 2024 bathing water season, with no mid-AMP8 newly designated locations being taken into account. Any new bathing water designations between now and the Final Determination would, however, need to be included within the PC calculation. No new bathing waters were designated in the Wessex Water area in the most recent Defra round of applications, however we are aware of a handful of new applications being considered for inland bathing waters, thus there is a risk new bathing waters coming into the PC. It is likely that these will start as 'poor'.

Factors affecting water quality

Faecal Indicator Organisms or bacteria can come from many sources including sewage (both public and private sewerage systems), run-off from fields and agricultural livestock, wildlife, birds and road drainage.

These bacteria are used to measure compliance with Bathing Water standards and are based on World Health Organisation research that recorded the frequency of stomach upsets in people bathing in differing water quality.

The concentration of these bacteria indicate a risk to the bather's health if the water is ingested; the greater the concentration the higher the risk of illness. Excellent bathing water quality does not mean that there is no risk of illness to bathers if ingested, rather that the concentration of bacteria and risk of illness is lower than when water quality is good or less than good. The safe standard for ingesting these bacteria is zero (set under the Drinking

Water standards) and any concentration above this can cause illness. Untreated river or sea water is never safe to ingest because it contains bacteria and other contaminants and pathogens such as pesticides, and causes illnesses like leptospirosis (Weil's disease).

Excluded from the PC is Henleaze Lake. Whilst within the Wessex Water region, it is a private inland bathing water not influenced/affected by any of our discharges/activities.

PC units: Percentage, report to one decimal place.

1.15.2. Our long-term ambition

2050 target: 86.4%

We have made significant historical investment to improve our coastal discharges affecting bathing waters. Whilst we continue to make improvements to our continuous and intermittent discharges, we consider that any improvements we make will have a minor influence on bathing water quality, particularly along the Somerset coast as there are so many other more significant influences. We will continue to support the Litter Free Coast and Sea projects in PR24 to provide wider education and guidance to the business and visitor communities at all of our coastal bathing water locations but similarly, this has marginal impact in terms of bathing water quality. Recent Microbial Source Tracking (MST) undertaken by the EA around Weston super Mare concluded that seabird faeces are likely to be a significant source of contamination at the nearby bathing waters and may, in part, be responsible for poor compliance.

As the PC only relates to currently designated bathing waters, we offer no projections for any future designations of inland (or re-designations of coastal) bathing waters for our region.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

The long-term ambition represents every designated bathing water at its highest classification since 2015. There is a concern that incentivising the water company to actively target this in the short term could risk customers subsidising the activities of other sectors to improve their performance, outside of the direct control of the water company.

1.15.3. Our performance and proposed baseline

Historical performance

Table 125 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	n/a								
Overall performance – Official BW classification	-	-	-	-	85.6%	87.1%	85.7%	87.1%	86.7%
Overall performance – PC definition	-	-	-	-	85.6%	87.1%	85.7%	85.7%	86.7%

For the purposes of the above assessment, we have used the number of designated bathing waters in the given year (excluding Henleaze Lake). The above includes the bathing water at Bournemouth Manor Steps, from when it was designated in 2018.

Some of the activities which have been undertaken to improve bathing water quality are summarised below.

Coast and rivers watch

Wessex Water was the first company to provide near real-time bathing water notification through our Coast and Rivers Watch service. The service, which started in April 2012, goes beyond the bathing season (15th May – 30th September) and reports on when overflows are in use throughout the year. Designed with input from local councils, Surfers Against Sewage and the EA, Coast and rivers watch enables us to report on overflows potentially affecting 27 designated bathing waters. A further 21 designated bathing waters are not affected by storm overflows, and these are clearly identified. Additionally, the system reports on overflows potentially affecting 13 other recreational waters.

Working in partnership

We recognise that the quality of our recreational waters is a complex picture, with many contributing factors and stakeholders. Working together with the EA, councils and local groups is the only way to better understand the impacts on recreational waters from storm overflows and other sources. The changes we can all make and longer-term solutions, will enable us to enjoy our watercourses, coasts and seas.

We have been working with the Litter Free Coast & Sea partnerships in Dorset and Somerset for over 10 years on the key issues of interest to local communities. The partnerships include local authorities, the EA, Catchment Partnerships and other stakeholders who are passionate about the quality of the coast and sea. Activities include developing local beach clean groups, running events for local communities to raise awareness, such as 'Only Rain Down the Drain'; working with businesses to improve waste practices and reduce litter and education opportunities within schools.

Our current performance

Table 126 – PR19 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	n/a				
Overall actual performance – Official BW classification	n/a* (86.7%)	85.3%	83.9%		
Overall actual performance – PC definition	n/a* (86.7%)	83.2%	85.7%		
Forecast overall performance – PC definition				85.7%	85.7%

*The EA did not take samples during 2020 due to Covid-19, with any classifications carried over from 2019.

Burnham Jetty North, on the Somerset coast overlooking the Bristol Channel, was de-designated as a bathing water in 2021, having been classified as poor for a number of prior years, but in Ofwat's historical data set (to 2023) had been included. The rivers Brue and Parrett both flow into the Bristol Channel just south of the bathing water. Forecast performance for the remainder of AMP7 assumes this bathing water is not included in any calculations. We also do not envisage this bathing water being re-designated ahead of the start of AMP8.

This de-designation was despite us spending more than £35m in/around the local area in AMP6, including adding ultraviolet disinfection for the continuous discharge at Cannington WRC (£3.5m) and on the storm overflow at Highbridge Sewage Pumping Station (£4.5m), in 2018 and 2016 respectively.

At the start of AMP7, we spent a further £12m upgrading the treatment process at West Huntspill WRC, which discharges into the mouth of River Parrett. This upgrade was completed in March 2021, ahead of the December 2021 Water Industry National Environment Programme (WINEP) regulatory date, in order to be fully operational ahead of the 2021 bathing water season, although by this time the bathing water had already been de-designated.

Current factors affecting water quality

The Environment Agency recently undertook Microbial Source Tracking at the designated bathing waters at Weston super Mare, with their briefing note to North Somerset Council from November 2021 included in the insert below:

Briefing note for North Somerset Council meeting 18 November

Background

Microbial source tracking (MST) is a technique used by the Environment Agency to identify sources of bacterial contamination at bathing waters. During 2019 and 2021, samples for MST analysis were collected from the three designated bathing waters at Weston super Mare (Weston Main, Weston Uphill Slipway and Weston Sand Bay). Samples were subsequently analysed for human, ruminant, seabird, dog and horse MST markers. Samples were analysed for the horse MST marker in order to assess if donkeys were a source of contamination of the bathing waters.

Results

The seabird MST marker was detected in all samples analysed and the concentration of this marker was strongly linked to poor quality in the routine bathing water samples. The correlation between the seabird MST marker and one of the indicator bacteria used to classify bathing water quality was particularly strong for samples collected from Weston Main. This suggests that seabird faeces is likely to be a significant source of contamination at this bathing water and may, in part, be responsible for poor compliance.

The human MST marker was also detected in all samples analysed but there was no significant link between this and poor quality in the routine bathing water samples. However, this does not totally discount possible other human sources of contamination as a cause of poor bathing water quality.

The ruminant MST marker was detected intermittently at all sites. This indicates that agricultural sources of contamination are occasionally present at all of the Weston super Mare bathing waters.

The dog MST marker was also detected intermittently at all sites. The frequency of detection was lowest at Weston Main where a dog ban is in place from 1st May to 30th September. This suggests that dog bans are effective in reducing contamination from this source.

The horse MST marker was not detected in any of the samples analysed, although only six samples were analysed for this marker (three from Weston main and three from Weston Sand Bay). Whilst this does not provide any evidence that donkey faeces is a source of contamination at these bathing waters, the sensitivity of the horse MST marker for detecting contamination from donkeys is questionable. Donkey faeces was found on the strandline in the vicinity of Weston Main during surveys undertaken in summer 2021 so there is clearly a risk to bathing water compliance from this source.

Analysis and Reporting Team – November 2021.

Environment Agency, Wessex Area.

We have undertaken similar MST work previously, mainly associated with the Burnham bathing water investigations in AMP5, prior to the AMP6 improvements, with similar conclusions emphasising that discharges from our activities are only a contributory factor to the overall bathing water quality.

We do not deny we have an impact on bathing water quality, but there are a number of sources of bacteria entering rivers from diffuse pollution sources including:

- agricultural and urban run-off
- manure and slurry applications to land
- faeces from farm animals, rodents, wildlife and pets
- discharges from private septic tanks
- runoff from highways and surface water drains
- misconnections (foul drainage from properties incorrectly connected into the surface water system by the homeowner).

Proposed PR24 baseline

Proposed baseline: 85.7%

Rationale: This baseline is taken as the 2022 position, the best performance in the last 3 years, which comprised a total of 47 designated bathing waters (36 rated ‘excellent’, 5 rated ‘good’, 3 rated ‘sufficient’ and 3 rated ‘poor’; i.e. excluding the de-designated Burnham Jetty North).

The PC score based on past worse classifications 2015-2022 is 85.2%, and for 2019-2022 (past 3yrs, excluding 2020 as no samples) is 84.2%. Given the many contributory factors to bathing water quality as described, we believe 85.7% is an appropriate baseline.

We have made significant historical investment to improve our coastal discharges affecting bathing waters. Whilst we continue to make improvements to our continuous and intermittent discharges, we consider that any improvements we make will have a minor influence on bathing water quality, particularly along the Somerset coast as there are so many other more significant influences. We will continue to support the Litter Free Coast and Sea projects in PR24 to provide wider education and guidance to the business and visitor communities at all of our coastal bathing water locations but similarly, this has marginal impact in terms of bathing water quality.

1.15.4. Proposed Performance Commitment Level

Performance commitment level

Considering the rationale set out for our PR24 baseline in section 1.15.3 we propose the following performance commitment level: 85.7%

Table 127 – Propose performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	85.7%	85.7%	85.7%	85.7%	85.7%
Step change in performance from enhanced expenditure	0.0	0.0	0.0	0.0	0.0
Proposed PC level	85.7%	85.7%	85.7%	85.7%	85.7%

In their PR24 Final Methodology, Ofwat advise that the PC assessment is based on designated bathing waters and their classification as at the Final Determination in December 2024, i.e. as per the 2024 bathing water season, with no mid-AMP8 newly designated locations being taken into account.

How will we maintain our service

During regulator engagement with water companies, concerns were raised regarding the deliverability, financeability and customer affordability of PR24. In response, the Secretary of State for the Environment reiterated the need for ambitious investment in the sector and the environment but recognised that this must be balanced with the ability to deliver and finance each project and acknowledged that this might require companies to consider phasing activities from PR24 into future price review periods to enable the prioritisation of labour and materials for the high priority projects.

Notwithstanding a general steer of meeting all statutory requirements and delivering our Storm Overflow Discharge Reduction Plan, the Secretary of State provided a WINEP driver specific steer on designated bathing waters: *"Water companies should focus on improving those that are classified as 'poor' and 'sufficient' for PR24."*

Improving storm overflows is retained at these locations, as included in the PR24 WINEP, however we have proposed to defer a number of other improvements connected with 'good' and 'excellent' bathing waters, in order to prioritise more high priority projects elsewhere in the WINEP. Refer to details on the Price Control Deliverable for Storm Overflows and the associated spreadsheet, along with our Storm Overflow Discharge Reduction Plan, which identifies all overflows included in our PR24 plan for improvement and their relationship to bathing waters.

We will continue to maintain and improve our assets to ensure compliance with any discharge conditions, as well as target a reduction in pollution levels.

We will also continue to support the Litter Free Coast and Sea projects in PR24 to provide wider education and guidance to the business and visitor communities at all of our coastal bathing water locations.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 86.4% in 2050, representing the current P90, however we are targeting 85.7% performance in AMP8.

Table 128 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	85.7%	85.7%	86.4%	86.4%	86.4%	86.4%

We believe targeting this level of performance is in the best interest of customers and the environment. Targeting a higher level risks excessive investment for little guarantee of benefit, given historical spend and that there are many factors beyond water company discharges that influence bathing water quality.

It should be reiterated that this PC assessment is based on designated bathing waters and their classification as at the Final Determination in December 2024, i.e. as per the 2024 bathing water season, with no mid-AMP8 newly designated locations being taken into account. Interest in bathing and recreational use of rivers is increasing throughout the region. Wessex Water (currently) have no designated inland bathing waters, and none forecast for addition during PR24. We have a PR24 WINEP investigation (08WW100014) for real time water quality monitoring of amenity waters, which will involve gathering real time water quality data and making this available to recreational water users and other stakeholders to aid their decision making. The associated monitoring programme will be used to inform and prioritise potential improvements, particularly in the event of applications for new bathing water designations. This is as described and envisaged in our Long Term Delivery Strategy.

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 129 - Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	86.4%	86.4%	86.4%	86.4%	86.4%
Step change in performance from enhanced expenditure	0.0%	0.0%	0.0%	0.0%	0.0%
Total performance	86.4%	86.4%	86.4%	86.4%	86.4%

1.15.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £2.709m outperformance and -£2.709m underperformance payment

Proposed standard ODI rate: £2.709m outperformance and -£2.709m underperformance payment

1.15.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 130 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	78.6%	78.6%	78.6%	78.6%	78.6%

P10 rationale: This P10 figure is based on each designated bathing water being at its worst Ofwat PC classification since 2015.

Five bathing waters have had a poor classification since 2015. This includes three associated with Weston-super-Mare (Weston Main, Weston-super-Mare Sand Bay and Weston-super-Mare Uphill Slipway) which have trended towards poor despite investments made by Wessex Water as described earlier. There is a risk of the designation of new bathing waters between business plan submission and the final determination, with potential classifications of these unknown.

Table 131 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	94.2%	94.2%	94.2%	94.2%	94.2%

P90 rationale: This P90 figure is based on each designated bathing water being at its best classification since 2015.

9 bathing waters have consistently been classified as Excellent. A further 10 have been Excellent and/or Good every year since 2015, but this is quite variable with no obvious trend up or down.

1.16. River water quality (phosphorous) (PR24_RWQ_WSX)

1.16.1. Introduction

The purpose of this river water quality (phosphorus) performance commitment is to incentivise the company to improve water quality in the rivers within its area by reducing the amount of phosphorus entering rivers from water company activities.

This River water quality (phosphorus) PC is new for PR24, although we had two bespoke PCs in AMP7 covering similar aspects:

- "Length of river with improved water quality through WINEP delivery" – This PC was designed to incentivise us to deliver our agreed Water Industry National Environment Programme (WINEP) schemes in a timely manner. Whilst initially proposed by us as a bespoke PC to allow flexibility in how we deliver WINEP schemes (including considering alternative, catchment-based approaches), Ofwat limited this to 'Green' confirmed schemes and their completion dates as of the 31/03/2019 version of the WINEP. This narrowing of the scope effectively made it a duplicate of the 'Delivery of WINEP requirements' PC, but based on an older and subsequently superseded version of the WINEP. This version did not reflect any changes agreed with the Environment Agency, such as programme delays to early AMP7 schemes due to impacts from Covid-19.
- "Km of river improved (non-WINEP)" – We proposed this PC to incentivise us to find and exploit opportunities to improve river quality by further reducing the amount of unwanted nutrients beyond our statutory requirements. Its particular focus was phosphorus in Hampshire Avon and nitrogen in Poole Harbour, where stakeholders agreed there was a need for further improvement, but there was insufficient regulator support – based on legislation and regulatory guidance at the time – for improvement lines in the WINEP.

The AMP8 performance measure is the percentage reduction in phosphorus emissions to river catchments as a result of water company activities when delivering our functions relative to the load of total phosphorus discharged by all wastewater treatment works in the 2020 calendar year baseline.

Phosphorus can be removed at wastewater treatment works and/or through partnerships, including catchment working (otherwise known as catchment nutrient balancing), where, in the course of delivering our functions, we collaborate with others to reduce phosphorus emissions.

$$\text{Percentage reduction in phosphorus emissions} = \frac{(\text{Phosphorus emitted by relevant discharges from treatment works in 2020 minus phosphorus emitted by relevant discharges in the year}) + (\text{Phosphorus prevented from entering rivers from partnership working in the year minus phosphorus prevented from entering rivers from partnership working in 2020})}{\text{The 2020 baseline}}$$

Ofwat consulted with water companies on the introduction of this PC, particularly around the baseline definition – such as whether a 2020 baseline was appropriate or whether using, for example, an average of 3-years was more appropriate – as well as how any measure could be normalised across companies, including recognising different levels of historical phosphorus removal.

PC units: Percentage reduction in phosphorous to two decimal places.

Reporting is annually, on a calendar year basis. For example, performance assessment for 2025-26 will be based on the calendar year 2025, and 2029-30 assessment will be based on the calendar year 2029. Outcome delivery incentives will be applied on a kg of phosphorus basis. The performance commitment levels expressed as percentage reduction will be applied to the 2020 baseline. The difference between this value and the actual reduction will be used to calculate outcome delivery incentives.

1.16.2. Our long-term ambition

2050 target: 80.87%

Phosphorus limits – either permits or stretch targets – at our treatment works are set by the Environment Agency (EA). As with Discharge permit compliance, we aim and work hard to achieve 100% compliance with our phosphorus limits. Any outperformance against limits does, however, need to be balanced by the need to be cost-effective; our bespoke PC for PR19 encouraged us to continue to outperform against phosphorus permit limits particularly in the Hampshire Avon, where otherwise cost savings could be had, such as by reducing chemical dose rates.

The cost-benefit and cost-effectiveness of phosphorus removal decreases as limits tighten. With a significant number of our sites identified to meet the EA-defined ‘technically achievable limit’ (TAL) of 0.25mg/l in AMP8, this represents a 95% reduction in phosphorus at these locations if using a nationally agreed default of 5mg/l for final effluent concentrations for sites without any dedicated phosphorus removal. In reality, a proportion of sites already have phosphorus removal before the 2020 baseline for this PC, particularly those in the Bristol Avon and Hampshire Avon and other large sites affecting designated areas, such as those affecting the Somerset Levels & Moors and Poole Harbour.

We envisage the need for further permit tightening across our region to meet future environmental objectives, but also the opportunity to stretch existing and newly built assets, as well as learn from how us and other water companies perform against the current TAL in PR24, with a lookahead to a potential tightening. Incremental changes in permit limits can, however, lead to inefficient investment, and we would want to avoid replacing newly built assets unless there is sufficient cost-benefit and funding availability to justify a change.

Stretching performance on existing assets does also need to be balanced with other competing priorities including whether it could put other performance commitments at risk, such as Discharge permit compliance for example due to over-dosing of ferric sulphate leading to iron breakthrough and failure of iron discharge permit limits, or by not having sufficient redundancy to allow either frequent or infrequent maintenance activities to be undertaken to their most cost-effective schedule.

1.16.3. Our performance and proposed baseline

Historical performance

The table below reflects our historical performance. For sites with permit changes partway through a year, we have used a proportional approach. We have used all regulatory compliance samples – spot and/or composite as appropriate – or 5mg/l in the absence of a default. For any sites with more than one sample location, for example due to different discharge pipeline locations depending on the season or river flow conditions, we have averaged the individual samples, again to ensure proportionality.

The PC compares performance against a 2020 baseline and, as such, comparing performance prior to 2020 is misleading in considering future performance.

Table 52 – Historical performance

Historical Performance	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
Phosphorus emitted in the latest calendar year from treatment works that had a phosphorus limit (kg/yr)	58,377	57,557	90,818	99,156	80,772	84,348	62,161	139,115	91,458
Phosphorus prevented from entering rivers from partnership working (kg/yr)	0	0	0	0	0	0	52	103	103

The amount of phosphorus discharge fluctuates both as additional sites gain phosphorus limits, but also with more flow requiring treatment during wet years leading to a greater load discharged, even if permit limits are being achieve. There is no consistent PC target, as more-and-more sites gain phosphorus permits in AMP7 and are proposed for to PR24. The table below shows actual and forecast performance for AMP7.

Our current performance

Table 133 – AMP performance

AMP7 Target and Performance	2020-21	2021-22	2022-23	2023-24	2024-25
Overall actual performance					
Phosphorus emitted in the latest calendar year from treatment works that had a phosphorus limit (kg/yr)	99,459	92,490	83,685		
Phosphorus prevented from entering rivers from partnership working (kg/yr)	- 135	- 135	- 654		
Overall actual performance	99,323	92,354	83,031		
Forecast performance					
Phosphorus emitted in the latest calendar year from treatment works that had a phosphorus limit (kg/yr)				76,588	76,588
Phosphorus prevented from entering rivers from partnership working (kg/yr)				- 1,020	- 3,000
Forecast overall performance				75,568	73,588
Reduction in phosphorus as a percentage of load discharged from treatment works in 2020					

Actual Performance	0.00%	1.64%	7.61%		
Forecast				8.88%	9.21%

Note: Prevention through partnership working shown as negative for ease. Loads are also shown to 4 decimal places in the data tables, although this gives a false impression of accuracy for forecast years.

Our first phosphorus removal plant was installed at Pewsey in the Bristol Avon catchment in 2001. By the end of 2020, 68 of our sites had phosphorus removal, with some of these required to meet a tightening of limits by 2025 alongside 49 new sites. Due to the nature of our WRCs we generally employ chemical treatment processes to achieve the amount of phosphorus removal required. We are aware that this is not the most sustainable solution and that the increasing demand for more stringent levels of phosphorus removal will exacerbate this further.

During AMP6 (2015-2020) and AMP7 (2020-25) we have continued to investigate alternative and more sustainable options for meeting the outcomes required by an expanding nutrient removal programme and are continuing this for PR24. Alongside updating river water quality modelling to ensure all investments are based on the best available scientific evidence, we have explored:

Catchment Permitting

Spreading the risk and avoiding excess asset redundancy by targeting stretch permits across several sites within the same catchment, reducing the overall capex and opex, and with less carbon footprint. Our Catchment Permitting trial in the Bristol Avon was the first in the country and following a successful trial in 2017-2020 is now fully implemented. Through adopting this innovative approach, we have been able to remove a comparable amount of phosphorus within the catchment (43tpa) at less than half the capex when compared to the traditional approach (c.£27m compared to c.£58m) and at a lower overall opex. This catchment-wide permitting approach provides flexibility with operational performance at works and minimises the amount of treatment process redundancy (with associated capex and opex costs) required to comply with more rigid targets. Catchment permitting is being expanded into the Parrett & Tone and Dorset Stour catchments at significantly larger scale than any other water company, and we have further proposals in PR24 including for the Hampshire Avon alongside a refinement in the Bristol Avon at sub-catchment scale.

Catchment Nutrient Balancing (CNB) / Partnership Working

Working with farmers to reduce phosphorus and nitrogen run-off from agricultural land to off-set that to be removed by asset solutions at treatment works. Building on the success of decades of working with farmers for nitrate offsetting around our groundwater drinking water sources, this was expanded to offset the need for nitrogen removal assets at Dorchester WRC in AMP6. It was expanded further in AMP7 to the Parrett & Tone and Dorset Stour catchments, to be complimentary to our catchment permitting approaches for phosphorus removal.

A number of elements make up our partnership working profile:

- Brinkworth Brook – We set up a 5 year pilot in June 2017 within the Brinkworth Brook catchment to investigate the potential of catchment nutrient balancing through catchment management to deliver phosphorus reductions that can be used to offset treatment works inputs. The AMP7 elements were included in our PR19 business plan. Whilst no measures have been formally signed off by the EA, in the final report produced for us by Lancaster University in May 2023, they summarised that,
    - *"The work resulted in an overall modelled intervention reduction of ~103 kg phosphorus per year across all the new farm interventions considered in Brinkworth brook.*
    - *The 'field' infrastructure measures reduced total phosphorus transfer by about 7 kg of P per year and the 'farmyard' infrastructure contributed a much larger reduction of about 96 kg of P per year, reflecting the role of infrastructure in the management of manure."*

- Hampshire Avon – We ran a targeted small-scale pilot within the Hampshire Avon during 2020-2022, with an aspiration to contribute towards our PR19 PC 'Km of river improved (non-WINEP)' described earlier, as well as better understand the multiple benefits. Despite multiple other benefits such as biodiversity benefits, carbon sequestration, reduced pesticide and farmer engagement, this only delivered 30kg/y of phosphorus removal with negligible impact on the PC. Given the high unit-cost for phosphorus removal in this location we decided not to continue.
- Parrett & Tone and Dorset Stour – Our PR19 business plan proposed a combination of CNB and catchment permitting to give increased flexibility to achieve the phosphorus load reduction targets. The AMP7 CNB delivery profile aligns with that as agreed with the EA as part of our Operating Techniques Agreement for the trial, targeting load reductions in specific sub-catchments within each of these catchments.

Constructed Wetlands

Habitat creation to encourage the natural removal of phosphorus, as an alternative to investing at smaller WRCs when combined with flexible permitting. Our wetlands at Cromhall WRC built during AMP6 was the first example in the country of using a sustainable alternative to chemical dosing to achieve phosphorus reductions at sewage works. We have been monitoring its performance in AMP7 Cromhall wetland (wessexwater.co.uk). We've since built other wetlands, such as on the river inflow to Durleigh Reservoir and at a number of our groundwater-induced overflows, although none of these are permitted for phosphorus removal.

Proposed PR24 baseline

Proposed baseline: 590,552 kg/yr.in 2020

Rationale: Ofwat have set the baseline as the load of total phosphorus discharged by all wastewater treatment works in the calendar year 2020.

1.16.4. Proposed Performance Commitment Level

Forecast industry performance

This is a new PC and we do not have any historical industry data to compare against. Ofwat provided companies with a historical flow and sample dataset to check as part of their development of this PC, however no revision was made to published industry P10 or P90 ranges following the return of information. We identified a number of discrepancies with the dataset provided to us but have not seen a finalised version to comment on or further interrogate

As described earlier, phosphorus limits – either permits or stretch targets – at treatment works are set by the EA. These are to meet the environmental requirements of the receiving waterbody, as determined by the EA, in consultation with authorities such as Natural England who oversee Sites of Special Scientific Interest. Each water company will have location-specific requirements as well as different levels and timings of historical investment.

The Environment Act 2021 placed a national wastewater target to *"Reduce phosphorus loadings from treated wastewater by 80% by 2038 against a 2020 baseline."* As this target is 80% nationally, the EA accept that there may be variation across companies in their reductions. We are not aware of any published dataset giving targets for each company from 2020, as well as adjusted targets when taking into account any AMP7 improvements.

Localised improvements, such as to meet Habitats Directive or SSSI objectives may require more stringent phosphorus limits than as for the Environment Act. Notably these could be at smaller works where it is comparatively more expensive than reducing phosphorus at a larger works. A number of our sites also fall outside Environment Act catchments, such as some of our estuarine sites directly impacting Poole and Christchurch Harbours.

Performance commitment level

For PR24 we have continued our promotion of catchment and nature-based solutions, and our PR24 business plan includes an alternative approach to delivery of our WINEP nutrient obligations building on the demonstrable and industry-leading success of our AMP6 & 7 investments.

Our PR24 business plan includes an alternative approach to delivery of our WINEP nutrient obligations, including:

- Bristol Avon – Catchment permitting for Water Framework Directive (WFD), at a sub-catchment scale.
    - This is an adaption of an already established approach – which initially ran as a trial 2017-2020 and now is fully implemented – to achieve revised WFD targets identified for PR24.
- Parrett & Tone – Catchment permitting for WFD, at a catchment scale.
    - This includes already agreed Stretch Targets from 1st January 2025.
    - Further tightening of limits at some sites – either through a tightening of this stretch target or a new permit superseding the stretch target, to achieve revised WFD targets identified for PR24.
- Dorset Stour – Catchment permitting for WFD, at a catchment scale.
    - This includes already agreed Stretch Targets from 1st January 2025.
    - Further tightening of limits at some sites – either through a tightening of this stretch target or a new permit superseding the stretch target, to achieve revised WFD targets identified for PR24.
- Hampshire Avon – Catchment permitting for Levelling-up & Regeneration Bill (LURB), at a catchment scale.
    - Equivalent load reduction as that identified through the LURB, but with flexibility on the size of sites allowing a more cost-effective and cost-beneficial approach.

Details of individual sites with their proposed limits and delivery timings are contained in the commentary for CWW19.

In the PC definition, Ofwat define ‘relevant discharges’ is defined as *“discharges of treated waste water from the company's waste water treatment works into freshwaters”.* We have expanded this to include the discharges from Christchurch (into Christchurch Harbour) and Lytchett Minster, Poole & Wareham (into Poole Harbour), to capture their inclusion in this PC. We have also made an assessment of small treatment works with descriptive permits that discharge into freshwaters. These do not have dry weather flow permits and so we have followed a similar methodology to that used as part of our annual reporting of total flow treated (APR table 7C line 13) in estimating their flow from their population equivalent (c. 1,720m^3/d for 97 sites), and combined with a default effluent concentration of 5mg/l this equates to c.3,140kg/yr. This is about 0.5% of the 2020 baseline for all sites. Excluded are any sites discharging to ground via soakaway.

The 2020 baseline total load of phosphorus from all of our wastewater treatment works and covered by this PC (as described above) is 590,552 kg/yr. By comparison, using 2020 flows but on the assumption none of our sites had a discharge permit (and so using a default effluent concentration of 5mg/l), our 2020 baseline would have been over 1,000,000 kg/yr of phosphorus being discharged. This emphasises the historical amount of phosphorus removal we have already done, prior to the baseline of this PC.

The 2020 baseline phosphorus prevented from entering rivers from partnership working is 135.45 kg/yr.

The below table shows our proposed phosphorus reduction profile for AMP8.

Table 134 – Proposed performance commitment level

PR24 Proposed Performance Commitment Level	2025-26	2026-27	2027-28	2028-29	2029-30
Phosphorus emitted in 2020 from treatment works that had a phosphorus limit for the latest calendar year (kg/yr)	360,896	365,377	369,332	382,999	387,293
Phosphorus emitted in the latest calendar year from treatment works that had a phosphorus limit (kg/yr)	98,877	99,917	100,906	101,758	97,028
Change in phosphorus discharged from treatment works (kg/yr)	262,019	265,460	268,426	281,241	290,265
Phosphorus prevented from entering rivers from partnership working (kg/yr)	4,000	4,000	3,000	2,000	1,000
Change in phosphorus prevented from entering rivers from partnership working (kg/yr)	3,865	3,865	2,865	1,865	865
Proposed PC level: Reduction in phosphorus from 2020 (kg/yr)	265,883	269,324	271,290	283,105	291,129
Reduction in phosphorus as a percentage of load discharged from treatment works in 2020 (%)	45.02%	45.61%	45.94%	47.94%	49.30%

For clarity, in 2025-26 we will have 117 WRCs with P permits. In 2020-21 we had 68 WRCs with P permits. Where 50,552kg/yr is the proposed PR24 baseline, and -135kg/yr is the phosphorus prevented from entering from partnership working in 2020-21.

$$\frac{(360{,}896 - 98{,}877) + (4{,}000 - 135)}{590{,}552} = 45.02\%$$

The prior year comparative for phosphorus emitted in 2020 from treatment works that had a phosphorus limit in 2024-25 was 128,122 kg/yr. The significant increase from 2024-25 to 2025-26 by almost a factor of three is due to the number of sites gaining new phosphorus permits by December 2024 or March 2025.

How we will deliver this performance?

Achievement of the PC is based on enhancement expenditure through the WINEP Phosphorus removal programme.

Scheme completions have been profiled as much as possible to meet PR24 WINEP regulatory dates, taking into consideration resources and other priorities across the whole PR24 business plan. Many schemes are complex and will involve land purchase, leading to their implementation later in the AMP8 or phased into AMP9. The AMP9

profile does not included for any schemes starting in AMP9. Where possible, we have advanced schemes within AMP8 and this is shown with the phased delivery.

The Environment Act and LURB require improvements to be made at point-source discharges. Our CNB in the Parrett & Tone and Dorset Stour catchments is thus profiled to phase out as/when localised improvements are implemented and the CNB load is superfluous

We continue to engage with the EA about the use of CNB, but as its load will not be able to contribute to our permit-equivalent we need to ensure any continuation is not cost-prohibitive. The currently tabled ODI rate of £661/kg/yr is at the lower end of our current offsetting costs, especially given the increasing demand from all sectors for carbon and biodiversity credits, and in certain areas nutrient credits as well.

Our document *WSX16 – Waste Water Networks Plus strategy and investment* provides more details of the options considered to meet the various regulatory requirements and aspirations.

We consider the PR24 delivery profile to be realistic given the quantum and type of scales, including the phasing of large and/or complex schemes into AMP9.

As the PC is based on % removal, there is a risk that a 'simple' scheme on a large site with lots of available land could be implemented early in AMP8 to deliver a large load reduction, but overall minimal environmental benefit if it only improves a short section of waterbody. Our delivery profiling has been cognisant of the location of individual sites to prioritise where possible the early delivery of benefits on the receiving environment.

We have been able to achieve many of our historical stretch targets in the Bristol Avon through increased dosing. The current level of existing outperformance cannot be assumed to continue if these stretch targets were to become targets, without investment. Many of these sites require substantive upgrades to ensure sufficient resilience in achieving these limits as permits rather than stretch targets. For some sites with existing limits we are accepting new tightened limits for no / limited investment, albeit at an increased level of risk.

How does this achieve our long-term target?

Our long-term aspiration is to achieve a performance commitment level of 90% in 2050, with the completion of phased PR24 schemes starting in AMP8 but completing in AMP9 contributing towards this target.

Table 135 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	9.21%	49.30%	80.87%	80.87%	80.87%	80.87%

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 136 – Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	45.02%	45.02%	45.02%	45.02%	45.02%
Step change in performance from enhanced expenditure	11.50%	11.53%	12.40%	35.10%	35.85%

Total performance	56.52%	56.55%	57.42%	80.12%	80.87%

As the performance tables only include the enhancement expenditure in AMP8, table OUT1 only reflects the performance from base expenditure in 2030-35.

For clarity, further improvements commencing in AMP8 for delivery in AMP9/10 to meet Environment Act phosphorus reduction targets are not shown in the data table.

1.16.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.0006608m/kg outperformance and -£0.0006608m/kg underperformance payment

Proposed standard ODI rate: £0.0006608m/kg outperformance and -£0.0006608m/kg underperformance payment

We would value the opportunity for further engagement with Ofwat to ensure a consistent dataset and assumptions are used for the basis of this PC.

1.16.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Sites have historically outperformed against their phosphorus permit limits, however with the introduction of stretch targets, increasingly stringent limits and placing existing assets under additional stress and strain beyond their original design intentions (e.g. to tolerate tighter limits, other regulatory pressures on pollutions and discharge compliance etc.), this level of outperformance cannot be expected to be sustained.

The variability of rainfall and the corresponding flow profiles being treated through sites has a huge impact on their performance and load reduction even if sites are meeting their permit limits (measured as a concentration). Limits are set by the EA taking into account both this variability and also an allowance for future growth, and any subsequent deterioration of performance but within the headroom of the permit.

The table below shows two P10 and P90 profiles, taking this into consideration. The four estuarine sites mentioned earlier (Christchurch, Lytchett Minster, Poole & Wareham) have a combined 2020 baseline discharge of c.131,000kg/yr, with none of the sites currently having a phosphorus limit. Thus, the early or late delivery of a single large scheme can significantly affect the profile.

Table 137 – Proposed P10 and P90 profiles for PR24

P10 and P90	2025-26	2026-27	2027-28	2028-29	2029-30
Proposed PC level	265,883	269,324	271,290	283,105	291,129
% reduction	45.02%	45.61%	45.94%	47.94%	49.30%
Proposed P10	246,147	249,088	250,658	261,437	270,483
% reduction	41.68%	42.18%	42.44%	44.27%	45.80%
Proposed P90	290,554	294,619	297,080	310,191	331,889

% reduction	49.20%	49.89%	50.31%	52.53%	56.20%

The confidence grade for historic data is A2, with treatment sites data from regulatory flow monitoring and final effluent sampling (with c.0.5% being from small sites with unmeasured flows) and partnership working from regulator accepted methodologies. The confidence grade for forecasts is B3 with many factors – internal and external – affecting scheme delivery profiles, and the metric heavily dependent on rainfall within any given year.

1.17. Storm overflows (PR24_SOF_WSX)

1.17.1. Introduction

'Storm overflows' is a new common performance commitment for PR24. The purpose of the PC is to drive down the number of discharges from storm overflows to the environment.

The definition was consulted, updated and published on Ofwat's website on 14th June, 2023 (here).

The final definition is the average number of storm overflow discharges (spills using the 12/24 hour rule) using available event duration monitoring (EDM) to the environment data and has an adjustment for unmonitored storm overflows (either not installed or downtime). Unmonitored storm overflows are assumed to have a spill rate of 100 spills a year.

> The average number of spills per storm overflow will be calculated to two decimal places as follows:
>
> $$\frac{Number\ of\ monitored\ spills}{Number\ of\ storm\ overflows} + Unmonitored\ storm\ overflows\ adjustment$$

The definition is dependent on both the EDM coverage and weather. In a wet year the number will be higher than a dry year.

PC units: Average number of discharges (spills counted using 12/24 hour rule = any discharges or spill within the first 12 hours count as 1 discharge, and then any spills in the next 24 hours will count as a 2nd spill etc.)

1.17.2. Our long-term ambition

2050 target: 9.8

The storm overflow discharge reduction plan (SODRP)[11] requires all storm overflows to perform to at least 10 spills per year by 2050. We have 343 storm overflows that perform better than that already (3 year average or longer).

The Drainage and Wastewater Management Plan (DWMP) calculated that with improvements over the next 25 years, we would be in the order of 8 spills/per overflow, but the unmonitored adjustment would bring that to 10 spills (assuming we have 98% uptime). Our customers support the reduction in number of discharges.

Our PR24 plan will start implementing the SODRP targets, not eliminate untreated discharges.

The following sections outlines our performance to date and our proposed performance in 2025-2030 to achieve the SODRP in the most cost-effective manner for customers and the environment.

[11] Government's storm overflow discharge reduction plan (https://www.gov.uk/government/publications/storm-overflows-discharge-reduction-plan), August 2022.

1.17.3. Our performance and proposed baseline

Historical performance

Table 138 – Historical performance and targets

Table heading	2016-17	2017-18	2018-19	2019-20
PC target	n/a	n/a	n/a	n/a
Performance from base expenditure	88.91	85.05	79.68	72.84
Performance from enhanced expenditure	0	0	0	0.50
Overall performance	88.91	85.05	79.68	72.34

Data prior to 2016 is not available, as it was not reported annually to the Environment Agency.

The returns from 2016/17 to 2019/20 are dominated by the **unmonitored adjustment**, as few sites had EDM installed.

Any physical improvement schemes are not significant in comparison to the unmonitored adjustment. WINEP enhancement hydraulic interventions were undertaken in Bristol in AMP5 (2010 to 2015) and in Bridgwater in AMP6 (2015 to 2020), which will be reflected in the recent EDM returns. The reduction in discharge count from the AMP7 improvements is 660, which reduced the metric by 0.51 through enhancement. The AMP6 investment was a similar level, so it is assumed that 0.50 enhancement benefit was achieved in AMP6, in the above table.

Our current performance

Table 139 – PR24 target and performance

Table heading	2020-21	2021-22	2022-23	2023-24	2024-25
PR24 target	n/a	n/a	n/a	n/a	n/a
Performance from base expenditure	52.03	38.85	27.18	27.70	27.70
Performance from enhanced expenditure	0	0	0	-1.69	-1.69
Overall actual performance	52.03	38.85	27.18		
Forecast overall performance				26.01	26.01

The value of 26.01 used in 2023/24 and 2024/25 is the 5 year average score, assuming full EDM, with a 2% downtime unmonitored adjustment.

Proposed PR24 baseline

Proposed baseline: 23.50

Rationale: We have used the 5 year average value of 26.01 minus the improvements of AMP7 schemes which reduces the average to 25.50. We have also used the Ofwat 100% uptime, although we think that is unrealistic as we have the highest uptime of 98%. Reaching 100% is not realistic for this number of assets that are scattered around the region, often in locations with poor telecommunications.

Technology reasons why 100% uptime is not appropriate are given below:

- Data archiving fault in telemetry system PRISM (getting rarer).
    - These can be fixed via a simple IT ticket and they are easy to spot once the sites are added to StormHarvester. Hopefully we should have nearly all the EDM sites on StormHarvester by the end of the year, the outstanding sites will be the most recent or yet-to-be-installed AMP7 sites.
- Site communications fault (not common)
    - A physical fault on a site. Operations teams fix these pretty quickly.
- Deliberate isolations (a couple of sites per year)
    - When the power supply of the EDM equipment is shared with an electro-mechanical asset (e.g. a powered screen), when the screen is removed for maintenance, the EDM equipment may be isolated (turned-off) as well.
- Battery-powered logger failures (the majority)
    - Either an intermittent failure where signal is bad or an object is placed on top of the antenna e.g. car, building material. These can fix themselves but I'm nearing the end of a programme to improve the communications performance at the least reliable sites.
- Or else an equipment fault/failure where a contractor maintenance visit is required.
    - The biggest effect (after improving so many sites) is getting contractors to site quickly. Getting the remaining 19 sites out of the road (see below) will remove the last difficult sites.

In terms of improvement plans:

- By March 2024, the remaining 19 Cellos (battery-powered loggers) in the roads will be moved to the pavement or verge. This will make them less prone to failure and easier & quicker to repair.
- We expect to complete communications improvements at around 10 sites by March 2024 - with a further 1-2 sites per year that need some improvement work.
- All EDM sites will be added to StormHarvester. This will give us a missing data/sensor health-check capability for all the sites.

However, even with these improvements, remaining at 98% uptime will still be challenging given the technological constraints outlined above. We disagree that we should be penalised for being less than 98%.

In AMP7 we are investing c£15m at 13 frequent spilling overflows and providing storage at a bathing water site which will cost a further c£10m. An average future discharge performance of 17 times per year has been assumed for these improvements, as the AMP7 target Wessex Water used was 15 to 20 discharges per year. This lowered the discharge count by 660.

Table 140 - Annual EDM data scaled up to assume full EDM coverage (with 2% unmonitored operational data)

Storm overflows	Unit	2018	2019	2020	2021	2022	5 year Average
Total number of spills (12/24 method) (hypothetical)	Number	27444	34567	39888	29061	23894	30,310 (30971-660)
Total number of storm overflows monitored (hypothetical)	Number	1,290	1,290	1,290	1,290	1,290	1,290
% unmonitored (downtime)	Percent	0.98	0.98	0.98	0.98	0.98	0.98
Total number of storm overflows	Number	1,290	1,290	1,290	1,290	1,290	1,290
Total unmonitored spills	Number	2,580	2,580	2,580	2,580	2,580	2,580
Storm overflows PC (hypothetical)	Average number of spills per overflow	23.27	28.80	32.92	24.53	20.52	25.50 (was 26.01 before AMP7 improvement adjustment)

Assuming a 100% uplift reduces the 5 year average from 25.50 to 23.50. We propose that 25.50 is our PC for AMP8 years 1 and 2 but have completed the OUT5 table using Ofwat's 100% uptime. Similarly in future years, which have a lower score following improvement works, the extra 2 points (that 98% uptime will add) should be added to the value in the OUT5 table.

This is a small sample set, considering the variability of rainfall. 2020 was a relatively wet year, but not as wet as 2013/14. We do not have sufficient EDM data from 2014. So, although we have 2020 as our worst case P10, it could be an underestimate.

The total number of storm overflows used is 1290. This was taken from our SOAP return, submitted to Defra in August 2023. This includes 8 unpermitted overflows but could exclude more (c10) unpermitted overflow that are currently being investigated, if found to be storm overflows. This would reduce the metric by less than 1% to 25.34. The July SOAP contained was 1296 storm overflows but was updated to 1290 in the September issue of the SOAP. This is because of 6 duplicates identified – these occurred at pumping stations that 'share' a storm overflow discharge. So, although there is only one storm overflow at each pair, the SPS permits both mention the overflow, so appeared on our draft SOAP twice.

1.17.4. Proposed Performance Commitment Level

Forecast industry performance

This metric is new and now we have good EDM coverage will be dependent on weather and groundwater conditions in the report year.

Data for industry performance analysis is not available as this is a new metric.

Performance commitment level

We propose the following performance commitment levels:

Table 141 – Proposed performance commitment level (128 improvements) (100% uptime)

Table heading	2025-26	2026-27	2027-28	2028-29	2029-30
Baseline Performance	23.50	23.50	23.50	23.50	23.50
Performance improvement from enhanced expenditure	-	-	-0.68	-1.36	-2.37
Proposed PC level	23.50	23.50	22.82	22.14	21.13

Our base expenditure for AMP8 is no more than in AMP7 as we are already maintaining our assets. So the baseline remains constant in AMP8 and AMP9.

Rationale for PC level:

- Proposed PC level starting point is the 5 year average taking the reductions from the AMP7 improvements into account (see section 1.3.3)
- Proposed end AMP8 PC level is the starting point minus the estimated reduction for improving the improvement scheme constructed 2025/26 to 2028/29. This profile assumes a 20%, 40%, and 70% of the benefits from improving the storm overflows by AMP8 years 3, 4 and 5.
- Full benefits of the AMP8 storm overflow improvement schemes are taken into account by AMP9 year 1. For AMP9 we applied the same reduction as AMP8.

The reduction in PC for wet and dry year for the sites we are improving in AMP8, assumes we bring them to the following target discharges per year, depending on the sensitivity of their discharge environments:

BW Bathing water target	**9**
RCK Chalk stream target	**5**
Sensitive env other target	**8**
Frequency only target	**10**
RNAG target	**9**

The above assumes the proposed 128 storm overflow improvement programme is confirmed.

The draft WINEP had 148 improvements at a cost of c£550m. In July Wessex Water proposed to defer 48 of the 148 WINEP schemes, due to affordability, financeability and deliverability constraints. This was proposed to the Environment Agency and Defra in the last week of July2023. Defra / EA did not accept that proposal as it was seen

as not achieving the SODRP targets. So, a compromise is included in our PR24 plan which does achieve the SODRP (2022 issue) targets. This includes 128 improvements at a cost of c£400m.

The following table summarises the PC score.
The schemes that produced the most benefit were the wetland schemes to treat groundwater induced discharges.

Table 142 – Performance commitment at the start of AMP8 and AMP9

Improvements	Discharge count Start of AMP8	Discharge count start of AMP9	PC start of AMP8	PC start of AMP9
PR24 plan of 128 SO improvements	30,310	26649	23.50	20.11

The profile is flat in AMP9 but there is a step change from 2024-25 to 25-26 to account for the enhancement expenditure in 2024-25.

How we will deliver this step change

Rationale: This programme includes 128 storm overflow improvements at a cost of c£400m. The £400m is the maximum investment that we could afford in AMP8 due to all the PR24 business plan requirements. We could not undertake everything due to affordability, financeability and buildability reasons. The costs exclude storm overflow investigations, infiltration sealing upstream of storm overflows and continuous water quality monitoring.

As mentioned above this is smaller than the draft WINEP prepared in July 2023, which contained 148 improvements. This was changed following the phasing letter from the Environment Agency, dated 5 July 2023. We proposed to defer 20 storm overflow improvements off the WINEP for AMP8 into AMP9 delivery (leaving 128 improvements in AMP8). This was on the grounds of financeability and affordability of our entire PR24 plan. This included deferring some challenging improvements, which would also be extremely difficult to deliver by 2030.

The AMP8 programme is still under discussion between Defra, EA and Ofwat. The WINEP has not been finalised, and so our plan is subject to change.

The following table shows the proposed number of storm overflow improvements (intended to reduce discharge frequency) per AMP.

Table 143 – Number of storm overflow improvements

Storm overflow improvements	AMP7	AMP8	AMP9	AMP10	AMP11	AMP12	Total
Bathing & shellfish waters improvements	3	25	13	0	0	0	**41**
High priority environmental improvements (including recreatio	8	98	140	25	0	0	**271**
Improvements for frequency (10 discharges/year)	6	5	21	104	142	140	**418**
Total SO improvements in AMP	**17**	**128**	**174**	**129**	**142**	**140**	**730**
Fine screens only	0	0	1	87	99	98	**285**
Unknowns and those discharging less than 10 per year							275

The above table shows that a step change is needed from AMP7 to AMP8 and also AMP8 to AMP9. AMP9 contains a high delivery number to achieve the 75% target stated in the SODRP[12]. This target is to improve 75% of all improvements at high priority environments by 2035. The government updated the SODRP on 25 September 2023. There are no major changes to our plan as a result of the update because Wessex Water correctly interpreted the intention of the August 2022 SODRP.

We have already begun preparing to achieve this step change, by informing our entire business of the requirements, so that all departments can be suitably resourced both internally and externally. Optioneering work has begun. Where our computer models need improving to better match EDM data, we have commissioned new flow surveys to allow verification of the models at 34 storm overflows.

We have also started to detailed design to deliver some of the wetland solutions early. For example, we are aiming to construct the Bulbury Lane wetland next year, as part of our ambition to reduce discharges by 25% compared to the 2020 return. The AMP8 programme include 36 nature based wetland solutions. These are our proposed solution where the overflows are primarily operating because seasonal groundwater is entering our assets and also private assets. These discharges are very diluted, so we are confident wetland solutions will be appropriate, and we will not need to report these treated discharges as EDM discharges.

We have generally selected attenuation solutions which are more deliverable than sustainable solutions in the time available.

Also see CWW20 and commentary, and our documents WSX16 – Wastewater Networks Plus strategy and investment, the DWMP (WSX60) and our LTDS (WSX03).

How does this achieve our long-term target?

Our AMP8 investment is the start of a journey to achieve a performance commitment level of below 10.0 by 2050, as detailed in our DWMP and LTDS. Our strategic direction statement currently states that we will eliminate untreated discharge by 2050 and is included as an adaptive pathway from the core plan. The core plan will achieve the SODRP targets, not elimination of untreated discharges.
Please also see the profile of delivery in the above section.

[12] Storm overflows discharge reduction plan - GOV.UK (www.gov.uk)

Table 144 - Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	21.12	20.12	20.48	20.18	19.18
Performance from enhanced expenditure	-1.01	-0.35	-1.05	-1.76	-2.46
Proposed PC level	20.11	19.77	19.43	18.42	16.72

The proposed profile of performance to 2050 is as follows.

Table 145 – Proposed performance 2035-2050

	2034-35	2039-40	2044-45	2049-50
Performance from base expenditure	19.18	16.72	12.48	10.23
Performance from enhanced expenditure	2.46	4.24	2.04	0.47
Proposed PC level	16.72	12.48	10.44	9.76

1.17.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.777m outperformance and -£0.777m underperformance payment

Proposed standard ODI rate: £0.777m outperformance and -£0.777m underperformance payment

1.17.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

The basis for setting the P10/P90 is the actual performance over the past 5 years as shown in the table below:

Table 146 – 5 year historic performance

	2018-19	2019-20	2020-21	2021-22	2022-23
Storm overflow PC	23.27	28.80	32.92	24.53	20.52

Table 147 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	33.00	33.00	32.32	31.65	30.63

P10 rationale: The starting point is based on the largest annual score over the past 5 years. This is from the 2020 return, which was a wet year, although not as wet as 2013. Future years have been reduced to reflect the enhancement improvements.

Table 148 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	20.50	20.50	19.82	19.15	18.13

P90 rationale: The starting point is based on the smallest annual score over the past 5 years. This is from the 2022 return, which was a dry year. Future years have been reduced to reflect the enhancement improvements.

1.18. Mains repairs (PR24_MRP_WSX)

1.18.1. Introduction

The purpose of this common performance commitment is to incentivise companies to maintain and improve the asset health of the below ground water mains network and demonstrate their commitment to its long term asset stewardship for the benefit of current and future generations.

This is an existing PR19 mandatory PC with a common reporting methodology, and there have been no material changes to the definition for PR24.

PC units: Number of repairs per 1000km of mains per year

The number of mains repairs completed per year per thousand kilometres of water mains (mains only, excluding communication and supply pipes), ie number of repairs per year normalised to enable comparison between companies.

1.18.2. Our long-term ambition

2050 target: Maintain stable asset health - score of 179.0

At the heart of our Strategic Direction Statement (SDS) are eight outcomes, all co-created with stakeholders, all focused on long-term ambition.

Safe and reliable water supply is one of these outcomes, and maintaining and improving the asset health of our below ground water mains network is key to achieving this outcome. Our customers rated the safe and reliable water supply outcome 1st in their relative ranking,

Balancing these outcomes and meeting long term expectations to reduce leakage and reduce customer contacts about water quality, we anticipate mains repairs stabilising over the long term at under 180 repairs per 1000km of mains per year as detailed in our long term delivery strategy (LTDS).

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.18.3. Our performance and proposed baseline

Historical performance

Table 149 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target Nr* Rate	1,655 143.2 <1,867 <161.5	1,655 142.5 <1,867 <160.8	1,655 142.1 <1,867 <160.3	1,655 141.6 <1,867 <159.7	<1,993 <169.4	<1,993 <167.6	<1,993 <167.0	<1,993 <166.4	<1,993 <165.7
Performance from base expenditure	151.4	144.5	152.7	161.9	141.4	156.6	160.9	161.9	148.2

Step change in performance from enhanced expenditure	0	0	0	0	0	0	0	0	0
Overall performance	151.4	144.5	152.7	161.9	141.4	156.6	160.9	161.9	148.2

In our PR09 Final Determination (Supplementary Report Table 2.1.2a Water infrastructure reference levels) the total bursts (bursts/repairs, the terms are interchangeable) reference level was set at 1,655 repairs, with a higher control limit of 1,867 repairs.

In our PR14 Final Determination our committed performance level was set at less than 1,993 bursts per year.

Mains bursts/repairs target levels have historically been set at a company level due to company specific explanatory factors which make an industry level upper quartile approach not appropriate. Historical explanatory factors include the age profile of mains, ground conditions and expenditure since privatisation to meet performance levels.

There are also a number of recent factors influencing our below ground water mains network; with leakage reduction targets and the weather being the most significant.

As can be seen from above our PR14 target level was set above the previous PR09 levels in recognition of our company specific explanatory factors.

Our current performance

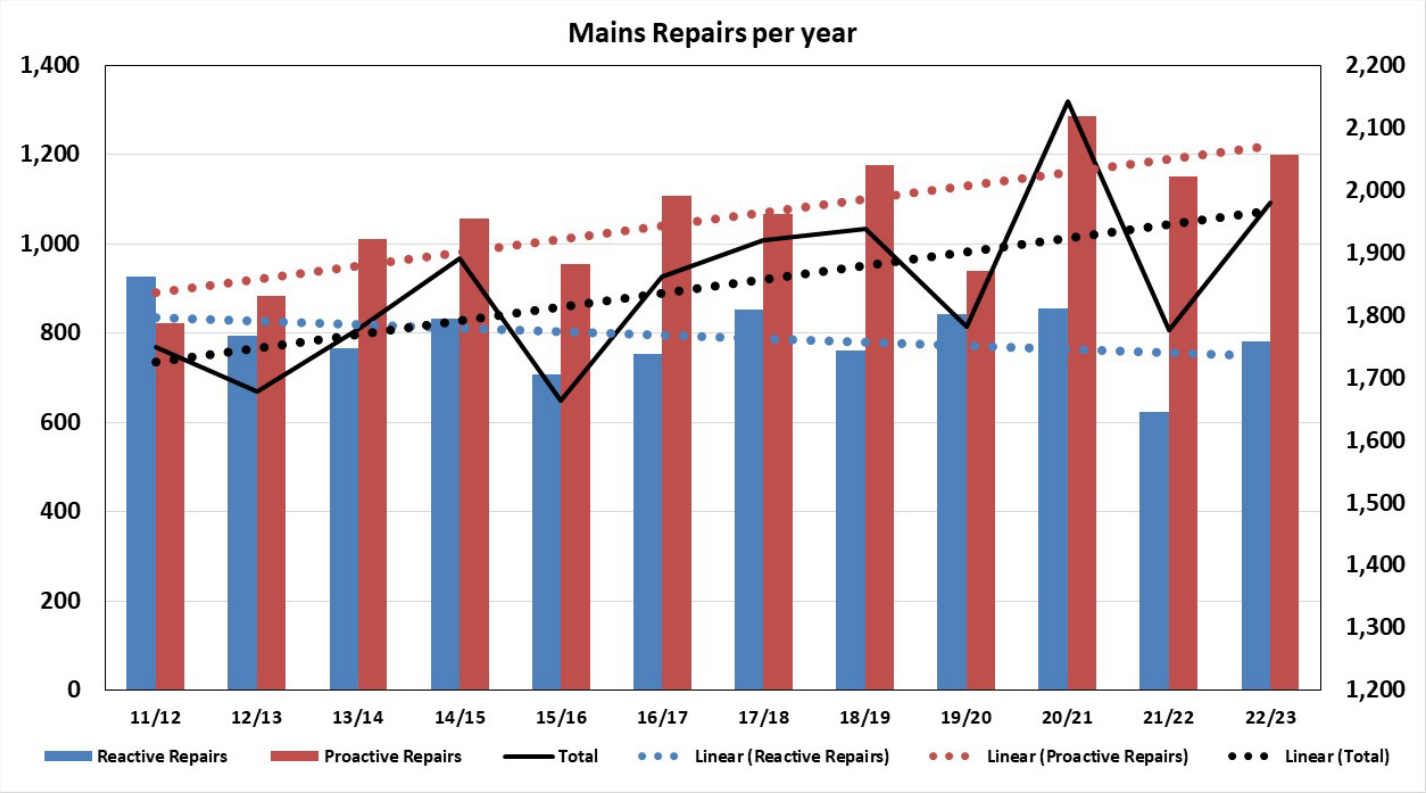
Table 150 – PR19 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	161.4	159.1	156.9	154.6	152.4
Performance from base expenditure	177.7	147.1	163.5	164.0	164.7
Step change in performance from enhanced expenditure	0	0	0	0	0
Overall actual performance	177.7	147.1	163.5		
Forecast overall performance				164.0	164.7

We did not agree with the PR19 target in the final determination; specifically, that it did not reflect the increase in proactive (detected) repairs needed to meet our leakage reduction target as detailed in our PR19 business plan Appendix 14 - The link between leakage and bursts.

As shown in Figure 21 below, as we have reduced leakage over the years the number of reactive repairs has reduced, and the number of proactive repairs has increased as have the total number of repairs. Leakage has been driven down lower and lower through a number of policies and strategies; of which increased Active Leakage Control (ALC) has been central, ie. employing more and more leakage inspectors to go out and detect more and more leaks.

Figure 24 – Proactive and reactive mains repairs over time



We have driven down the three year average leakage from 79.3Ml/d in 2011/12 to 66.5Ml/d in 2022/23.

Hence this increase in repairs is partly as a direct result of least cost short term actions to meet leakage reduction targets and not solely indicative of an underlying deterioration of asset health.

We have seen significant variation in the number of repairs in recent years, and the very high value reported in 2020-21. As noted in our APR21 commentary at the time this high value was due to a combination of factors including:

- The number of repairs in the previous year 2019-20 being lower than expected as we experienced a very stable network without any major shocks (cold weather freeze thaw or hot weather ground shrinkage) and hence a number of weak spots did not fail in 2019-20 but were susceptible to failure at the next shock
- As seen across the industry, the cold weather in January 2021 resulted in an exceptional number of mains repairs required, in part to the above.
- In order to ensure delivery of our leakage reduction target we significantly increased the number of leakage inspectors resulting in an increase in the number of proactive repairs in 2020-21

Proposed PR24 baseline

Our proposed PR24 baseline is the same as our proposed PCL shown below and is based on an increase in repairs needed to meet our leakage reduction target given that our proposed increase in proactive mains replacement will not have a material impact within the next five year period.

1.18.4. Proposed Performance Commitment Level

Performance commitment level

Our proposed PCL shown below is based on an increase in repairs needed to meet our leakage reduction target given that our proposed increase in proactive mains replacement will not have a material impact within the next five year period.

Table 151 – Proposed performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	168.8	170.4	170.8	171.1	171.4
Step change in performance from enhanced expenditure	0	0	0	0	0
Proposed PC level	168.8	170.4	170.8	171.1	171.4

As shown below this forecast is based on a continuation of our recent historic trend with the number of reactive repairs reducing, but the number of proactive repairs needed to meet leakage reduction targets increasing by slightly more resulting in an overall small rising trend in the total number of repairs.

Table 152 – reactive and proactive breakdown of proposed PCL

	2025-26	2026-27	2027-28	2028-29	2029-30
Mains repairs per 1000km-reactive	62.5	61.9	61.4	60.8	60.3
Mains repairs per 1000km - proactive	106.3	108.4	109.4	110.3	111.1

How will we maintain our service

Our plan to maintain service is based on number of key underlying assumptions:

- Our proposed increase in proactive mains replacement from 0.23% in AMP7 to 0.4% in AMP8 while a significant step forward, will not have any material impact on the number of mains repairs in AMP8, and it will take more than five years of sustained higher levels of activity before we start to see the impact on the number of mains repairs
- We will have a significant leakage reduction target in AMP8 and beyond as we aim for the aspiration long term target to reduce leakage by 50% by 2050 (from 17/18 levels). This leakage reduction will lead to an increase in the total number of repairs, with the number of proactive repairs rising and a smaller reduction in reactive repairs
- Our AMP8 mains repairs forecast is taken from our Table CW19 “Demand management - Leakage expenditure and activities” data
- For AMP9 we forecast the number of reactive repairs will plateau and the number of proactive repairs will continue to rise

- For AMP9 and AMP10 we may need to further increase our level of proactive mains replacement to 0.6% and 0.8% respectively to achieve our long term target of <180 repairs per year per 1000km
- There are a number of factors that can impact future mains repairs; and we have been surprised by the scale of variance in the numbers in recent years caused by periods of extreme weather followed by periods of calmer conditions

How does this achieve our long-term target?

Our long-term aspiration is to achieve stable asset health and a performance commitment level of <180 repairs per year per 1000km in 2050 and achieve leakage reduction and customer contacts about water quality reduction target whist keeping bills affordable and achieve our net zero carbon outcome as detailed above.

Table 153 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	164.8	171.4	175.6	178.0	179.0	179.0

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 154 – Proposed performance 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	173.4	174.6	175.0	175.3	175.6
Step change in performance from enhanced expenditure	0	0	0	0	0
Total performance	173.4	174.6	175.0	175.3	175.6

1.18.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.105m outperformance and -£0.105m underperformance payment

Proposed standard ODI rate: £0.105m outperformance and -£0.105m underperformance payment

1.18.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 155 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	*216*	*216*	*216*	*216*	*216*

P10 rationale: Based on proposed upper target level (180) with variance recorded between actual data 2020/21 to 2021/22 (+20%) representing reasonable worst case weather scenario

Table 156 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	145	145	145	145	145

P90 rationale: Based on just under the lowest actual value recorded in recent years, 147.1 in 2021/22 representing reasonable best case for a stable network, and with current and future leakage reduction targets likely to increase the total number of repairs required and hence even in a very stable year it is very unlikely we will ever fall below this level again.

1.19. Unplanned outage (PR24_UNO_WSX)

1.19.1. Introduction

The purpose of the unplanned outage performance commitment is to incentivise the company to appropriately maintain and improve the asset health of our above ground supply production assets.

Unplanned outage is an existing AMP7 PC, however there will be one major change in PR24.

The PR19 methodology for unplanned outage excluded outages as a result of raw water quality. We think this was appropriate as the purpose of the measure was to quantify the asset health of our supply production assets. The PR24 definition removes the exclusion for raw water quality outages. We have said that raw water quality events should continue as an exclusion for the PR24 performance commitment definition. If raw water quality is not excluded, we would expect the performance commitment level to be based on back calculated data that includes the impact of raw water quality events.

The PC is measured by calculating the percentage of peak week production capacity. This is derived by adding the unplanned outages in the year and dividing by the annually calculated peak week production capacity.

PC units: Percentage of peak week production capacity, reported to two decimal places.

1.19.2. Our long-term ambition

2050 target: 5.02%

We have considered potential catchment activities planned in the WINEP to 2050 in making this assessment. Four of our sites that have repeatedly contributed to raw water quality in this metric (PR24 definition) do come up on the list of enhancement catchment management activities in the WINEP. These sites are Friar Wadden, Belhuish, Milbourn St Andrew and Fonthill Bishop. However, benefits from catchment management activities are uncertain and there are potentially larger environmental factors and climate change factors that would cause an increase in unplanned outage that would outweigh these potential benefits.

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The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.19.3. Our performance and proposed baseline

Historical performance

Table 157 – Historical performance and targets

	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Performance from base expenditure	2.51	1.86	1.07	2.37	1.03	0.61	0.58	1.94	1.46

(PR19 definition)									
Performance from base expenditure (PR24 definition)	5.02	6.28	7.13	7.04	4.93	2.91	1.54	3.49	5.11
Step change in performance from enhanced expenditure	-	-	-	-	-	-	-	-	-
Overall performance (PR19 definition)	2.51	1.86	1.07	2.37	1.03	0.61	0.58	1.94	1.46
Overall performance (PR24 definition)	5.02	6.28	7.13	7.04	4.93	2.91	1.54	3.49	5.11

For our AMP6 interventions the aim was to maintain good performance. No specific interventions for this PC were implemented in AMP5&6. During this time, we chose to focus on developing our integrated network (GRID) to improve our resilience in supply provision. The GRID project involved over 50 individual schemes with investment of £230M over eight years between 2010 and 2018. It has not just included investment in traditional asset infrastructure, but also investment in innovative technology, referred to as “The optimiser”, which models the operation of the GRID and calculates the best way to operate the network to ensure the resilient operation of our water supply system.

The benefits of the GRID are that we have additional flexibility with our water resources and additional resilience. This means that we can ensure unplanned outages do not impact our customers.

We consider our asset health to be good, based on the PR19 definition. We have consistently met the performance commitment target throughout AMP5, 6 and 7.

Our current performance

Table 158 – PR19 target and performance

	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	2.34	2.34	2.34	2.34	2.34
Performance from base expenditure (PR 19 definition)	0.57	1.59	0.76	<2.34	<2.34

Performance from base expenditure (PR 24 definition)	4.62	4.97	5.46	5.02	5.02
Step change in performance from enhanced expenditure	-	-	-	-	-
Overall actual performance (PR19 definition)	0.57	1.59	0.76		
Overall actual performance (PR24 definition)	4.62	4.97	5.46		
Forecast overall performance (PR19 definition)				<2.34	<2.34
Forecast overall performance (PR24 definition)				5.02	5.02

We have not adopted any specific interventions for this PC in AMP7 and not proactively targeted improvements to performance, primarily due to past outperformance. Instead, we chose to invest in our integrated network rather than focussing on raw water quality and water treatment centres specifically. We have therefore increased our resilience and ability to maintain supplies to our customers.

A flat PC target of operational outage less than 2% of total design capacity was forecast for AMP7, based on maintaining our unplanned outage at a level below the worst case over the previous ten years. A common PC target was set at 2.34%. We are forecasting to be within the PC target for 2023/24 and 2024/25 based on our average performance this AMP to date. Throughout AMP7 we have achieved this target.

The following graph shows our historical and current performance in the context of the wider industry. It is not feasible to determine one specific best practice approach for this metric, as each individual company will have a different set of circumstances regarding their water sources and treatment provision.

1.19.4. Proposed Performance Commitment Level

Proposed PR24 baseline

Proposed baseline is 5.02%, based on PR24 definition of Unplanned Outage. The PR24 definition now does not include exclusions for raw water quality outside of the treatment works capacity to treat, therefore raw water quality outages will now be included in the metric for this PC, when they are outside our treatment capability. Including this category in the metric for this PC does not reflect asset health in our view. Contributors to this category are primarily from catchment activities and the weather. There will always be uncontrolled contributions from these factors given that we have groundwater assets that contribute 80% to our supply volume.

We do not believe a static target of 5.02% reflects poor performance. The rationale for our proposed PR24 baseline is that it is based on the past three-year average performance (back-calculated for the PR24 definition), where no customers have had supplies restricted, and we've been able to meet peak demands with headroom available and continue a programme of planned outages to improve our resilience. The baseline is not directly comparable with the PR19 Y5 FD as the metric definition has changed and now includes raw water quality unplanned outages.

We are not proposing any improvements from base for PR24. This is because we are aiming to maintain a stable position. We have chosen to invest in our integrated network (GRID) rather than focussing on raw water quality and

water treatment centres specifically. The GRID allows us to make routine planned maintenance to maintain our assets in good condition whilst meeting demand. It also means our network resilience is such that our customers our not impacted by unplanned outages, including raw water quality ones. This can be demonstrated by our consistently high CRI and supply interruptions performance.

Wessex Water have 80% contribution from groundwater sources. The work we have done on our GRID means that as we face raw water quality issues at sites where there is no suitable treatment (will contribute to the metric in AMP8) we have enough resilience to allow these sites to be taken out of service, whilst maintaining our water supply provision to our customers. We actively and strategically manage our water supply system by taking the sites affected by raw water quality in the winter months out of supply, but these are categorised as unplanned outages (category D) currently. They cannot be categorised as planned outages because, as per the PC definition, they are not to enable maintenance or capital works to be completed but are purely a strategic decision in the whole management of our GRID. We have enough resilience in our network to maintain supplies to our customers during these periods.

Investment in additional water treatment centres would not be the best option for our customers or the environment. New water treatment centres have high Capex (up to £20M) and Opex (up to £1m) costs as well as high environmental cost in their carbon footprint from concrete and chemicals etc. A review of our sites that are prone to having unplanned outages based on category D raw water quality (e.g. Milbourne St Andrew and Belhuish that frequently go out on high nitrate and Friar Wadden and Rodbourne that frequently go out on high turbidity) indicated that for a 1% reduction against the metric treatment at three sites would be required at an estimated capex of £32M and opex of £1.3M p.a.

There are no other drivers for this PC. There is no environmental benefit of any of these potential schemes. Improving this metric doesn't benefit our customers as we currently have a resilient network to allow for these unplanned outages that don't result in interruptions to our customers.

Instead, we are actively exploring nature based solutions in our catchments that are affected by raw water quality problems as our preferred option. It is likely that some options to improve this metric (the contribution from category D raw water quality) will be included in WRMP29 as there may be some supply demand balance benefits.

Performance commitment level

Considering the rationale set out for our PR24 baseline in section 1.19.3 we propose the following performance commitment level:

Table 159 – Propose performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	5.02%	5.02%	5.02%	5.02%	5.02%
Step change in performance from enhanced expenditure	-	-	-	-	-
Proposed PC level	5.02%	5.02%	5.02%	5.02%	5.02%

How we will we maintain our service

There are no specific interventions planned for AMP8 to improve our level of service for this PC. We aim to continue to maintain our assets with planned maintenance to allow enough resilience in our GRID to manage unplanned outages (including those from raw water quality) without interruptions to customer supplies, as we have done in AMP7. As explained in 1.19.4, investing in new raw water treatment centres to reduce the contribution to unplanned outage from raw water quality problems is not cost effective.

On this basis our proposed target to 2050 is flat.

Table 160 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	5.02	5.02	5.02	5.02	5.02	5.02

This profile of performance is in the best interest of customers because it doesn't include unnecessary spend on treatment options that don't benefit our customers and have an environmental cost in build and maintenance. We have built up a resilient integrated network that means there is no customer or environmental benefit of investing in the schemes going in to AMP8.

This results in the following performance profile in 2030-35 to support our 2050 target.

Table 161 – Performance profile 2030-2035

	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	5.02%	5.02%	5.02%	5.02%	5.02%
Step change in performance from enhanced expenditure	-	-	-	-	-
Total performance	5.02%	5.02%	5.02%	5.02%	5.02%

1.19.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments.

Ofwat standard ODI rate: £0.700m outperformance and -£0.700m underperformance payment

Proposed standard ODI rate: £0.700m outperformance and -£0.700m underperformance payment

The purpose of ODI's is to align the interests of companies and their investors with the interests of customers and the environment by directly linking performance with expected financial returns. In addition, the interests of companies, customers and the environment should be achieved in the context of best value for all parties. In the case of unplanned outage, there is minimal to no environmental impact and customers interests predominantly relate to supply interruptions. To ensure all parties interests are met, we have reviewed the best value options and chosen to invest in our network to ensure customers are not impacted by unplanned outages at water treatment centres. As such, we expect the ODI for this performance commitment to be zero. This supports the approach we have been proposing for the past two years to focus on outcomes and the customer and environmental service

impacts of our activities as any impact to customers is captured elsewhere and we do not expect to be penalised for applying best value principles.

1.19.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 162 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	*7.04%*	*7.04%*	*7.04%*	*7.04%*	*7.04%*

Table 163 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	2.91%	2.91%	2.91%	2.91%	2.91%

Rationale: In PR19 our rational for P10 was to take the worst historical performance and for P90 was to take the best historical performance. This was chosen as a conservative view of the stable asset health that could be maintained while preserving service to customers. Whilst we still maintain that position, as have chosen to select the second worst case historical year for the PR24 P10 and the second best case historical year for the PR24 P90. This is because the data set has a large spread in performance, due to the range in contribution from raw water category. By taking the second worst and second best historical performance we are removing any potential outliers in the small dataset. On this basis the second worst historical year (back calculated for the PR24 definition) was 2014/15 with 7.04% unplanned outage, with 4.67% would have been from raw water quality. The second best historical year (back calculated for the PR24 definition) was 2016/17 with 2.91% unplanned outage, with 2.3% from raw water quality.

1.20. Sewer collapses (PR24_SCO_WSX)

1.20.1. Introduction

'Sewer Collapses' is an existing common performance commitment from AMP7.

This performance commitment is designed to incentivise the company to appropriately maintain and improve the asset health of its infrastructure or below-ground wastewater assets and demonstrate its commitment to its asset stewardship responsibility. It also helps to ensure that the overall asset health of the below-ground wastewater assets is maintained and improved for the benefit of current and future generations and the environment.

Two changes have occurred in the definition in AMP7:

- The PC definition was changed to include private sewer transfer (S105A) collapse events – Table 164 shows the AMP5 and AMP6 performance on this basis.
- In AMP7 the definition changed to be based on impact of fault to either customer or environment and whether initial intervention has resolved the incident or not.

Sewer collapses as an indicator of asset condition is not the best measure of sewerage asset condition. It provides a 'iceberg' view of issues as the only perspective given is the 'failure' position. The indicator does not provide any view on how the assets are being maintained. Asset condition would be better understood by measuring how many sewer repairs have been undertaken both proactively and reactively. Significant investment is required to demonstrate material improvement on performance; c35,000km of sewerage asset (or c1.6m individual lengths of sewerage) and c200 collapses reported annually, one every 175km (or one every 8,000 lengths of sewerage).

Sewer collapses are defined as number of sewer collapses per 1000 kilometres of all sewers that have not been identified proactively by the company and causing an impact on service to customers or the environment. The total number of sewer collapses includes burst rising mains. This measure seeks to reflect failures in the asset that are causing an impact on service to customers or the environment and requires replacement or repair to reinstate service, while maintaining incentives for the company to proactively investigate asset quality.

PC units: Number of sewer collapses per 1,000 km of all sewers this is to allow normalisation to enable comparison between companies.

1.20.2. Our long-term ambition

2050 target: 9.78

The health of our assets supports the long-term ambitions in our Strategic Direction Statement.

The following sections outline our performance to date and our proposed performance in 2025-2030 to achieve our long-term aspiration in the most cost-effective manner for customers and the environment.

1.20.3. Our performance and proposed baseline

Historical performance

Table 164 – Historical performance and targets based on AMP6 performance commitment definition

Table heading	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20
PC target	-	-	-	-	<300	<300	<300	<300	<300
Conversion from rate to number of incidents	-	-	-	-	-	-	-	-	-
Performance from base expenditure	13.69 (242 incidents)	16.12 (283 incidents)	15.87 (279 incidents)	15.31 (270 incidents)	15.92 (282 incidents)	14.84 (264 incidents)	12.42 (223 incidents)	13.90 (248 incidents)	13.35 (240 incidents)
Step change in performance from enhanced expenditure	-	-	-	-	-	-	-	-	-
Overall performance	13.69 (242 incidents)	16.12 (283 incidents)	15.87 (279 incidents)	15.31 (270 incidents)	15.92 (282 incidents)	14.84 (264 incidents)	12.42 (223 incidents)	13.90 (248 incidents)	13.35 (240 incidents)

The first change in definition that added the private sewer transfers, also increased the total length of sewer included in the calculation. The second change also resulted in a reduction in the number of collapses that we reported.

Our current performance

Table 165 – PR19 target and performance on the AMP7performance commitment definition

Table heading	2020-21	2021-22	2022-23	2023-24	2024-25
PR19 target	6.33 (221 incidents)	6.33 (222 incidents)	6.33 (222 incidents)	6.33 (222 incidents)	6.33 (223 incidents)
Performance from base expenditure	6.12 (214 incidents)	5.91 (207 incidents)	5.22 (183 incidents)	-	-
Step change in performance from enhanced expenditure	-	-	-	-	-
Overall actual performance	6.12 (214 incidents)	5.91 (207 incidents)	5.22 (183 incidents)		
Forecast overall performance				5.73 (201 incidents)	5.73 (201 incidents)

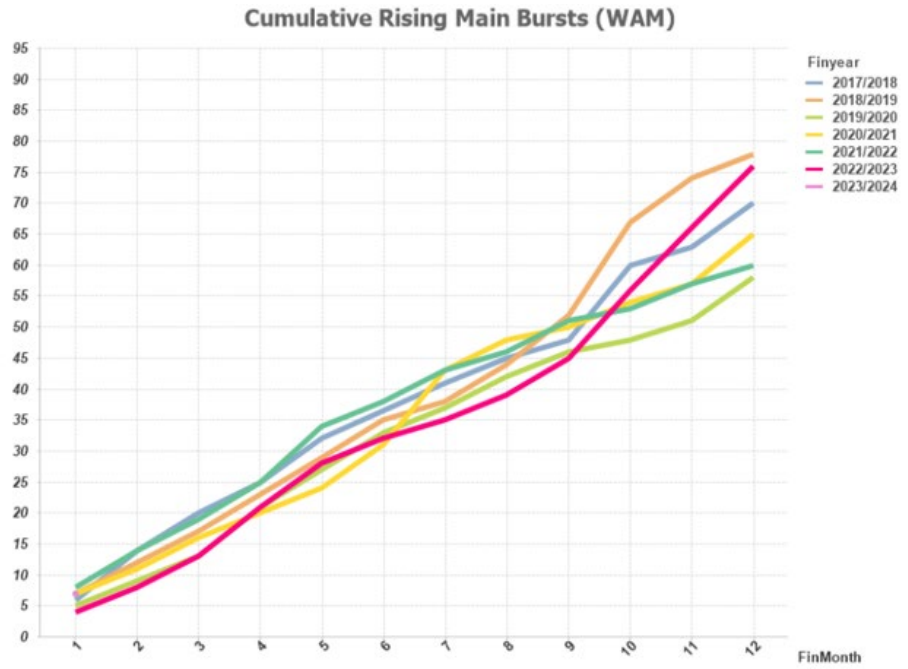
The forecast for 2023-24 and 2024-25 is based on the average of the first three years of AMP7, 5.73 (201 rising main bursts or sewer collapses).

Rising main recent performance is shown in Figure 25 below. The 2022/23 performance for burst rising mains was the leading performance in the past six years, apart from the last quarter. The last 3 months of 2022/23 has seen quite an uplift in rising main bursts; January was very wet (132% of long-term average, LTA), February was very dry (19% of LTA) and March was exceptionally wet (235% of LTA). We believe that the impact of weather on our ageing assets has influenced the number of bursts reported in this period.

The 2022/23 performance has seen a decrease in the number of collapses on gravity sewers which is unusual and not representative of the expected performance from the deterioration modelling.

An IT process improvement is being proposed for PR24 as part of the company's move to Microsoft Dynamics that will be able to incorporate more detailed through the electronic job cards for when sewer repairs are raised.

Figure 25 – PR19 target and performance on the AMP7performance commitment definition



There are two programmes of works run in AMP7, £18.4m proactive sewer rehabilitation programme (c60km) and £14.1m rising main replacement programme (c35km), which are delivered out of base expenditure. Our sewer rehabilitation programme is industry leading adopting a number of innovative techniques and technologies to improve our cost effectiveness and performance, see the case study below.

Innovative Rehabilitation Case Study

After the transfer of private drainage to Wessex Water in 2011, it was essential for us to focus our attention on trenchless alternatives that can be used to repair small diameter sewers, as the majority of private drainage is 150mm in diameter.

The robotic "Re-Rounder" (RR) has been developed for projects to repair 150mm diameter sewers with up to a 25% deformation in structurally brittle or rigid pipes. The Re-Rounder uses automatic plates to push the pipe back to its original circular profile and leaves behind a metal stent – similar to those used to keep arteries open. We then re-line the inside of the pipe over the stent to ensure it's secure and watertight.

The RR was used in Malmesbury when a 50m section of network which was found to have grade 5 and 4 defects, with 4 of the grade 5 defects exhibiting > 20% deformation at 3m in depth. Previously the traditional options would have been to either;

- Line over the major defects and accept the structural integrity of the liner would be compromised and would have reduced longevity.
- Excavate down on the sewer to replace the four most defective sections, which would need four teams for two days.

However instead the RR was used to reconstruct the pipe in 90 minutes using 4 stents. It allowed the CIPP lining to proceed with a normal 3mm liner as opposed to a 6mm required for a 20% deformation. The cost of the RR intervention represented a 95% saving over an open cut solution.

Case study: Innovation Rehabilitation – Robotic "Re-Rounder"

Our performance in AMP7 for the collapse performance commitment has been consistently upper quartile as reflected in the insert below.

Comparative Performance
Top 3 green, bottom 3 red

	Year	Anglian	North-umbrian	Severn Trent	Southern	South West	Thames	United Utilities	Dwr Cymru	Wessex	Yorkshire	Average	Wessex Rank of 10
Sewer collapses (per 1,000 of sewer)	2022/23	5.2	9.3	7.2	6.2	8.3	3.6	14.3	6.7	5.2	11.0	7.7	**2**
	2021/22	5.4	22.4	7.4	7.9	6.8	3.8	13.7	6.7	5.9	11.7	9.2	**3**
	2020/21	6.1	9.8	7.7	7.9	9.8	4.0	14.6	7.7	6.1	15.1	8.9	**3**

Proposed PR24 baseline

Proposed baseline: 6.12 (equivalent to 216 rising main bursts and sewer collapses)

Rationale: Following the changes in definition in PR19, there are only three years of data to derive a baseline. We propose using the worst performance of AMP7 as the target for AMP8 baseline performance on the basis that the existing assets are aging, and the rate of deterioration is expected to increase over time. At this stage the sector and regulators recognise that there has been underinvestment on water mains, and the same can be said for the sewerage sector. We also anticipate that for PR29 we will be submitting a step change in base expenditure to increase the sewer and rising man maintenance and for this to be the start of a sustained increase in this investment to improve on the long-term trend that we are currently forecasting.

The health of our assets supports the short- and long-term delivery of our ambition's outcomes. We are intent on continuing to focus and improve on our rising main and sewer health and maintaining our good performance. With further process and technical improvements anticipated we are proposing continuing improvement in performance through base expenditure.

1.20.4. Proposed Performance Commitment Level

Performance commitment level

Considering our current leading performance and the other priorities in the programme we are not looking for an increase in investment in PR24, however, we will be seeking a step change in investment in PR29 and then a continued and sustained increase in investment going forward to counter the natural deterioration as our sewers and rising mains age. As a result, we propose the following performance commitment level.

Table 166 – Propose performance commitment level

	2025-26	2026-27	2027-28	2028-29	2029-30
Performance from base expenditure	6.12	6.12	6.12	6.12	6.12
Step change in performance from enhanced expenditure	-	-	-	-	-
Proposed PC level	6.12	6.12	6.12	6.12	6.12

How will we maintain our service

The following interventions are proposed to maintain our performance and will be funded from base expenditure

Table 167 – Proposed interventions

Intervention	Capex cost (£)	Opex cost (£)	TOTEX cost (£)	Expected Improvement in performance	% Impact on performance
Proactive rising main replacement	£14.6m	-	£14.6m	-	-
Proactive gravity sewer rehabilitation	£19m	-	£19m	-	-

We are proposing to continue with proactive sewerage investment in both sewer rehabilitation and pumping mains.

We have determined our future rates of sewer collapses and rising main bursts based on our sewer deterioration modelling, adjusted for the level of investment. The model is based on observing the change in condition grades using time spaced condition surveys. This has been previously reliably used before to quantify the change in grades which

relate to the rate of collapse seen in the network. The step worsening in deterioration rate will need to be addressed by a continual and sustained increase in investment from PR29 onward.

Table 168 – Assessment of the deterioration rate of sewers and rising mains.

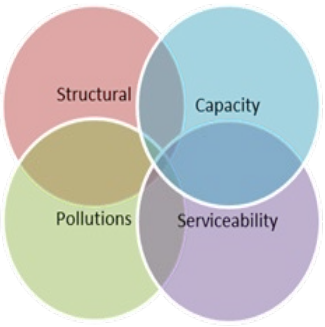
Measure	AMP7 Average (nr)	Deterioration Rate	2029-30	Deterioration Rate	2034-35
Burst RM	68	**12.5%**	76	**25%**	95
Collapses	134	**5.0%**	140	**10%**	154
	201		**216**		**250**

1. Sewer rehabilitation

Our sewerage asset base is some 35,000km long – long enough to stretch almost round the world (the equator is 40,000km). To effectively manage capital investments and maintenance of the gravity sewer network, Wessex Water has developed Sewer Risk Model in accordance with common framework principles.

It considers 4 main risk categories as follows:

- **Structural:** Asset condition – long term asset stewardship
- **Pollutions:** Environmental - commitments to PIRP
- **Serviceability:** Customers - preventing escape of sewage
- **Capacity:** Hydraulics - making sure capacity meets the demands



The risk model provides outputs that are keystones to our company's framework for sewer capital maintenance investment. It is used in our inspection policy and escape of sewerage programme, to assist in finding and prioritising sewer capital maintenance investment.

There are two stages in the sewer rehab process following the risk modelling:

- Sewer CCTV inspection prioritisation procedure
- Sewer rehab prioritisation procedure

Both procedures use Sewer Risk model results, Cost Benefit Analysis, Whole Life Cost Analysis and Cost Efficient Analysis to produce a prioritisation score.

This determines the short, medium and long-term sewer renovation priorities following a defined policy that is based on risk and sound logic to accurately identify sewer inspection, rehabilitation and maintenance requirements. This will ensure that we optimise the targeting of our investment to achieve the most value across the entire network.

The inspection information gathered is then used to further update and verify asset risk models and to determine capital investment and maintenance programmes. This allows the company to focus its resources more efficiently across all risk factors and sewerage performance commitments.

Our sewer deterioration modelling was developed a decade ago and is regularly updated to include recent data and information. It suggests we should be having a step change in proactive sewer rehabilitation to match the deterioration rate and challenges posed by climate change, so that we do not pass legacy assets on to future generations.

We will need to significantly step-up levels of rehabilitation in the long term, but for AMP8 we are proposing to stay at the AMP7 rate of 23 km per year, whilst developing approaches for AMP9 and beyond.

2. Rising main replacement

Our rising main asset base consists of over 1200km of rising mains, with an average age of around 45 years, it differs from our gravity network in that it experiences variations in pressure when pump stations are on or off, this stress cycle results in the majority of rising mains that are approaching the end of their useful and reliable asset life.

Historic investment in the asset base has usually relied on replacing assets that were failing prematurely, over the next 10-15 years, the assets will begin to fail through age and fatigue. In AMP7 the replacement rate was doubled, this allowed us to keep the annual number of bursts at a steady level. In AMP8 we are proposing to increase our investment by c20%. In AMP7 we will continue to progress the lining of or rising mains as a cost effective and low carbon way to increase the useful life of our assets.

A step change in investment will be required in AMP9 going forward if the asset base is to continue to remain stable. This will also require new condition assessment tools and technologies being developed and new methods for rehabilitating existing rising mains. Our rising main materials vary usually related to the decade that they were installed, we have metal mains that corrode, and plastic mains that are subject to fatigue. Unfortunately, a large proportion of this asset data has been lost from when they were installed before computer records, by the local drainage boards. This makes effective modelling of anticipated failure rates challenging, over AMP8 we intend to fill in the gaps in this data. Along with effective performance monitoring of our pump stations, we shall be in a position to provide key interventions and improvements on our aging asset base and make limited funds stretch further and have a greater impact.

In AMP8 the rising main asset base will face greater challenges than ever before, with more development, aging gravity sewers and a greater emphasis on reducing impact to the environment; there will be more pressure to pump more flows, more often. Without greater understanding of our asset condition, these drivers could hurt our environmental and operational performance.

Whilst this intervention does not have an impact on our pollution performance, failure to fund the replacement of rising mains will have a negative impact on the pollution performance from base expenditure.

How does this achieve our long-term target?

The trajectory to 2050 target has the following profile.

Table 169 – Performance profile 2025-2050

	2024-25	2029-30	2034-35	2039-40	2044-45	2049-50
Performance profiles to achieve SDS 2050 target	5.73	6.12	7.03	7.35	8.47	9.78

Modelling shows that the sewerage asset base is deteriorating faster than the current rate of rehabilitation can support and we will need to significantly step-up resources to deliver increased levels of rehabilitation in the long term to maintain service levels and ensure network resilience. We are currently forecasting to see this increase in

deterioration in AMP9, further deterioration modelling works will be undertaken in AMP8 to determine future approaches to arrest this deterioration. Consequently, we will be proposing a step change in funding initial for AMP9 and then on a continuous incremental basis to improve the asset health of our sewers and rising mains.

This results in the following performance profile in 2030-35 to support our 2050 target:

Table 170 – Proposed performance 2030-2035

Table heading	2030-31	2031-32	2032-33	2033-34	2034-35
Performance from base expenditure	6.30	6.49	6.67	6.85	7.03
Step change in performance from enhanced expenditure	-	-	-	-	-
Total performance	6.30	6.49	6.67	6.85	7.03

We are continuously looking for ways to improve current modelling, so that it allows us to pinpoint failure before occurring and potentially causing service failure or environmental impact. These improvements can be categorised in 3 categories by better use of data:

- Data obtained from live monitoring
- New external data sources
- AI optimisations of the available data

Emerging new technologies which monitor the sewer network continuously in real time would allow us to learn a lot more about how the network operates, thus allow us to manage it better. The proposal for increased in-sewer monitoring (12,000 monitors) as part of the pollution incident reduction strategy will help with this greatly.

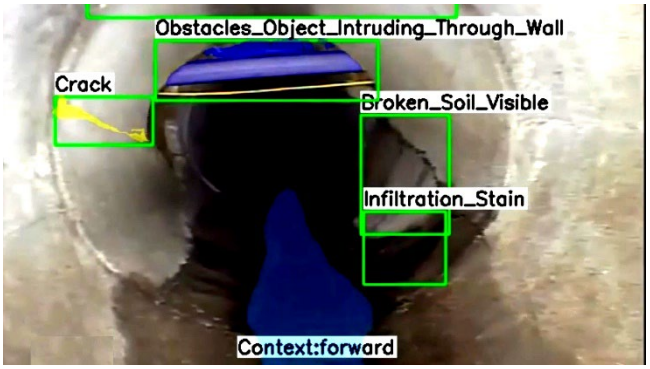
Information obtained externally from other sources such as the European Space Agency (ESA) satellite observations that will allow us to identify local changes that could have an impact on our assets. For example, we recently imported the available tree density coverage information, which has already been used to assess increased risks to parts of the network due to tree roots that could cause blockages. We are also working on incorporating The European Ground Motion Service (EGMS, also provided by ESA).

The advances in machine learning would then allow us to optimise and make sense of all if this data by discovering dependencies and patterns to understand and predict failure incidents, see the following case study.

CCTV Artificial Intelligence Case Study

Wessex Water is harnessing the power of Artificial Intelligence (AI) to revolutionise the way it detects sewer defects while surveying its 35,000-kilometre-long sewer network. Before now, we have been surveying around 400km of sewer each year using CCTV equipment with colleagues manually recording any defects they spot while watching the footage live.

In 2019, we issued a Marketplace Challenge to see if it was possible to use AI technology to automatically detect and classify defects from survey footage to help us improve efficiency and reduce business costs. We were contacted by around 60 companies and eventually narrowed it down to four top contenders following initial trials.



Further trials were then completed to evaluate the ability and accuracy of the technologies under near-realistic conditions and an overall winner was chosen.

We have now successfully deployed this innovative technology that uses AI to code sewer CCTV surveys which eliminates the need for an operator to log the defects onsite during the survey. This dramatically improves the productivity of the crews thus allowing us to increase the length of proactive inspections. This would allow better risk modelling and more accurate prioritisation.

Using this technology has significantly increased the productivity of crews in terms of the surveyed metres per day, where in some cases triple the amount of metreage is being achieved per day in comparison. It is also allowing us to undertake rapid re-surveys of our strategic critical sewer legacy surveys and survey sections of the network that we have historically never been able to inspect.

This additional data has allowed us to supplement our sewer risk model with more data, which has allowed us to better understand our asset conditions and how are network operates, which allows our rehab teams to focus their resources in areas where it is most needed.

Case study: CCTV Artificial Intelligence

1.20.5. Outcome delivery incentive

Incentive type: outperformance and underperformance payments

Ofwat standard ODI rate: £0.756m outperformance and -£0.756m underperformance payment

Proposed standard ODI rate: £0.756m outperformance and -£0.756m underperformance payment

1.20.6. Risks to performance (P10/P90)

These P10/P90 values are applicable to AMP8 only. They are reasonable 1 in 10 year worst- and best-case performance scenarios and do not attempt to quantify the impact of a more extreme force majeure type event.

Table 171 – P10

	2025-26	2026-27	2027-28	2028-29	2029-30
P10 profile	7.30	7.30	7.30	7.30	7.30

P10 rationale: What level of performance are deterioration modelling for rising bursts and sewer collapses is showing, based on proposed level of investment, for the end of AMP8.

Table 172 – P90

	2025-26	2026-27	2027-28	2028-29	2029-30
P90 profile	5.21	5.21	5.21	5.21	5.21

P90 rationale: Set at our best performance achieved under the PR19 definition.

2. OUT 3 specific commentary

OUT3 pulls data in this table from two core sets of data as follows:

- The step change in performance is pulled through from OUT1 and OUT2
- The step change in performance is pulled through from CW15 and CWW15

These two sets of data are then compared to determine whether they match or not which allows Ofwat to confirm whether the step change in performance we have stated our proposed enhancement expenditure will deliver, aligns with the overall performance commitment level we have proposed.

Whilst section 1 outlines the rationale for the overall performance commitment level and the proposed enhanced expenditure, this section explains any differences between the above data sets.

The following performance commitments have no enhancement expenditure associated to them as we are committed to deliver the proposed performance level through base expenditure resulting in all cells of OUT3 stating zero:

- Supply interruptions (PR24_WSI_WSX)
- Compliance risk index (CRI) (PR24_CRI_WSX)
- Customer contacts about water quality (PR24_WQC_WSX)
- Operational greenhouse gas emissions (water) (PR24_OGW_WSX)
- Bathing water quality (PR24_BWQ_WSX)
- Mains repairs (PR24_MRP_WSX)
- Unplanned outage (PR24_UNO_WSX)
- Sewer collapses (PR24_SCO_WSX)

The performance commitments below have enhancement expenditure associated with them from either the OUT table and/or the cost tables. The rationale behind this is explained below.

2.1.1. Internal sewer flooding (PR24_ISF_WSX)

The profile between columns J-N and X-AB does not exactly match as columns X-AB add the performance from the previous years. However, this cumulative change is already factored into the base data feeding CWW15.

2.1.2. External sewer flooding (PR24_ESF_WSX)

The profile between columns J-N and X-AB does not exactly match as columns X-AB add the performance from the previous years. However, this cumulative change is already factored into the base data feeding CWW15

2.1.3. Biodiversity (PR24_BIO_WSX)

For decision-making purposes, we have optimised biodiversity improvements by quantifying the benefits associated to land use change. This is different to the PC units which measures the net change in the number of Biodiversity Units (BUs) on nominated land per 100km^2 of land in the company's area. As such, the data in CW15 and CWW15, is not comparative to the performance commitment data present in OUT1,2,3 and 5.

2.1.4. Operational greenhouse gas emissions (wastewater) (PR24_OGWW_WSX)

There is a significant amount of benefit related to operational carbon recorded in tables CW15/CWW15. However, due to the nature of the performance commitment, this data could not be converted into comparative data.

2.1.5. Leakage (PR24_LEA_WSX)

The profile between columns J-N and X-AB does not exactly match as columns X-AB add the performance from the previous years. However, this cumulative change is already factored into the base data feeding CW15. In addition, the enhancement expenditure from Columns AC-AG presume additional funding from PR29. The impact of funding from PR24 does not change performance in AMP9 and should therefore be 0%.

Removing the cumulative performance in columns X-AB, the actual profile of performance matches between columns J-N and X-AB other than for a minor discrepancy in 2028-29 as a result of the base data. The OUT tables have a reduction of -1.7552 Ml/d whereas the base data feeding the benefits table has an incorrect value of -1.7452. The figure in cell M18 is therefore correct.

2.1.6. Per capita consumption (PR24_PCC_WSX)

Whilst the performance between columns J-N and X-AB does not exactly match as columns X-AB add the performance from the previous years, there is a minor discrepancy in the profiles regardless of this. This is because the base data used to populate CW15 has presumed an increasing profile in the baseline performance whereas OUT2 has presumed a static baseline performance. The two profiles result in the same l/h/d position but results in a marginally higher step change in performance in columns X-AB to account for the higher baseline position and therefore a larger step change in performance.

2.1.7. Business demand (PR24_NHH_WSX)

For decision-making purposes, we have optimised demand interventions using changes to water available for use (WAFU). This is different to the performance commitment units which is a three-year average of business demand (consumption at non-household premises) in mega-litres per day (Ml/d) from the 2019-20 three-year average baseline. As such, the data in CW15 and CWW15, is not comparative to the performance commitment data present in OUT1,2,3 and 5.

2.1.8. Total pollution incidents (PR24_POL_WSX)

The profile between columns J-N and X-AB does not exactly match for the following reasons:

- columns X-AB add the performance from the previous years. However, this cumulative change is already factored into the base data feeding CWW15.
- the enhancement expenditure from Columns AC-AG presumes additional funding from PR29. The impact of funding from PR24 does not change performance in AMP9 and should therefore be 0.
- The base data between the OUT tables and CWW15 is the same but it shows a slight difference when normalised due to rounding throughout the conversion process. Columns J-N show the appropriate profile.

2.1.9. Serious pollution incidents (PR24_SPL_WSX)

The profile between JN and X-AB does not exactly match as columns X-AB add the performance from the previous years. However, this is not appropriate for serious pollution incidents. The proposed enhancement expenditure improves the performance to the levels of performance outlines in OUT1 and OUT2. In addition, the enhancement expenditure from Columns AC-AG presume additional funding from PR29. The impact of funding from PR24 does not change performance in AMP9 and should therefore be 0%.

2.1.10. Discharge permit compliance (PR24_DPC_WSX)

The change in performance from enhancement expenditure that is derived from OUT1 and OUT2 is 0.00% (columns G-S). This is because there is no improvement in performance as a result of enhancement expenditure. The enhancement expenditure proposed in the plan is to maintain performance as it addresses risks such as growth and changing quality standards. This is reflected in columns X-AG.

The benefit type for WRC compliance with respect to site failure relates to a performance commitment (PC) for numeric consents. To convert this to the correct PC units it should be converted to a percentage, however in order for it to represent the net change attributed to the enhancement investment and for it to pull through to the OUT3 table correctly, for each purpose line with this benefit type, it has been converted to represent the net effect on % of failing sites (rather than % of sites compliant). As most schemes included in CWW15/16 are reducing the risk of compliance failure, the net benefit of doing these schemes is represented as a negative in the context of % of failing sites (i.e. site failures avoided). It is therefore not appropriate to compare the outputs between columns G-S and X-AG. For the purpose of the performance commitment, columns G-S should be used.

2.1.11. River water quality (phosphorous) (PR24_RWQ_WSX)

For decision-making purposes, we have optimised P removal schemes based on the EA's approach. This means for all sites where we could implement improvement schemes, we have included options in the optimisation that, where applicable, are able to meet the site-specific permit as a minimum (i,e. for WFD, NN etc site targets) plus more stringent removal permits. These are then optimised to be the wider sub-catchment or catchment targets for the Environment Act etc.

To align with the EA's approach, the service measure for phosphorous removal is in kg removed, based on the existing permit flow and concentration only with the quantified solution kg removed representing the permit flow times the P concentration for new permit.

This is different to the PC units which is the percentage reduction in phosphorous from sewage treatment works and partnership working against the 2020 baseline. As such, the data in CWW15, is not comparative to the performance commitment data present in OUT1,2,3 and 5.

2.1.12. Storm overflows (PR24_SOF_WSX)

The profile between columns J-N and X-AB does not exactly match as columns X-AB add the performance from the previous years. However, this cumulative change is already factored into the base data feeding CWW15.

3. Outcome performance - ODIs (financial) (OUT7)

3.1. Price control allocation

Columns E-L – We agree with Ofwat's pre-populated price control allocations. Where not pre-populated, we have completed the table as follows:

- Biodiversity – the performance commitment consists of five sites. Four sites (80%) have been attributed to the water resources price control (Charmy Down – water resources, Clatworthy Reservoir, Durleigh Reservoir and Sutton Bingham Reservoir) and one site (20%) has bee attributed to the Wastewater Network plus price control (Weston Super Mare (Bleadon Level) Water Recycling Centre)
- Serious pollution incidents – the performance measure can be affected by activities in both Water network plus and Wastewater network plus. However, 100% of our additional AMP8 activities will be within the Wastewater network plus price control.
- Discharge permit compliance – the performance commitment is based on 18 WTW and 290 STW's. As such, the price control has been allocated as 5.9% Water Network Plus and 94.1% Wastewater network plus.

3.2. Outperformance and underperformance payments

Column O and P - The marginal benefits and benefit sharing factors have been derived from Ofwat's guidance (shared on 27th June 2023) for all performance commitments except supply interruptions. The ODI rate for supply interruptions has been updated following correspondence from Ofwat on 1st September that a minor error in the data has been identified and they have corrected the error. Ofwat provided the outperformance rate of 0.39 which equates to 0.392000 to 6dp. This changed the ODI rate as follows:

	Marginal benefits (£m)	Benefit sharing factor (%)	Standard outperformance rate (£m)	Standard underperformance rate (£m)
Original value (from correspondence on 27/06/2023)	0.54	70.00%	0.378000	-0.378000
Revised value (from correspondence on 01/09/2023)	0.56	70.00%	0.392000	-0.392000

Ofwat has yet to confirm the biodiversity and Greenhouse gas emission marginal benefits which is why these cells have been left blank.

3.3. Enhanced outperformance thresholds

The final methodology states that the proposed enhanced outperformance thresholds should be the forecast frontier performance for water supply interruptions, internal sewer flooding, external sewer flooding, leakage, PCC and total pollution incidents.

The company's business plan commits to delivering an ambitious well-rounded plan that delivers improvements to customers and the environment whilst being affordable and deliverable. The step change in performance required to go beyond the current frontier is not conducive to the proposed plan. As a result, no enhanced outperformance thresholds have been proposed.

3.4. Commentary on the approach used to determine ODI rates

3.4.1. Overview

Ofwat's proposed approach to setting ODI incentive rates at PR24 is a significant departure from the approach taken at PR19 and the policy position set out in its PR24 final methodology decision. In its PR24 final methodology decision, Ofwat set out its intention to use a 'bottom up' approach to setting incentive rates derived from estimates of the marginal benefits of performance improvements. In its final decision on PR19 re-determinations, the CMA supported the use of customer evidence in setting incentive rates and encouraged Ofwat and companies to 'continue to develop this approach' for PR24.

Due to concerns about the lack of consistency between estimates of marginal benefits developed by the companies for PR19, Ofwat decided early on in the PR24 process to commission a common national research exercise on customer valuation. However, late in the process they have diverged from this approach and has indicated its intention to use what it refers to as a 'top down' approach to setting the incentive rates (ODIs) for common performance commitments at PR24.

Ofwat circulated a set of indicative incentive rates for Wessex Water derived using its top-down approach, as explained in a summary paper that Ofwat shared with us by email on 13 June 2023. The email from Ofwat asked for feedback in companies' business plan submissions on the indicative incentive rates and the top-down approach and suggested that Ofwat will take this feedback into account when setting rates as part of its draft determinations for PR24.

We acknowledge the work that has put in by Ofwat and companies so far to develop appropriate incentive rates and the challenges that both Ofwat and companies have faced as part of that process.

We have decided to use the indicative incentive rates for common PCs for the purposes of our AMP8 business plan. This reflects the following factors in particular:

- We are mindful that Ofwat has placed a relatively high bar for the quality of any evidence that may be used by companies to support alternative incentive rates that are based on customer valuations. While we have undertaken some work in this area, we are not confident that the evidence available at present to support incentive rates that are based on customer valuations can meet Ofwat's quality tests especially given Ofwat's latest position on the relative merits of a top-down approach.
- We can understand why – in the absence in compelling evidence for a more tailored approach – Ofwat would be keen to have common ODI rates for the common PCs at PR24 rather than company-specific rates.
- We can see some beneficial aspects of Ofwat's new approach, in terms of the more explicit consideration of potential RoRE ranges as part of ODI incentive rate calibration.
- While we have some concerns with aspects of Ofwat's approach, Ofwat has invited feedback on its approach and the indicative incentive rates arising from it, so there is an opportunity for these to be improved ahead of draft determinations.

We also wish to highlight at this stage some specific concerns with the new approach used by Ofwat and the indicative rates for Wessex Water that have resulted from the application of that new approach. Some of these concerns relate to inconsistencies between Ofwat's stated objectives in setting incentive rates and the indicative

rates shared with us. We also have broader concerns about the increase in risk exposure to Wessex Water from Ofwat's indicative incentive rates (if they were to be applied as part of the PR24 final determinations) compared to PR19 and potential inconsistencies that might result between the overall risk exposure to Wessex Water from the PR24 package and regulatory assumptions that feed into the cost of capital.

We recognise that these rates are only indicative and may change as Ofwat develops and refines its approach further, and we will work with Ofwat and the rest of the industry to develop a balanced set of incentives that is consistent with the rest of the price control package

3.4.2. Feedback on Ofwat's approach

There are some aspects of Ofwat's top-down approach that we support. Specifically:

- We support the use of analysis of potential RoRE impact ranges, drawing on historical performance data, as part of the work to calibrate incentive rates. Considering RoRE risk exposure when calibrating incentives is particularly relevant given that Ofwat's regulatory regime involves an industry-wide figure for the allowed cost of equity, which is calculated using historical data.
- We support giving weight to customers' relative priorities and preferences across different PCs and using these relative priorities to inform the extent of RoRE risk exposure to companies associated with each ODI.

These benefits are especially relevant given that there are limitations in the available estimates for customers' valuation (in absolute term) of the incremental benefits of performance improvements; we can see merit in not relying on this type of evidence in isolation.

However, we believe that Ofwat's top-down approach, as it stands, has some weaknesses, both in terms of the principles behind it and its practical implementation. We provide constructive comments below on three key areas:

- loss of link between ODIs and the customer valuation of performance improvements.
- industry-wide implementation issues; and
- implementation issues for Wessex Water.

Given that Ofwat only provided full details of its new top-down approach in June 2023, which was a departure from its PR24 methodology, we have not had opportunity for our business plan submission to make refinements to Ofwat's approach and incentive rates to help tackle these issues while retaining the benefits we highlight above. This is especially challenging because Ofwat's QAA indicates that it requires compelling evidence for any departure from its indicative rates for the purposes of the business plan. But we welcome Ofwat's request for feedback and hope that there is opportunity for constructive engagement with Ofwat on this ahead of the draft determinations.

3.4.3. Loss of link between ODIs and the customer valuation of performance improvements

A key feature of Ofwat's top-down approach (as set out in documents and spreadsheets shared with us), is that the incentive rate for each PC is not reliably tied to any estimates of the incremental / marginal benefits to customers (or the environment) from performance improvements against that PC. This departs from the well-established regulatory economics approach of seeking to align the financial benefits faced by a company from performance improvement in a given area with the customer and environmental value arising from such an improvement. While Ofwat's PR24 final methodology seemed to be aligned with this well-established approach, the new top-down approach is not.

Although Ofwat's top-down approach places some weight on *relative* customer preferences across different PCs, the *absolute* values of financial incentives that we would face are derived from the perspective of target RoRE risk exposure ranges with adjustments for relative preferences between PCs.

The initial choice of RoRE risk range of 0.4% - 0.6%, and the historical spread of companies' performance against PCLs, plays a large role in determining the ODI rate for each PC. This may lead to insufficient differentiation between PCs in their relative contribution to overall risk exposure to companies, especially in a content where the incremental benefits, and customers relative priority associated with those PCs could vary by a wider margin.

Furthermore, Ofwat's approach means that regulatory constructs such as assumptions on notional gearing and the size of the RCV (which in turn are affected by decisions on allowances, capitalisation rates and historical RCV run off) have a direct impact on the level of the ODI incentive rates even if these have little link to the customer valuation of performance improvements.

While the indicative incentive rates could be influenced to a degree by customer benefit estimates through Ofwat's use of historical RoRE ranges (which in turn may have been driven by estimates on customer benefits from PR19), there seems to be no explicit and intentional link between the proposed rate for each PC and a valuation of the customer benefits from that PC.

The indicative incentive rates for AMP8 for some PCs are very different to the AMP7 rates. For example, the incentive rates for customer contacts about water quality would increase by 600% and the rates for external sewer flooding by over 400% compared to the AMP7 rates. We have not seen a good reason for these rates to increase so much.

Despite the concerns above, we recognise that Ofwat has made a choice to move from a bottom-up approach to a top-down approach because, in its judgement, there is not a sufficient quality evidence at this stage to set industry-wide ODI rates for the common PCs based on estimates of the customer and environmental value of incremental performance improvements.

As a possible improvement on Ofwat's approach, we thought that there may be potential to take some account of bottom-up evidence on customer valuation for a subset of PCs for which this type of evidence is stronger (e.g. giving it some weight or full weight depending on the strength of evidence) and then to use this as an anchor for the incentive rates for other PCs which could be set, as under the current top-down approach, based on information on relative preferences across PCs. This would allow something of a hybrid approach.

3.4.4. Industry-wide implementation issues

At the industry level, there are features of Ofwat's implementation of its top-down approach that means that the actual RoRE risk exposure range arising from this could be materially wider than the target RoRE risk range that Ofwat sets out to use (which is based on evidence from AMP7 so far). This does not seem to be Ofwat's stated intention and we see opportunities for improvement as Ofwat refines its approach and indicative rates. There are several issues to consider.

When aggregated across all PCs, the indicative rates could lead to a RoRE exposure at a company level of around 3.5% to 5% for WASCs (as recognised in Ofwat's note of 13 June). This is materially in excess of the expected range of 1%-3% set out in the PR24 final methodology. We think that further analysis could be done, drawing on past performance data, to help ensure that the company-level RoRE ranges for AMP8 are in line with stated intentions.

In addition, the analysis that Ofwat has done to calculate AMP7 RoRE exposure considers differences between each company's outturn performance and its own PCL, and in some cases PCLs were company-specific during AMP7. For PR24 Ofwat intends to set a larger proportion of common PCLs across common PCs. This is a significant change to the way that PCLs are set, and we would expect that holding companies to common PCs rather than a company-specific PC tailored to each company's own circumstances or past performance, would tend to increase the spread of performance relative to PCLs. On this basis, Ofwat's approach to calibrating AMP8 incentive rates based on outturn performance against PCLs in AMP7 could lead to higher RoRE risk exposure than in AMP7 and higher than intended. To help tackle this issue, it would be relevant to consider not just AMP7

performance against PCLs (some of which are company-specific) but also AMP7 performance against assumptions of what PCLs might have been in AMP7 if set on a common approach where this is envisaged for AMP8.

Furthermore, Ofwat's methodology (as set out in a document attached to the email of 13 June) says that when estimating the range of historical performance in RoRE terms across companies for common PCs, it has chosen an "*average RoRE allocation per PC of 0.5% which falls between the upper quartile and 90th percentile payments across all common PCs during 2020-22*". We have concerns that an overly simplified approach of this nature gives undue weight to potential outliers at the expense of information on the distribution of performance across companies. One potential improvement as Ofwat refines its indicative rates might be to use evidence on the standard deviation of performance around PCLs as this uses the full dataset rather than certain extreme values. This type of approach could still fit with the broader concept of a P10 to P90 range (e.g. the established technique of using assumptions of a normal distribution and estimates of standard deviation to calculate an 80% confidence interval).

3.4.5. Implementation issues for Wessex Water

In relation to the indicative incentive rates for Wessex Water, we make the following observations.

There are aspects of Ofwat's approach which mean that the implied RoRE risk range for Wessex Water seems to be inconsistent with Ofwat's target ranges and relative customer priorities. Ofwat's approach to normalisation of PCs and unit rates for company scale means that the RoRE risk range for each company depends on the relationship between the scale variable used for normalisation and the RCV.

For example, notional RoRE risk exposure for Wessex Water relating to certain PCs in the water network plus price control (i.e. WSI, CRI and customer contacts) are approximately 0.38% - which is lower than Ofwat's target RoRE range. At the same time, Wessex Water's notional RoRE exposure relating to the bathing water quality PC in the waste water network plus control is approximately 0.7%, which is higher than Ofwat's target range. Moreover, Wessex Water would face a significantly higher RoRE risk exposure from the bathing water PC than it would from the WSI PC despite customer research showing that improvements in WSI is more important than bathing water quality.

As Ofwat refines its approach, we suggest more explicit consideration of whether the target RoRE ranges for each PC should be the same across all companies and, if not, the reasons for any differentiation.

3.4.6. Interactions with other parts of our business plan and the price control package at PR24

There are interactions between the level of risk exposure from ODIs and other aspects of the PR24 price control package. For instance:

- The level of risk exposure from the incentive package, which depends on the incentive rates as well as the PCLs, are relevant to the reasonableness of assumptions underpinning Ofwat's decisions on the cost of capital. Where there are material changes relative to the PR19 price control, these would need to be appropriately captured in the cost of capital.
- The level of risk exposure from ODIs also depends on the PCLs and the funding provided to companies through totex allowances, whether through base allowances (including cost adjustment claims) or through enhancement allowances. For instance, our cost adjustment claim on cost increases over time is directly related to the cost implications of more challenging PCLs in AMP8 than historically. We have taken these interactions into account in forming a view on the balance of risk and reward and the WACC for PR24.

4. PR19 Outcome Performance Summary (OUT8)

4.1. Common PCs from PR19

4.1.1. Water quality compliance (CRI)

Rationale for forecast performance: In the 2022-23 APR we forecast no underperformance payments for the AMP with our performance continuing to be within the deadband of 2.00, as seen in the three years of the AMP to date.

Whilst we recognise the target is 0.00, we have sought to set our forecast at 1.50 for the last two years of the AMP and indeed as our baseline for PR24. We feel that this is a more realistic performance which provides a challenge below the deadband, and which will see us continue to drive high and sustained performance at an industry leading position. However, it also recognises the uncertain future of the regulatory landscape.

	2023-24	2024-25
FD target	0.00	0.00
Forecast performance	1.50	1.50
Difference	-1.50	-1.50
Underperformance payment tier 1 – standard (£m/unit)	-0.580	-0.580
Calculated outperformance/underperformance (£m)	0.000	0.000

4.1.2. Water supply interruptions

Rationale for forecast performance: We are currently delivering industry leading Water and Sewerage Company (WASC) performance for this PC. The significant reduction in supply interruptions since this new metric was introduced is a result of continual improvement in our processes and procedures and investment in new ways of working and new equipment.

As detailed in our long-term delivery strategy we are planning to retain our current level of performance in 2025-2030 and 2030 to 2035, matching the end of AMP7 PCL. We will then gradually reduce to zero thereafter once new technology and innovation makes this affordable.

In AMP7 this will result in a small outperformance payment in 2023-24 and no payment in 2024-25 as we hit our end of AMP target.

	2023-24	2024-25
FD target	00:05:23	00:05:00
Forecast performance	00:05:00	00:05:00
Difference	00:00:23	00:00:00
Outperformance payment - standard	0.140	0.140
Calculated outperformance/underperformance (£m)	0.054	0.000

4.1.3. Leakage

Rationale for forecast performance: Overall actual performance in 2022-23 saw an increase in total leakage due to leakage outbreaks resulting from ground shrinkage caused by the long hot summer and further break out in December and January as a result of severe cold weather events. Much of this leakage had been recovered by the start of the 2023-24 reporting year and we are now confident of achieving the 2023-24 in year target through a continuation of existing efforts.

Forecasted figures for the remainder of AMP7 are taken from Line 39FP in WRMP24 Planning Table 3c: DYAA – Final Plan. Due to the impact of the dry 2022-23, the three-year average calculation means that despite our ongoing focus on reducing leakage, we are forecasting to miss in the last year of the AMP. However, as a trend, our performance will improve again in 2025-26 when the three average excludes the 2022-23 dry year.

This matches our APR 2022-23 forecast for the end of AMP performance payments.

	2023-24	2024-25
FD target	9.9	12.8
Forecast performance	10.0 (9.959)	9.7
Difference (%)	0.1 (0.059)	-3.1
Difference (ML/d)	(0.059/100)* 73.3 (Ml/d baseline) = 0.04 and rounds to 0.0	(3.1/100) * 73.3 (Ml/d baseline) = 2.3
Outperformance payment – standard (£m/ML/d/ year)	0.220	0.220
Underperformance payment – standard (£m/ML/d/ year)	-0.330	-0.330
Calculated outperformance/underperformance (£m)	0.000	-0.759 (2.3*-0.330 = -0.759)

The 2023-24 ODI performance model for use in PR24 business plan automatically calculates any resulting ODI payment. The model uses the difference in % performance to 3 decimal places which results in a difference in ML/d of 0.04. However, the ODI payment calculation rounds this to 1 decimal place so generates a 0.0ML/d performance difference which results in £0.000m outperformance payment. This calculation has been replicated in this data table.

4.1.4. Per capita consumption

Rationale for forecast performance: Due to the lasting impacts of Covid, it is unlikely that we will meet the PR19 performance commitment target by the end of AMP7 and are therefore forecasting a PCC figure in line with that forecasted in the revised draft WRMP24. The Water Resources Management Plan forecast accounts for the change in household demand since 2020 and the uncertainty in more recent consumption patterns as a result of the cost-of-living crisis.

Nonetheless, over the next two years we expect PCC to reduce as we continue to deliver our demand management activities and as customers continue to be aware of their water and energy use due to the continued impact of the cost-of-living crisis.

This is in line with our APR 2022-23 reporting. The table below shows the in-year underperformance payment calculated for the final year of the AMP only as any previous years' payments have accrued. The total forecast accrued underperformance payment for the AMP, is -£3.705m.

We have included the full PCC penalty in these table, as calculated based on the final determination profile of performance. However, we do not necessarily agree with the full application of this penalty due to the lasting impact changes to working habits have had on PCC. This was discussed between companies and Ofwat during the pandemic. We have set out all our steps to reduced PCC in our WRMP.

	2023-24	2024-25
FD target	0.4	0.9
Forecast performance	-2.7	-1.7
Difference	-3.1	-2.6
Underperformance payment tier 1 – standard (£m/unit)	-0.130	-0.130
Calculated outperformance/underperformance (£m)	0.000	-0.455

4.1.5. Mains repairs

Rationale for forecast performance: We did not agree with the PR19 target, in particular that it did not reflect the increase in proactive (detected) repairs needed to meet our leakage reduction target as detailed in our PR19 business plan - the link between leakage and bursts.

Our historic data shows that as we have reduced leakage over the years the number of reactive repairs has reduced, and the number of proactive repairs has increased as have the total number of repairs. Leakage has been driven down lower and lower through a number of policies and strategies; of which increased Active Leakage Control (ALC) has been central, i.e., employing more and more leakage inspectors to go out and detect more and more leaks, with the subsequent repairs.

In our APR 2022-23 we submitted an end of AMP forecast based on the three-year average rate reported in the AMP at that point. This took account of the varying weather conditions and the impact on ground movement over the years, as well as the continued focus on meeting our leakage reduction targets.

In completing the PR24 business plan work we have revised this forecast based on a continuation of our recent historic trend with the number of reactive repairs reducing, but the number of proactive repairs needed to meet leakage reduction targets increasing by slightly more resulting in an overall small rising trend in the total number of repairs.

	2023-24	2024-25
FD target	154.6	152.4
Forecast performance	164.0	164.7
Difference	-9.4	-12.3
Underperformance payment tier 1 – standard (£m/unit)	-0.046	-0.046
Calculated outperformance/underperformance (£m)	-0.432	-0.566

4.1.6. Unplanned outage

Rationale for forecast performance: We have not done any specific interventions for this PC in AMP7 and not proactively targeted improvements to performance, primarily due to past outperformance. Instead, we chose to invest in our integrated network rather than focussing on raw water quality and water treatment centres specifically. We have therefore increased our resilience and ability to maintain supplies to our customers.

A flat PC target of operational outage less than 2% of total design capacity was forecast for AMP7, based on maintaining our unplanned outage at a level below the worst case over the previous ten years. A common PC target was set at 2.34%. In our APR 2022-23 we forecast to be within the PC target for 2023-24 and 2024-25 based on our having achieved this target throughout AMP7.

The PR19 PC definition is different to that proposed for PR24 and therefore the OUT6 and OUT8 tables match the current performance table in the commentary for the PC.

	2023-24	2024-25
FD target	2.34	2.34
Forecast performance	2.33	2.33
Difference	0.01	0.01
Underperformance payment – standard (£m/unit)	-0.243	-0.243
Calculated outperformance/underperformance	0.000	0.000

4.1.7. Internal sewer flooding

Rationale for forecast performance: In our APR 2022-23 we forecast performance in the last two years of AMP7 to meet targets with no associated out or underperformance payments.

In our analysis for PR24 planning we reviewed our performance over the last five years. We have seen how our work around additional jetting training had an impact on reported numbers in 2022-23; and how the extremes of weather have had a bearing on reported numbers. With no specific interventions planned for this PC, although expecting strategies for external sewer flooding will impact, we believe a five-year average performance as forecasts for the final two years is more credible, as we have performed better than target in each year of the AMP to date.

	2023-24	2024-25
FD target	1.44	1.34
Forecast performance	1.32	1.31
Difference	0.12	0.03
Outperformance payment – standard (£m/unit)	5.690	5.690
Calculated outperformance/underperformance	0.683	0.171

4.1.8. Pollution incidents

Rationale for forecast performance: In our APR 2022-23 reporting we forecast the three-year average performance, for the AMP to date for 2023 (2023-24), with a reduction in 2024 (2024-25) to more typical numbers through planned initiatives.

With more analysis for the PR24 business plan of our 2022 performance, where we saw a significant increase in pollution incidents reported, we have revised those forecasts.

In 2022, the overall number of category 1-4 incidents was similar to those in 2021, however there was a shift in the proportion of category 4s up to category 3s. This has been attributed to two factors; the first was droughts in the summer of 2022 exasperating very small spillages resulting in an impact being reported. The second was the improved use of data gathered from event duration monitors (EDM), allowing for analysis and identification of historic spills which were reported to the EA. These spills defaulted to category 3s.

There was also a step change in the number of pollutions reported at both water recycling centres (WRC) and sewage pumping stations (SPS). WRC incidents increased from an average of 22 to 40, and SPS incidents from an average of 5 to 21 incidents. Foul sewer pollutions remained similar to previous years.

As a result of these incidents, our Pollution Incident Reduction Plan for 2023 has a renewed focus on WRCs and SPSs to see if our actions can be enhanced to deliver further benefits and reductions.

We also continue to monitor the impact of an increasing number of EDM, to understand new data and update processes to attempt to receive alerts pre-discharge to prevent incidents.

Whilst we hope that this renewed focus will have an impact in 2024, we do not believe we will see that result in reduced numbers in 2023 and our current forecast is for a similar number of incidents to 2022. The forecasts in the table below reflect our current thinking:

	2023-24	2024-25
FD target	22.40	19.50
Forecast performance	31.48	25.76
Difference	-9.08	-6.26
Underperformance payment – standard (£m/unit)	-0.270	-0.270
Calculated outperformance/underperformance	-2.452	-1.690

4.1.9. Sewer collapses

Rationale for forecast performance: The APR 2022-23 forecast performance for AMP7 for this PC was £0.000m based on continuing to achieve a performance better than target and so ensure no underperformance payment. The PR19 PC is underperformance only.

The actual forecast for 2023-24 and 2024-25 is 5.73 collapses per 1,000km of all sewers based on the average of the first three years of AMP7.

	2023-24	2024-25
FD target	6.33	6.33
Forecast performance	5.73	5.73
Difference	0.60	0.60
Underperformance payment tier 1 – standard (£m/unit)	-0.125	-0.125
Calculated outperformance/underperformance	0.000	0.000

4.1.10. Treatment works compliance

Rationale for forecast performance: APR 2022-23 forecast payments at £0.000m for the AMP based on performance in each year being greater than or equal to the deadband of 99.00% - a continuation of performance seen in the AMP to date.

The forecast of 99.03% for 2023 and 2024 in OUT4 is equivalent to the APR forecast but based on 3 sites failing out of our sites with discharge permits. The 3 sites are based on the average over the last five years.

	2023-24	2024-25
FD target	100.00	100.00
Forecast performance	99.03	99.03
Difference	-0.97	-0.97
Underperformance payment tier 1 – standard (£m/unit)	-0.530	-0.530
Calculated outperformance/underperformance	0.000	0.000

4.2. Water and retail bespoke PCs from PR19

4.2.1. Total bill reduction to customers on social tariffs per 10,000 households

Rationale for forecast performance: In APR 2022-23 we forecast to exceed our target on this performance commitment in 2023-24 and 2024-25, forecasting a small net penalty over the AMP as a whole. This was based on an updated inflation forecast and actual performance seen in Quarter 4 when we started to see an increase in customers seeking debt advice and applying for Assist.

Since that time, we have seen a fall in the total bill reduction due to lower than expected average discounts for both Discount for Low Income Pensioners (DLIP) and WaterSure customers:

- On DLIP we moved all customers across to our new billing approach for 2023-24 with a flat 20% discount off the bill (where before customers received an average 20% off) – we knew this might have an impact on the average discount, but this was not easily quantifiable.
- On WaterSure, customers have been using less water and therefore receiving smaller discounts - for example 25% more customers on WaterSure now pay less on standard charges than with the WaterSure cap so they get no discount at all.

Our forecasts have therefore been updated with the resultant underperformance payments:

	2023-24	2024-25
FD target	80858	87029
Forecast performance	76839	86738
Difference	-4019	-291
Underperformance payment – standard (£m/unit)	-0.000013	-0.000013
Calculated outperformance/underperformance	-0.052	-0.004

4.2.2. Void sites

Rationale for forecast performance: We achieved 1.72% against a target of 2.00% in 2022-23, with our billing company, Pelican, actively involved in several initiatives to reduce the number of void properties. These have been absorbed into a “business as usual” approach and include.

- land registry searches to identify owners of void properties with consumption >10m3 and to issue bills in the name of the owner.
- shared occupancy data for the properties shared with Wessex Water from Bournemouth Water, which highlighted several differences.
- increased number of void visits, and the introduction of void profiling enabled selection of the most effective void strategy by postcode area.

As a result, there is no expectation that Void sites will increase, and we are forecasting performance in the final two years of the AMP based on the three-year average of performance in AMP to date.

	2023-24	2024-25
FD target	2.00	2.00
Forecast performance	1.75	1.75
Difference	0.25	0.25
Outperformance payment – standard (£m/unit)	1.931	1.931
Calculated outperformance/underperformance	0.483	0.483

4.2.3. Gap sites

Rationale for forecast performance: In 2022-23 we exceeded our target of 112 gap sites added to the billing system by identifying 115 properties not previously recorded on the billing database. To ensure our processes for identifying and billing newly built properties are rigorous and correctly implemented to minimise the chances of a property not being added to our billing system, these have been separately assured by our auditors. Forecasts are based on a small outperformance each year and number of sites as per 2020-21 and 2021-22.

	2023-24	2024-25
FD target	112	112
Forecast performance	113	113
Difference	1	1
Outperformance payment – standard (£m/unit)	0.000145	0.000145
Calculated outperformance/underperformance	0.000	0.000

The outperformance payment is 0.000145 (£145) but will read 0.000 in the data table as the outperformance payment is to 3 decimal places.

4.2.4. Number of children/students engaged

Rationale for forecast performance: The original target of over 24,000 children/students engaged was based on figures that included assemblies and other public engagements. The conditions for the Performance Commitment state that we can only count students up to age 18 and groups of up to 30 with a minimum of 20 minutes engagement. As a result, this target is unachievable. Our Education Team engaged with 8,916 children/students in the last year that our reportable under this PC (5,726 in 2021-22). The 8,916 children/students were as follows:

- School visits – 6,664
- Site visits – 1,896
- Scout/Guide and youth groups – 356

In addition to this, the team engaged with around 2,700 under 18s at other events such as four ‘Drop In Days’ which we organised at our sites in school holidays and public events that we have been invited to such as County Shows and Science Fairs. There was also one request for a virtual visit, (54 pupils). Whilst these types of engagement fit with the remit to ‘inform and inspire our next generation of customers’, they do not meet the PC definition and are not included in the reported numbers.

As per the Annual Performance Report and the above rationale, we are forecasting 9,000 children/students engaged which is in line with our performance in 2022-23. This results in an underperformance payment of £61,000 per year.

	2023-24	2024-25
FD target	24370	24370
Forecast performance	9000	9000
Difference	-15370	-15370
Underperformance payment – standard (£m/unit)	-0.000004	-0.000004
Calculated outperformance/underperformance	-0.061	-0.061

4.2.5. Customer reported leaks fixed within a day

Rationale for forecast performance: We just achieved our 90% target for customer reported significant leaks fixed within a day in 2022-23, despite the numerous challenges faced over the long hot dry summer and the exceptionally cold weather events in December and January.

To increase repair output, a repair gang and inspector leakage overtime incentive was implemented. Innovative use of encapsulation collars to facilitate quicker repair times, without the need to shut off supplies, and engagement with local highways to warn of an increase in requests for urgent permits have been effective strategies which continue to bear fruit; therefore, we expect similar or better performance against the target going forward.

	2023-24	2024-25
FD target	90	90
Forecast performance	91	91
Difference	1	1
Outperformance payment – standard (£m/unit)	0.063	0.063
Calculated outperformance/underperformance	0.063	0.063

4.2.6. Water quality customer contacts (appearance, taste and odour)

Rationale for forecast performance: We have continued to drive down the number of contacts in recent years through a combination of activities including:

- Undertaking root cause analysis to better understand underlying reasons and find appropriate solutions.
- Optimising Water Treatment Works performance to minimise aggressivity/corrosivity of water into supply and undertaking Water conditioning using sodium silicate for a small number of high-risk areas.
- Undertaking works at Service Reservoirs to minimise the risk of discoloured water entering the network.
- Using PODDS (Prediction Of Discolouration in Distribution Systems) to design mains conditioning schemes.
- Implementing a Calm network strategy including staff training, changing standpipe hire arrangements, Fire and rescue service engagement and transient (surge) pressure monitoring and management.

- Improving our Supply Risk Assessment and Method Statement (SRAMS) process to minimise network disturbance.
- Optimising our routine water mains flushing programme.
- Enhancing our proactive communication with customers over both possible discolouration linked to planned works, and more recently to reactive issues.
- Continuation of our business-as-usual Mains replacement/rehabilitation programme including service pipe replacement where appropriate.

Our forecast performance for the final two years of AMP7 is to see a continued downward trend in customer contacts as seen in the last couple of years. The PR19 PC definition is different to that proposed for PR24 and therefore the OUT6 and OUT8 tables match the current performance table in the commentary for the PC.

There is a very slight difference in forecast values from the APR 2022-23 based on a set downward trend in performance rather than a fixed number of contacts.

	2023-24	2024-25
FD target	1.03	0.93
Forecast performance	1.12	1.10
Difference	-0.09	-0.17
Underperformance payment – standard (£m/unit)	-0.603	-0.603
Calculated outperformance/underperformance	-0.054	-0.103

4.2.7. Tackling water quality at home and in the workplace

Rationale for forecast performance: The score achieved for this PC in 2022 was 18,596. This represented the first full year of activities since the pandemic and associated lockdowns that restricted our ability to complete investigations and visits. We have therefore based our forecasts on this full year performance.

	2023-24	2024-25
FD target	18297	18297
Forecast performance	18596	18596
Difference	299	299
Outperformance payment – standard (£m/unit)	0.000011	0.000011
Calculated outperformance/underperformance	0.003	0.003

4.2.8. Lead communication service pipes replaced (Wessex Water assets)

Rationale for forecast performance: Our focus is on delivering the cumulative number of lead communication service pipes replacement by the end of AMP7. Funding is in place to meet the target this year and with a small level of cumulative outperformance from 2021 we have forecast performance in the final year of the AMP to meet the 9,000 cumulative total.

As per the APR and this rational, we are forecasting performance as per the table below:

	2023-24	2024-25
FD target	2210	2210
Forecast performance	2210	2109
Difference	0	101
Underperformance payment – standard (£m/unit)	-0.006	-0.006
Outperformance payment – standard (£m/unit)	0.007	0.007
Calculated outperformance/underperformance	0.000	-0.061

4.2.9. Restrictions on water use (hosepipe bans)

Rationale for forecast performance: In 2022-23, despite the driest start to the year since 1976 with 62% of the average rainfall between January and August, customers were not subjected to temporary use bans. Our Drought Plan was activated with carefully managed supply and demand side actions throughout the dry period, meaning we were able to keep our groundwater levels at 1b for the duration of Summer.

Table 1 Drought Triggers timeline

Drought Trigger	Reservoirs	Groundwater	Overall position
Normal Operation	Since start of 2022	Since start of 2022	Since start of 2022
Level 1a	08/07/2022	10/06/2022	10/06/2022
Level 1b	22/07/2022	08/07/2022	08/07/2022
Level 2	12/08/2022	-	-
Level 1b	28/10/2022	-	-
Level 1a	04/11/2022	13/11/2022	04/11/2022
Normal operation	11/11/2022	18/11/2022	11/11/2022

It is now 47 years since a hosepipe ban was last imposed in the region in 1976. We do not expect to implement hosepipe bans in either 2023-24 or 2024-25.

4.2.10. Abstraction Incentive Mechanism (Mere)

Rationale for forecast performance: The flows in the Shreen and Ashfield were monitored throughout the year to enable appropriate actions to be taken in a timely manner. The dry start to the year meant that the AIM window started earlier than usual in 2022-23. The dry weather continued throughout the summer and meant that the AIM window did not close until November 2022. Overall, Mere was under AIM restrictions for 183 days, which is 80 days more than last year. We have therefore based our forecast performance for the last two years of the AMP on the three-year average performance seen so far in AMP to allow for the variation in conditions.

This matches our APR 2022-23 forecast with the small outperformance payments associated.

	2023-24	2024-25
FD target	-100	-100
Forecast performance	-289	-289
Difference	189	189
Outperformance payment – standard (£m/unit)	0.000027	0.000027
Calculated outperformance/underperformance	0.005	0.005

4.2.11. Natural capital: improve Sites of Special Scientific Interest (SSSI sites)

Rationale for forecast performance: Against the master list of SSSI sites and appropriate actions agreed with Natural England as part of the July 2020 APR, we had delivered 60 of the 90 actions or 67% as at the end of 2022-23. With actions planned in the year we forecast to complete 86% by the end of March 2024, earning a small outperformance payment. We forecast to complete all actions as targeted by the end of March 2025, with no underperformance payment.

	2023-24	2024-25
FD target	80	100
Forecast performance	86	100
Difference	6	0
Outperformance payment – standard (£m/unit)	0.000170	0.000170
Calculated outperformance/underperformance	0.001	0.000

4.2.12. Abstraction Incentive Mechanism (Stubhampton)

Rationale for forecast performance: The groundwater level at Four Acres is monitored daily throughout the year to enable appropriate actions to be taken in a timely manner, when flows or levels are low. The weather has an impact on levels and Stubhampton was under AIM restrictions for 283 days in 2022-23. This was less than in 2021-22 largely due to the wet weather between November and January which kept the site unrestricted for longer. We have therefore based our forecast performance for the last two years of the AMP on the three-year average performance seen so far in AMP to allow for the variation in conditions. This matches our APR 2022-23 forecast with the small outperformance payments associated.

	2023-24	2024-25
FD target	-45	-45
Forecast performance	-185	-185
Difference	140	140
Outperformance payment – standard (£m/unit)	0.000021	0.000021

Calculated outperformance/underperformance	0.003	0.003

4.2.13. Delivery of security (non-SEMD)

Rationale for forecast performance: With a delivery plan in place for the remaining deliverables due in the last two years of the AMP, and some work already underway, we do not expect any delays to delivery, and therefore no underperformance payments. As reported in our APR 2022-23 submission.

4.3. Wastewater bespoke PCs from PR19

4.3.1. Customer property sewer flooding (external)

Rationale for forecast performance: In our APR 2022-23 we forecast a slightly better position than reported in 2022-23 for 2023-24 based on the improvement seen with a further decrease in 2024-25 with additional investment.

In completing the PR24 business plan work we have revised this forecast. We have looked at the performance delivered from base expenditure over the last five years and our forecasts for the final two years are based on that five-year average performance. This takes account of the variations in weather conditions seen this AMP to date as well as some of the perceived trends since the pandemic.

Our view is that the additional investment we will be making in the latter part of this AMP will most likely have an impact early in AMP8 rather than in the final years of this AMP.

	2023-24	2024-25
FD target	16.03	15.68
Forecast performance	17.06	16.93
Difference	-1.03	-1.25
Underperformance payment – standard (£m/unit)	-0.800	-0.800
Calculated outperformance/underperformance	-0.824	-1.000

4.3.2. Sewer flooding risk

Rationale for forecast performance: For two of the three years in AMP7 so far, we have achieved performance within the deadband collar and incurred no underperformance payments.

In 2022-23 we exceeded both the target and deadband performance as a result of very wet weather particularly in the last 6 months (October 2022 to March 2023) with rainfall at 130% of the long-term average, and the wettest March for over 40 years.

Our focus is very much on reducing internal and external sewer flooding and therefore the risk of flooding and we would forecast performance again within that Deadband value stated for the final two years of AMP7, with no further underperformance payments.

	2023-24	2024-25
FD target	50,651	50,651
Forecast performance	55,715	55,715
Difference	-5,064	-5,064
Underperformance payment – standard (£m/unit)	-0.000180	-0.000180
Calculated outperformance/underperformance	0.000	0.000

4.3.3. North Bristol Sewer Scheme – Trym catchment

Rationale for forecast performance: The Trym scheme was delivered and signed-off as operational in December 2022, as per the APR. Our external technical auditor, Mott MacDonald, have reviewed this PC as part of their assurance. We have included confirmation in our assurance report provided as part of the published APR.

No further delivery due in the AMP and therefore no underperformance payments due.

4.3.4. Greenhouse gas emissions

Rationale for forecast performance: With performance trending slightly better than target in the AMP to date and with an underperformance incentive only we forecast to meet target and have no underperformance payment for this PC in APR 2022-23.

Although we have reported below target in the AMP with a reducing target, we have committed to focus on meeting this improving position.

	2023-24	2024-25
FD target	105	101
Forecast performance	105	101
Difference	0	0
Underperformance payment – standard (£m/unit)	-0.0195	-0.0195
Calculated outperformance/underperformance	0.000	0.000

4.3.5. Working with communities to improve bathing water experience

Rationale for forecast performance: Reporting for this PC is on a cumulative basis and with plans developing for 2023 we forecast in the APR 2022-23 a total of 42 projects for year 4, with a small outperformance payment. With relationships established we forecast to meet the target number of beaches with community projects in place in year 5, with no resulting out or underperformance payment.

	2023-24	2024-25
FD target	40	47
Forecast performance	42	47
Difference	2	0
Outperformance payment – standard (£m/unit)	0.000700	0.000700
Calculated outperformance/underperformance	0.001	0.000

4.3.6. Working with catchment partners to improve natural capital

Rationale for forecast performance: Although there has been some outperformance seen against this PC, with some projects coming to an end we have forecast to meet the target only in 2023-24 and 2024-25, with no resulting outperformance payments.

	2023-24	2024-25
FD target	37	37
Forecast performance	37	37
Difference	0	0
Outperformance payment – standard (£m/unit)	0.00330	0.00330
Underperformance payment – standard (£m/unit)	-0.00400	-0.00400
Calculated outperformance/underperformance	0.000	0.000

4.3.7. Satisfactory sludge disposal

Rationale for forecast performance: Satisfactory sludge disposal performance has been at 100% for numerous years barring 2020. In February 2020, following a period of heavy rain we experienced a stockpile slump resulting in a pollution incident.

The risk of stockpile slumping had already been identified and construction was at the time, in progress for sludge storage barns in two locations to provide additional capacity to store sludge during extreme conditions and mitigate the risk of slumping stockpiles on agricultural land. These works were completed, and the barns were operational by the end of 2020.

On the basis that this was an exceptional occurrence and we have returned to 100% compliance we have set our forecast compliance at 100% for the remaining two years of the AMP.

	2023-24	2024-25
FD target	100.00	100.00
Forecast performance	100.00	100.00
Difference	0.00	0.00
Underperformance payment – standard (£m/unit)	-0.098	-0.098
Calculated outperformance/underperformance (£m)	0.000	0.000

4.3.8. Reduce frequent spilling overflows (non-WINEP)

Rationale for forecast performance: Our focus is on delivering our statutory obligations of investigations and improvements by 2025 under the Storm Overflow Assessment Framework (SOAF) and the WINEP.

Although our aspiration is to deliver the improvements ahead of the 2025 regulatory dates, so we can deliver some non-WINEP schemes in the final year of the AMP, we are not able to forecast a number with any certainty as yet.

	2023-24	2024-25
FD target	0	0
Forecast performance	0	0
Difference	0	0
Outperformance payment – standard (£m/unit)	0.055	0.055
Calculated outperformance/underperformance (£m)	0.000	0.000

4.3.9. Length of river with improved water quality through WINEP delivery

Rationale for forecast performance: This PC relates to the WINEP as at 31/03/2019 and is limited to only those schemes identified as 'Green' certainty status in that version, along with their completion dates. This is irrespective of any amendments in later versions of the WINEP, as advised and/or agreed with the Environment Agency.

	2023-24	2024-25
FD target	167.4	399.9
Forecast performance	170.7	397.0
Difference	3.3	2
Underperformance payment – standard (£m/unit)	-0.017	-0.017
Calculated outperformance/underperformance	0.000	-0.049

In our APR 2022-23 we forecast performance for 2023-24 as shown in the table above based on delivery of Broadway (by the agreed EA date of 22/12/2023 – changed from the WINEP 2019 date of 22/12/2021) and of Ilminster STW, brought forward from 2024 as agreed with the EA. We do not earn any outperformance payments.

In 2024-25, again as above, we forecast to be slightly short of target and therefore a resulting underperformance payment. This is due to ongoing third-party constraints, and we are seeking a major alteration for a revised AMP8 completion date for Ubley STW, which is due for delivery currently in 2024-25. If agreed, we will be c.3km short of our targeted length in 2024-25.

4.3.10. Km of river improved (non-WINEP)

Rationale for forecast performance: This PR19 PC is based on exploiting opportunities to reduce the amount of unwanted nutrients in rivers beyond our statutory requirements. In the three years of the AMP so far, we have not passed the gateway for phosphorus reduction (the 2013-2017 average phosphorus load discharged) before any outperformance can be claimed. The forecast based on this is that we will not meet the gateway in the remaining two years of this AMP.

Any outperformance achieved to date has been from reduction of nitrogen in our rivers. The EA are now challenging farmers to make more progress direct, so the opportunity for us to deliver further improvements that meet the PC definition has reduced. In discussions with farming representatives there may be an opportunity for some reduction in 2023 over and above their obligations but we are unable to confidently forecast a km length achievable.

The forecast for the final two years against this changing environment has therefore been set at the 0.0km targeted performance, with no outperformance payments. In line with the APR 2022-23 forecast.

	2023-24	2024-25
FD target	0.0	0.0
Forecast performance	0.0	0.0
Difference	0.0	0.0
Outperformance payment – standard (£m/unit)	0.010	0.010
Calculated outperformance/underperformance (£m)	0.000	0.000

4.3.11. WINEP requirements (Bristol (Avonmouth) STW)

Rationale for forecast performance: Since submission of the PR19 business plan, the design Full Flow to Treatment (FFT) value has increased at our Avonmouth works, with a subsequent substantial increase in cost and time. As identified in our PR19 business plan submission, the STW is also forecast to exceed its Dry Weather Flow (DWF) permit towards the end of AMP8/beginning of AMP9, necessitating in a new DWF permit and a further increase to the FFT permit.

We have had discussions with both the Environment Agency (EA) and Ofwat regarding an extension to the WINEP completion date from 31/03/2025 to 31/03/2028, so as to provide additional FFT capacity to bring forward the AMP8/9 DWF increase scheme.

The EA agreed on 28/07/2022 to amend the completion date in the WINEP to 31/03/2028. As the PC relates to the live WINEP, we thus forecast in APR 2022-23 to be “0” months delay to the agreed completion date, with no resulting underperformance payment in 2024-25.