

AffinityWater

AFW02 - Past performance 2020-2025



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Past performance, 2021 to date.

The following document provides a review of our performance against each performance commitment set at PR19 and a forecast of where we expect to be at the end of the period. It provides a summary of the insights and progress we have made to date and an overview of the work we have undertaken to improve our performance in each area.

Since 2020 we have seen a steady improvement in the majority of our metrics. We recognised we faced challenging targets at PR19 and needed to make a step change in performance, so set ourselves stretching improvement plans to achieve the outcomes required. We have been working hard to meet our commitments by 2024-25 and are forecasting we will achieve 82% of our performance commitments by the end of the period.

Key Highlights to date include:

- Our best ever Interruptions to Supply performance, improving from a historical high of 32 mins in 2017-18 to 3 mins 49 in 2021-22
- Our lowest number of taste, odour, and appearance customer contacts
- Delivered a consistently high performance in CRI, maintaining upper quartile
- Being the leading company in number of AIM Source sites
- Delivering the largest leakage % reduction of any water company to date (15% by 2023).

Introduction

The last few years have brought significant challenges. The period began with the UK withdrawal from the EU, causing disruption in all areas of the business. Financial uncertainty combined with concerns over labour and material shortages were swiftly followed by the onset of a global pandemic. Covid 19 affected all aspects of life and the workings of the industry. Offices closed, schools shut with many customers and staff suddenly working from home or furloughed. The impact to the business was felt immediately and new ways of working had to be found. Significant sections of our commuter belt customers around London were suddenly remaining within area and using more water within their homes and at different times to the established patterns and trends. The onset of the pandemic also coincided with a significant hot and dry summer further exacerbating changes in usage and the amounts of water used.

Further hot and dry weather was experienced in the summer of 2022. Despite the hottest weather in 30+ years, reaching temperatures of up to 40°C we managed to maintain supplies without the need to implement temporary use bans.

The pandemic has significantly affected continued working arrangements of large portions of our customer base, changing working conditions, whether remaining at home or only returning to offices on a part time basis. The new working conditions appear to be set to continue into the future and impact demand patterns until now unseen.

The easing of restriction in 2021 and an anticipated return to a 'new normal' was met with the political unrest, a war in Ukraine, a resultant energy crisis and a downturn in the economy.

Despite these unprecedented and unpredictable situations, through our emergency and resilience plans, we ensured customers continued to receive a service with minimal disruption while at the same time ensuring the safety of our colleagues.

Our PR19 performance commitments.

At PR19, 28 performance commitments were set, ten common commitments across the industry, including four financial ODIs. An additional 18 bespoke commitments were agreed, of which nine had financial penalties and rewards.

While many of the common performance commitments were reported in prior years, in many cases the metric definitions themselves were changed. Companies shadow reported these changes for up to 3 years prior to their commencement, working to meet the new common definitions.

Current performance to 2023 - 2023

Line description	Unique reference	2020-21 (Year 1)	2021-22 (Year 2)	2022-23 (Year 3)
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Common PCs - Water (Financial)				
Water quality compliance (CRI)	PR19AFW_W-A1	1.31	0.87	1.09
Water supply interruptions	PR19AFW_W-D1	00:05:49	00:03:43	00:12:53
Leakage	PR19AFW_W-B1	1.7	10.5	15.8
Per capita consumption	PR19AFW_R-B1	-4.3	-4.1	-4.3
Mains repairs	PR19AFW_W-D4	155.8	100.2	169.6
Unplanned outage	PR19AFW_W-D3	1.65	1.19	2.09

Bespoke PCs - Water and Retail (Financial)				
Environmental innovation - delivery of community projects	PR19AFW_W-B2	0	3	6
Reducing the total number of void properties by identifying false voids	PR19AFW_R-C4	2.37	2.23	2.02
River restoration	PR19AFW_W-B3	7	20	23
Abstraction reduction	PR19AFW_W-B4	0	0	0
Number of sources operating under the Abstraction Incentive Mechanism	PR19AFW_W-B5	-304.31	-429.63	-1,277
Properties at risk of receiving low pressure	PR19AFW_W-D5b	196.85	155.466	150.934
Number of occupied properties not billed (Gap sites)	PR19AFW_W-C2	118	74	65
Unplanned interruptions to supply over 12 hours	PR19AFW_W-N1	538	477	6070
Customer contacts per 1000 population for Water Quality (taste, odour & appearance)	PR19AFW_W-N2	0.83	0.75	0.56

Common				
Risk of severe restrictions in a drought	PR19AFW_W-D2	67.7	61.5	67.7

Priority services for customers in vulnerable circumstances - PSR reach	PR19AFW_R-N3	4.7	6.5	8.3
Priority services for customers in vulnerable circumstances - Attempted contacts	PR19AFW_R-N3	62.3	90.4	98.2
Priority services for customers in vulnerable circumstances - Actual contacts	PR19AFW_R-N3	24.9	46.6	55.5

Bespoke PCs				
Average time properties experience low pressure	PR19AFW_W-D5a	05:02:48	01:35:05	02:33:26
Customers in vulnerable circumstances satisfied with our service (receiving financial help)	PR19AFW_R-C2	98	97%	93
Customers in vulnerable circumstances who found us easy to deal with (receiving financial help)	PR19AFW_R-C3	97	96%	92
BSI accreditation	PR19AFW_R-N4	Maintained	Maintained	Maintained
IT resilience	PR19AFW_R-N6	949	948.54	731
Customers in vulnerable circumstances satisfied with our service (not receiving financial help)	PR19AFW_R-N7	98	96%	92
Customers in vulnerable circumstances who found us easy to deal with (not receiving financial help)	PR19AFW_R-N8	97	95%	90
Value for Money Survey (fairly / very confident in bill amount)	PR19AFW_R-N9	7.48	7.16	7.34
WINEP Delivery	PR19AFW_NEP01	Met	Met	Met

C-Mex	PR19AFW_R-C1	77.88	76.57	74.59
D-Mex	PR19AFW_W-C1	84.39	85.54	86.36

Performance commitments met*	19	20	20
% of performance commitments met*	68	71	71

By the end of 2025, we are forecasting that we will meet 23 of our performance commitments. We are currently forecasting failure for the five following metrics, with CRI reporting below the deadband.

- PCC
- Low pressure
- Severe restrictions in a drought
- VFM
- Unplanned interruptions >12 hours

Company comparisons with the industry

While individual performance has been addressed against each metric below, it is important to understand our relative performance to other companies and where we sit overall as a performing company.

Using 8 common performance commitments metrics which provide a cross section of our business and are of most important to our customers, we have tracked ourselves against other companies to understand our position. Through these scores we can see that we have work to do to become an upper quartile company overall, although we are clearly on an improving trend and continue to work hard to further this.

For each of the (8) water metrics, the top performer is scored as 1 and bottom as 17. Averaging the results across the 17 main companies. (Lower score better)

Progress has been made in a number of metrics across

1. C-MeX
2. PCC
3. Leakage
4. Supply Interruptions (I2S)
5. Mains Repairs
6. Unplanned outage
7. CRI
8. D-MeX

Average score by ranking from base year. (Lower score is a better relative position)

Metric	units	19-20) Base year	20-21	21-22	22-23
Leakage	l/p/d	11	11	9	6
Leakage	M3/km	16	15	15	12
PCC	l/p/d	17	16	15	17
Supply interruptions	hh:mm:ss	13	8	5	10
CRI	Score	6	4	4	5
Mains repairs	Per1,000km/main	12	13	5	12
C-Mex	Position	15	15	14	14
Unplanned outage	%	11	11	6	11
Average position		12.6	11.6	9.1	10.9

Leakage, PCC reduction and D-MeX cannot be compared to their respective base years, as the data is not consistent, however average figures can be seen for each year.

D-Mex	Position	-	10	8	10
Leakage reduction	%	-	10	3	1

PCC reduction	%	-	9	6	9
Average position		-	9.7	5.7	6.7

Taken in the round, (and understanding 2021-22 performance in the context of extreme weather) the scores show we are continuing on an improving trend in performance.

Combined metrics	-	12.6	11.2	8.2	9.7
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We are committed to the continuation of our improving performance and dedicated significant effort to understanding the root causes of both our good and bad performance. We have looked to understand and learn from our past delivery and historical performance. Through analysis we have identified specific actions plan for improvement, key points of which have been noted when discussing individual metrics below.

Common performance commitments

CRI: Compliance Risk Index.

CRI is a DWI measure which looks at water quality across a number of metrics. The annual score comprises of the sum of the individual CRI scores for every compliance failure in the reported year. The requirement is to have zero exceedances in the year with a deadband performance of less than two.

We take water quality seriously and have been carrying out improvement works for many years. In 2017 we were reporting at 6.66 and were in the bottom quartile of companies across the industry. This was not acceptable, and we took action.

In 2020, we were one of only seven companies whose performance was below the dead-band of 2 (with none of the seventeen major water companies achieving the performance level of zero).

In 2021 we were one of only six companies to achieve performance below the dead-band. Our performance improved from the prior year by 26% with a score of 0.969.

Our performance has continued below the deadband in 2023 with only six of the major companies once again reporting below the deadband.

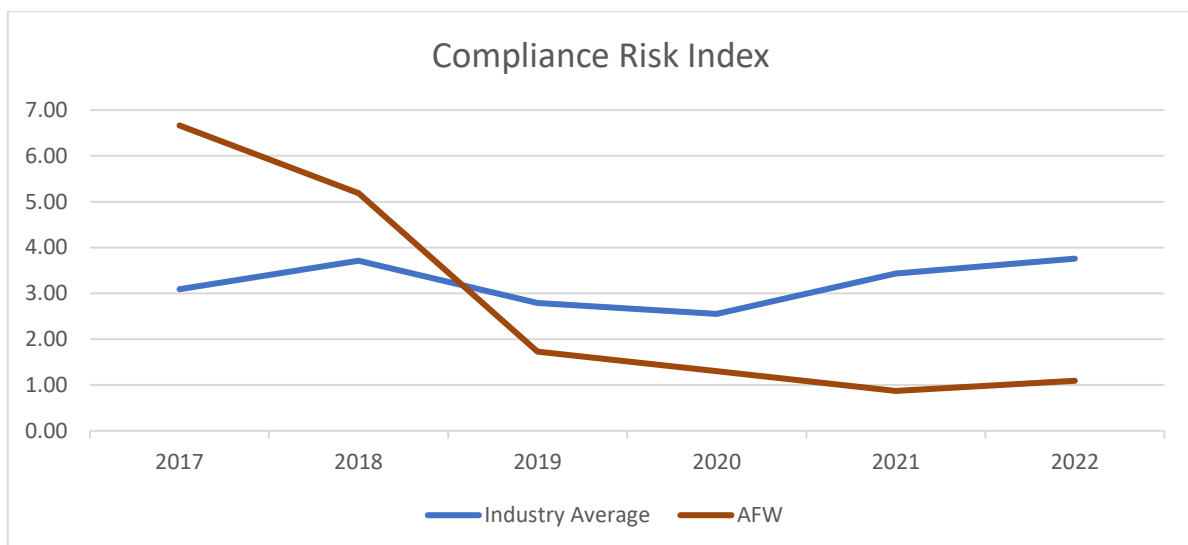
Since 2020 we have maintained our performance score below 2.0 and have remained in the upper quartile of companies, placing us 4th or 5th out of the seventeen major water companies.

Whilst there is no financial reward mechanism for the CRI commitment, Water quality is at the core of our business and is the most important of our customer priorities. We work hard to understand its drivers and our ambition to be a leading company is essential to informing and developing our future strategies.

Impact of Covid-19

As restrictions were put in place across the country, access to premises particularly customers' homes for sampling was prevented. During this time alternative solutions were adopted to ensure we met the sampling requirements. Colleagues' homes, commercial premises and company properties were used for sampling.

Sampling did not resume at customers properties until September 2021, at this time stringent Covid safety measures were put in place to allow staff to safely enter premises. (It should be noted that zonal sampling results in 2021 scored slightly better as they were not taken at customers taps)



(Source: <https://www.dwi.gov.uk/what-we-do/annual-report/>)

Affinity Water	2016	2017	2018	2019	2020	2021	2022
CRI	2.48	6.66	5.18	1.73	1.31	0.87	1.09

Our improvement journey

Our CRI journey began in the previous price control periods where significant improvements were implemented. 2019 saw our biggest step change in performance as we improved our systems and processes for managing water quality. We continue to learn from events and near misses both within and outside of our business and these are incorporated into our actions plans.

Our ambition throughout this period and into 2025-30 is to maintain a leading position in water quality, continuing to inspire confidence with both our internal and external stakeholders.

The key actions taken over in the period to date:

- Maintained sampling regime - during lockdown we were unable to take samples at customers taps. To ensure samples were taken, we used staff homes and office facilities. This ended in Sept 2021
- Improvement of sampling facilities at our sites
- Took reservoirs out of supply as soon as a coliform was identified to reduce the risk for customers
- Isolating, inspecting, and refurbishing storage assets that hadn't been taken out of service for a number of years, including Hills and Bulls Green.
- Learning from prior years CRI failures and events and implemented dedicated improvement plans
- Using insight from other water companies' events, identified in the DWI Chief Inspectors Reports and engaging across the industry to understand 'lessons learnt'
- Implemented companywide training on the importance of CRI, hygiene sample practises, awareness of wider sample environments and escalation of potential risks.
- Initiated a CRI programme with our Catchment Management Team. Working with local communities, landowners, and users to identify pollution risks and support alternative land management strategies to avoid risks materialising
- Promoted 'Love where you work mentality', ensuring workspaces were clean and maintained.

Our continuing improvement programme focuses on issues that can affect CRI, such as reservoir inspections, sample lines, site hygiene and staff awareness.

I2S: Interruptions to supply (average minutes)

We have two interruptions to supply performance commitments, the common commitment of average minutes lost per customer and the bespoke commitment of unplanned interruptions >12 hours.

The average minutes metric was designed to incentivise a minimum number of customers and duration of supply interruptions such that reliability of supply was improved and there were reduced negative social and public health impacts on customers.

At PR14, due to the awarding of enhanced business plan status, Affinity Water was the only company that did not have the ≥ 3 -hour average minutes interruption performance commitment. As a result, we were not required to deliver this metric, and performance was not as good as other water companies when regulatory

targets were eventually set for 2020 - 2025. For context, in 2016-17 we were the worst performing company against this performance indicator.

As shared at PR19, we developed a clear action plan for improvement in I2S and proposed a significant cultural shift in the understanding to ensure everyone was committed to a 'water always on' mentality.

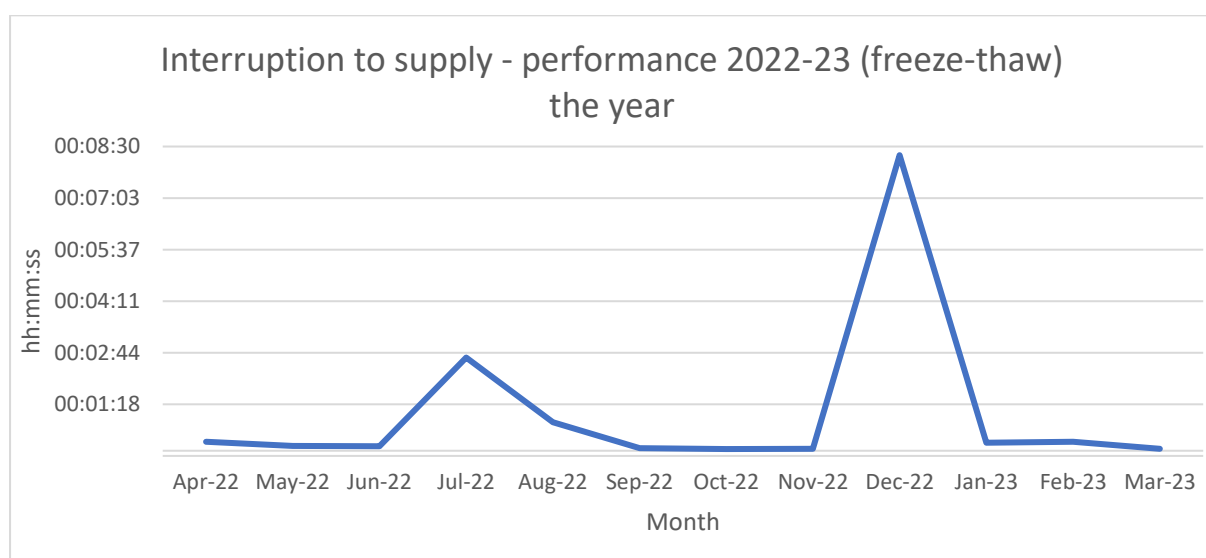
Since 2017-18 performance has steadily reduced improved year on year. In 2021-22 we achieved our best ever performance, placing us 5th in the industry. Despite the 2022-23 winter freeze thaw disrupting this trend, we are on track to achieve further reductions in 2023-24.

2022-23 freeze-thaw

The freeze-thaw event in December 2022 had a significant impact on I2S performance, a trend seen across the country. The effect of these isolated two weeks added 8 minutes to our customer interruptions, which was greater than for the remainder of the year (including the effects of the summer high temperature), and higher than the previous years' total performance).

We have extensively reviewed our approach to the 'freeze-thaw' event to understand its effects and ensure we enacted all emergency plans and contingency activities as effectively as possible. We published our review of the event on our website [Dec-22 Freeze-thaw report](#)

Despite successful management of the event and limited direct customer disruption overall, the consequences of the weather for the interruptions to supply performance commitment are evident. Had the freeze-thaw event not occurred, we would have maintained our performance trend in line with the prior years' performance and achieved the reducing target for the year.



We know that external factors such as weather and third-party interactions have a significant effect, with the ability of one large incident to 'blow the target'. An individual years' performance cannot be viewed in isolation, it must be understood against the prevailing weather conditions of the particular year. We are however committed to achieving and maintaining upper quartile performance against the industry and to achieving an improving trend as we progress through this period and into the next.

Our improvement journey

We understood significant improvements were required and the 'blockers' to good performance needed to be understood. The causes of supply interruptions in 2015 - 2020 were analysed to form the basis of short, medium and long term delivery plans. External verification of our analysis was completed to ensure our plans were credible and robust.

Our analysis identified key themes:

- Lack of visibility and poor escalation
- Inconsistent decision making out of hours
- Misalignment of supply chain objectives
- Speed of response of our people, plant, and equipment
- Focus on repair instead of restoration of supplies and customer impact.

From these themes, 4 key delivery pillars formed the foundation of the strategy.



1. Early visibility of interruptions

Historically, customer contacts had been relied upon to notify us of a supply interruption. We therefore needed to harness data insights into a single platform to identify interruptions in real time, allowing immediate diagnosis and rapid response. This was enabled by:

- Installation of pressure loggers at the critical point of each of the 1300 District Metered Areas (DMAs) with pressure and flow data returned every 15 minutes into 'Waternet', our network telemetry system.
- Creation of a new 24/7/365 'Network Control Desk' to monitor and control the network performance. This broke the previous reliance on customer notification of an interruption.
- Development of an industry leading Situational Awareness (SA) platform to provide a single view of network activity, bringing together customer calls, jobs,

weather, sensor data, field team activity, asset information and alarms. This model improves notification of events and reduces response times through early identification.

2. Rapid restoration of supplies

The transition required a fundamental change in culture, mindset, and approach. The immediate response to any interruption is now the efficient restoration of supplies and repair of the asset. Previously, the focus had been on repairing and then restoration. To deliver this step change, the following were needed.

- **A Regional operational model:** We transitioned from a centralised model to a regional operating model. Regional targets were established, accountability and reporting occurred at a granular level. This breakdown in functional silos and local ownership and accountability was a key factor in the step change in performance.
- **Restoration team:** We expanded the team's capabilities and invested in leading techniques from across the industry including line stopping (the live insertion of a temporary 'stopper' into the main), large pumps, and machine-deployed pre-chlorinated pipework.
- **Working hours:** extend the core operating hours of key front-line teams from Monday-Friday 08:00-16:00 to Monday-Friday 08:00-19:30 and Saturday-Sunday 08:00-16:00. This allowed quicker response times across events. We also looked to recruit additional technicians to ensure the right levels of resource were across our regions to deliver an enhanced response.
- **Contractor response times:** Contracts facilitating a move from 4 contractors to 2, aligning contractors' objectives and contractual obligations to our performance commitments. This shortened response time from 2 to 1 hours. This was underpinned with financial KPIs to incentivise performance.
- **Learn fast:** Review every incident which extended beyond 3 or 12 hours. This has allowed for rapid identification of further improvements and opportunities.

3. Minimising the impact of trunk main bursts

Trunk main bursts remain the biggest driver of events which have a detrimental impact on both of our supply interruption measures. A programme was delivered to understand the effects of trunk mains that, if isolated and after available rezoning, would result in >2000 properties being interrupted. Mitigations included increased connectivity and additional control fittings. 373 sections were identified, and solutions identified. Additionally, 335 viable contingency plans were produced for 97 trunk mains that are available in the event of an emergency.

Discussed further under 'mains repairs', we have invested to proactively replace/maintain trunk mains that have been identified as those that repeatedly fail, or, have the potential to cause a significant disruption to our customers.

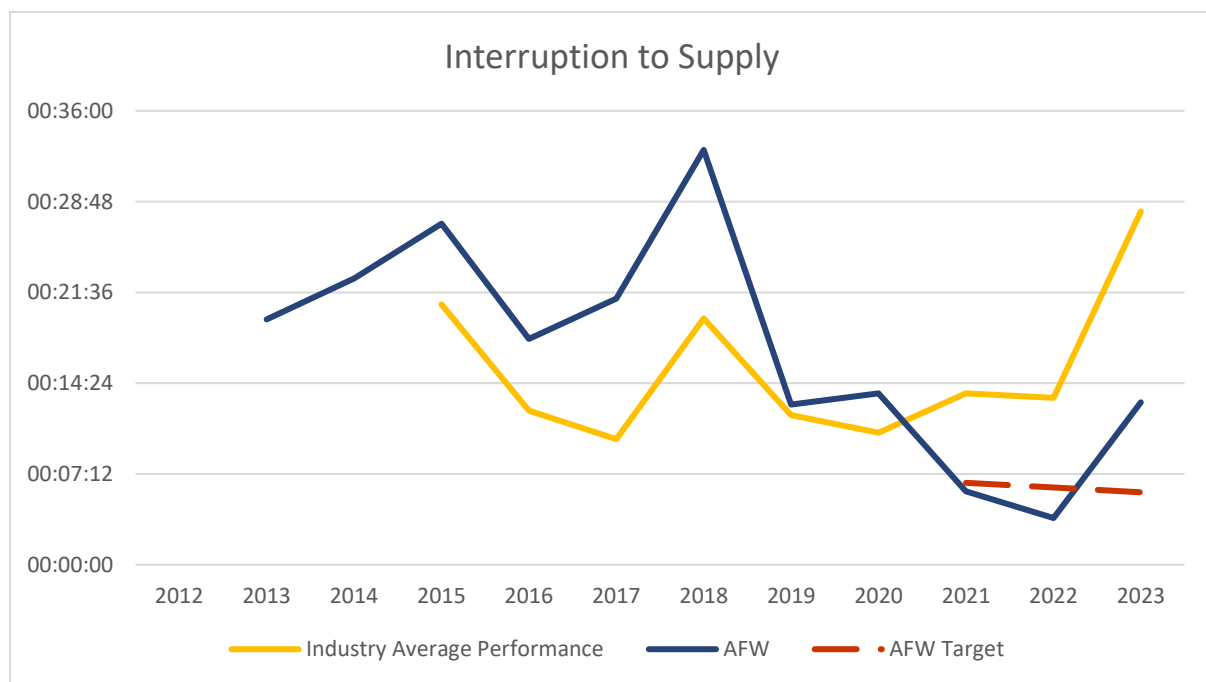
4. Interruptions for planned works

Taking mains pipes out of supply is essential for renewals, repairs, and maintenance. This has the potential to affect customers supplies. At the outset, we determined that all planned works must look to contingencies in advance, alternative working methods, or ways of keeping customers in supply. In 2019-20 interruptions for planned works contributed over 2 minutes to our interruption times, by 2020-21 this was effectively removed.

Industry comparisons

We have made significant progress and had our best performance in 2021-22 to date. The industry averaged a performance of 13 minutes in 2020/21 with upper quartile performance averaging 4 minutes, our performance of 3 minutes 43 placed us as an upper quartile performer (5th position).

The freeze thaw caused significant impact in 2022-23. Despite a drop in 'company position' we were still performing above industry average for the year. Excluding significant weather events, we are forecasting that we will achieve the target for the remaining years to 2025 and return to upper quartile performance.



Mains repairs

The 2020 – 2025 targets set for the number of mains repairs was challenging, the first year, 2020-21 represented a step change reduction of over 550 in the number of repairs allowed compared to prior years. These reductions were against a background of at the same time needing to achieve a significant reduction in the volume of water lost through leaks. As is well established, increasing leakage detection has consequential effects on main repairs.

The number of mains repairs is one of a number of useful indicators over time of infrastructure asset health, and we have reduced our numbers significantly over the last fifteen years. However, fluctuations will occur year-on-year in the number of repairs carried out depending on prevailing weather conditions, particularly summer highs and winter lows.

Normalising for weather, our reduction in the number of mains repairs over time has been achieved by targeted renewal/maintenance of mains that have proved most prone to bursting, reducing high night-time pressure in the network, and reducing the volatility and occurrences of surges. We have continued to focus on these areas throughout the 2020 - 2025 period. It should be noted that mains renewals do not have an immediate noticeable effect on performance; rather renewals conducted in prior price controls result in ongoing benefits throughout the subsequent years as mains would have naturally deteriorated.

We accepted the PR19 targets with the understanding that based solely on weather, we anticipated a potential failure of the target in 2 of the 5 years.

Our consequential failure in 2020-21 was the result of two prolonged periods of sub-zero temperatures in the January and February causing a significant increase in the number of mains repairs. As a result of the weather, we carried out 519 more repairs compared to 2019-20. In 2021-22 we benefited from benign weather conditions.

2022-23 and the prolonged freeze-thaw of December 2022 saw mains burst increase exponentially. Prior to the December 2022 event, we were on track to achieve the year target despite the extreme summer weather. During December, we experienced more mains bursts than the 'beast from the east' event, carrying out 237 and 212 repairs in week one and two respectively of the free thaw period. This is the highest breakout we have seen since recording this metric and is clearly an exceptional event.

At the onset of 2021-22 we revamped our burst steering group and created a programme of works to ensure we do all we can to meet the target. These included

- Working with the MET office to look at longer term forecasting and predictions of freeze thaw events to enable us to prepare as much as possible,
- Creating triggers as part of our Seasonal Readiness plan, to move to a different way of operating the network during 'high risk' periods, and
- Engaging with consultants to look at our overall strategy and Network Calming programmes to identify areas of improvement

Industry comparisons

Against the backdrop of all company reporting, our burst rate per 1,000km is typically reporting slightly below average in 12/13th position. In 2020-21 we had double the number of mains repairs (per 1000km) compared to the best performing company. While in relative performance this appears significant this is in part due to external

factors of geography, ground conditions, hydraulic necessities and weather which does not influence all companies equally.

In 2021-22 we reported a significant improvement relative to other companies. Our performance is heavily influenced by outside factors, and it must be noted that this performance was against a background of benign weather conditions. This is of particular note when viewed alongside the effects of 2022-23 where we reported as 13th position against other companies.

Comparisons alongside environmental conditions give a greater understanding of the extent to which weather conditions and the 'shrink-swell' soil effect influences performance. It can be seen on industry view this does not appear to have such a material effect on other companies. In January 2023 we submitted econometric modelling evidence to show the material effects of soil type and the shrink swell on mains repairs.

Our improvement journey

Throughout we have looked to improve and implement strategies to drive down bursts. To design a targeted action plan, it is essential to understand fully the causality of our bursts.

During 2021 we initiated an extensive deep dive investigation into past burst data to close the gaps we had on the likely causes of failures. The investigations reviewed the prior five year, along with soil type, traffic loading, weather, pressure, and other factors. We designed and built a robust statistical model showing likely primary and secondary causes of bursts across our area. Now accessible as a geospatial layer on our GIS system, we use it to identify specific areas to target for further supply optimisation, network calming and improvement activities.

Following this work, we have moved to almost real-time analysis burst tracking. This is undertaken by our new team of hydraulic experts in our control room who detect and remedy issues with pumps or PRVs causing transient pressure fluctuations. This enables proactive elimination of repeat bursts from clusters and 'hot spots' caused by underperforming assets. It also adds to our library of causality.

Forecasting weather patterns to inform working patterns and processes is essential. We have been working with the Met Office to use their Secli-firm tool, a long-range weather pattern predictor. Correlating historic weather patterns with demand and aiming to give a longer-term view of upcoming changes in demand. It is designed to enable better planning and resource management, allowing postponement of planned works without incurring last minute contractor costs, promoting steady and calm network operations through high-risk periods and enable deployment of more staff to be on hand to react to potential increases in bursts which would lead to disruption to our customers.

Early indications were positive, however work continues as it proved ineffective in providing long range foresight of the freeze-thaw in December 2022. We continue

working to adjust the parameters of the tool to make it more sensitive to our supply region and demand patterns.

While accuracy improvements continue, we are also working with the Met Office and the rest of the industry to explore other applications for the tool as part of the 'innovation competition' project.

Alongside weather forecasting, we have been developing a more robust burst prediction model, this uses previous burst data and real time weather to predict at District Meter Area (DMA) level where bursts are most likely to occur and at what rate. This will enable us to forecast more accurately, to plan jobs more effectively and have a pre-emptive view of risk and customer impact. This has been integrated into our Situational Awareness tool for visualisation.

To further reduce burst rates, we are looking at other technology, such as mobile applications that track valve operations and guide operatives on how slowly they should be turned, as well as high frequency loggers that detect transient spikes in pressures at DMA level. We have introduced calm network operator training, which has taken place not only with our own colleagues but also hydrant users such as the fire brigade.

Parallel to these improvements, we have invested to proactively replace/maintain 30km of trunk mains that have been identified as those that repeatedly failed, or, have the potential to cause an impact to our customers. A comprehensive trunk main maintenance policy has also been enacted to ensure that trunk mains provide the service they were intended to supply, i.e., valves are located and can be used for isolation, air valves do not cause bursts or air locks, washouts are available for return to service etc. Our new 'Trunk main maintenance' procedure outlines our strategy to have the majority of 'riskier' trunk mains regularly inspected and issues resolved as they arise:

- Single points of failure >2000 properties
- Strategic mains
- Mains adjacent to strategic infrastructure
- High bursting mains not in the renewal programme

During 2023-24, we commenced a proof-of-concept six-month trial with Smart Actuation. This will enable us to record real time valve operations, update asset data and provide user information valve operations to avoid transients. The trial started in June, and we anticipate a review of the benefits during our internal mid-year audits in November 2023.

Controlling main repairs is an ongoing challenge and reducing numbers year on year is increasingly difficult. With weather being one of the primary factors for success or failure we continue to look at other areas to improve our baseline performance such as network calming strategies.

Leakage

Leakage was a key component of our PR19 delivery strategy and a key driver in the period. We know this is important to our customers and essential to ensuring there is enough water in our network and the environment.

We committed to reducing leakage by 20% as set out in our WRMP19, this commitment followed a 15% reduction in 2015 - 2020. We understood that a step change in our approach was needed to meet this target and understood at the outset this would be a challenge.

A glide path to achieve the 20% by the end of 2025 was developed, with the knowledge that early year's individual targets may not be met. In real terms the greatest reduction in volume was required in the second year (almost 16MI/d vs less than 6MI/d in the remaining years) and the onset of 2020-21 provided little time to implement our improvement plans. While not directly affected by Covid, staffing and alternative ways of working all contributed to reduced efficiency.

Despite efforts our plans were not sufficient to achieve the first two years target, with a 1.9% and 10.8% reduction against the required 2.7% and 11.1%.

Our improvement journey

Our action plan as shared with Ofwat at the start of 2021-22, was based on a mix of leakage control activities and an increase in resources to identify and improve our agility in responding to and reducing the run time of leaks on our network.

Due to the importance of leakage reduction, progress against our performance has been carefully monitored throughout the period with updates and progress reported regularly to our leakage taskforce. This group is chaired by the Director of Asset Strategy with 2 weekly updates discussed by the Executive Management Team and monthly updates discussed with the Board. The group monitors performance indicators, short term resourcing and planning decisions, how we are addressing audit actions and longer-term planning, including our ongoing plans to 2025 and beyond.

In order to target the significant reductions required we have spent approximately £155m to tackle leaks in the period to date, this is £18m more than initially anticipated at the outset of the period.

Outside of our planned proactive leakage detection, we aim to fix 50% of visible leaks in 24 hours, 70% within 48 hours and 90% within five days so we can maximise the amount of water we save. We have also offered more free repairs to customers where there are leaks on the pipe supplying their home than we have done previously.

We have significantly increased our deployment of 'step testing' techniques – a series of short steps isolating sections of pipe – which allow our engineers to systematically work through district areas, opening and closing valves to isolate parts of the network to narrow down areas suffering from loss of water due to leakage.

Our action plan developed for 2020 -2025 will continue into AMP8 and looks to bring in new methods and technologies to maximise the benefits delivered both in the amount of water saved, managing visible leaks, and preventing operational activities that exacerbate them.

To facilitate leakage reduction, we have

- Installed 6000 additional pressure loggers in our network –these provide additional insight of our network to understand invisible leaks.
- Conducted Pressure Management activities –these have helped deliver calmer networks and prevent burst mains
- Implemented Digital Twins which has helped narrow leakage search in locating undetectable bursts through live impact assessments of our network
- Increased deployment of step testing

As laid out in our letter of December 2021, we also adopted 14 different leakage control activities to tackle leaks in our network. This has encompassed a mix of activities reflecting where the greatest gains could be won.

- **Customer Side Leaks:** To lower the threshold at which we offer a free repair on customer supply pipe leaks thus delivering a greater number of CSL repairs quicker
- **Pressure Management:** To deliver an additional 37 pressure management schemes
- **Step testing:** To undertake over 250 additional step tests thereby helping us pinpoint more leaks, quicker
- **Smart networks:** To develop and refine our digital capabilities to help pinpoint leaks more accurately and faster (including through the use of increased pressure logger data)
- **Acoustic monitoring:** To increase our overall acoustic logging capabilities including reviewing logger placement, trialling innovative technologies, and procuring additional resources
- **Commercial logging:** To install pressure loggers at an additional 50 sites to help feed our leak locator tool
- **Active Leakage Control (ALC) resource:** To increase the number of leakage technicians working to find leaks
- **Trunk main operations:** To develop an operating model and resource ourselves to undertake regular trunk main surveys and survey c.200km main per annum
- **Satellite leakage detection:** To trial the usage of satellite imagery and analysis of imagery to find leakage on 2,500km of main
- **Metering for operational efficiency:** To review areas historically categorised as too difficult to meter and assess (and where appropriate implement) meter solutions
- **Unbilled consumption:** To review (primarily non-Household) properties for unbilled consumption i.e., where usage is not in line with expected usage
- **Min. night flow methodology:** To move the period at which we measure Minimum Night Flow in WaterNet across all DMAs to gain a more accurate understanding of night flow.

- **Modelling resource:** To backfill modelling resource procured by the programme

Throughout the period we have continued to improve our compliance with the leakage and PCC convergence methodologies. This has enabled improvements in our accuracy of calculation and reporting of numbers.

Although we have made no alterations to the bottom-up leakage calculation methodology, we had previously highlighted inconsistencies in historical reporting of other areas of the water balance. Putting this right altered the values used for leakage post the maximum likelihood estimation (MLE) process, and therefore amended our baseline start position, from which our 20% leakage and 12.5% PCC AMP7 reductions are calculated and performance to date measured. Full details of the amendments were included in the APR23.

The impact of these changes for leakage resulted in a reduced the start position by 1.7 Ml/d. The overall impact of this was very minor with just a 0.4 Ml/d difference in the final 3-year rolling average value needed to achieve the 20% reduction.

The impact of these changes for PCC resulted in a reduced the start position by 1.1 l/p/d. The overall impact of this resulted in a 0.9 l/p/d difference in the final 3-year rolling average value needed to achieve the 12.5% reduction.

Convergence compliance

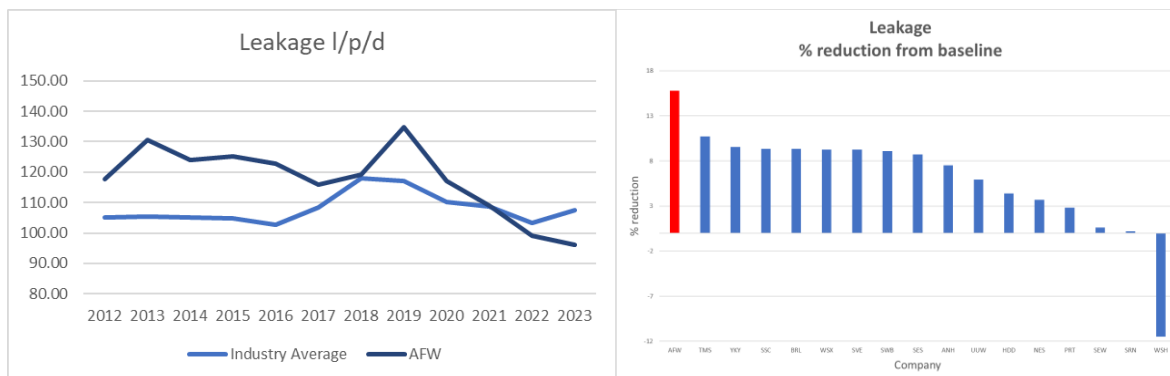
At APR23 we removed our last remaining red main component, again improving our overall compliance. We have in place a water balance action plan to address the remaining components not yet at green. These will be clearly laid out at APR24 on submission of 2023-2024 numbers.

Industry comparisons

Industry wide comparisons cannot be conducted solely on absolute volumes saved due to the relative size of different companies, they must therefore be understood as reductions from the base year, or leakage normalised by main length or customer numbers.

In line with our glide path plans, in 2021-22, (while not quite meeting our target), we had the 3rd highest leakage reduction in the industry and in 2022-23 achieved the largest leakage reduction of any company since the PR19 (convergence) methodology was adopted. We are focussing on meeting our 20% reduction target by 2025 and are confident we will do so.

In relative terms, the 2022-23 leakage position, on a litres per property basis this would also place us 6th position and just below upper quartile reporting against the industry. As the graphs demonstrate below, we have delivered a consistently improving leakage trend since 2019 at a faster trajectory than the rest of the industry.



Per Capita Consumption, PCC

PCC is a measure of customers water consumption in the home. Across the country home water usage (and therefore PCC) increased significantly with the effects of Covid-19. Lockdown was in force during the abnormally hot summer of 2020, when measured residential consumption increased at peak by 19% and unmeasured by 13% compared to base year. Continuing restrictions, furloughing, working from home and school closures through 2020 and 2021 all led to household demand increasing significantly.

In addition, the pandemic has fundamentally changed (or perhaps accelerated) the way of working for a significant proportion of our customer base, i.e., working from home, and this looks now to be the 'new normal' and not likely to change, particularly given the pressures to reduce carbon emissions.

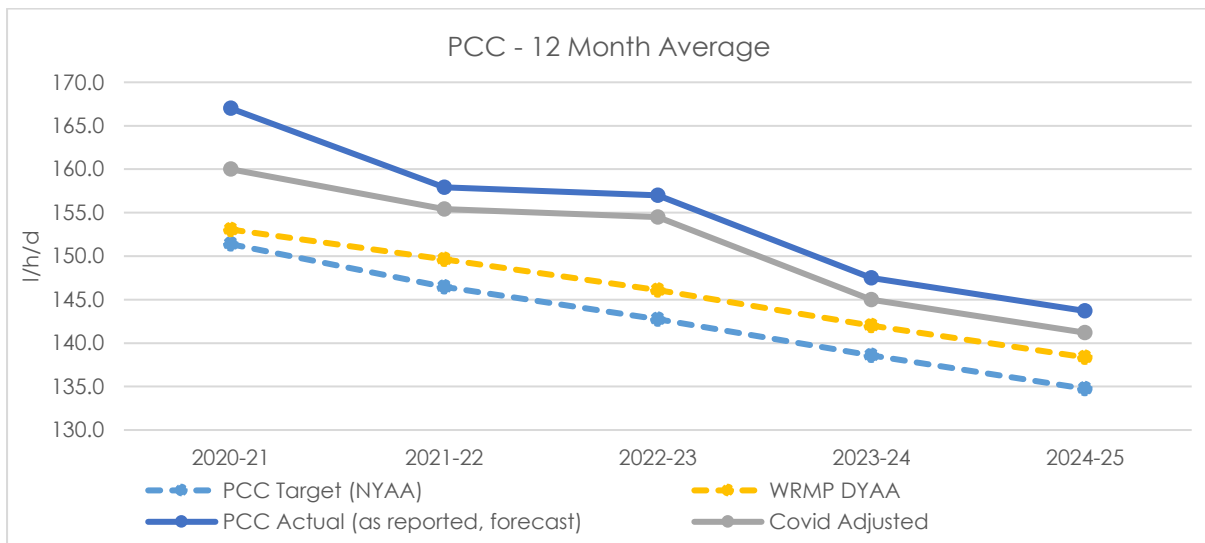
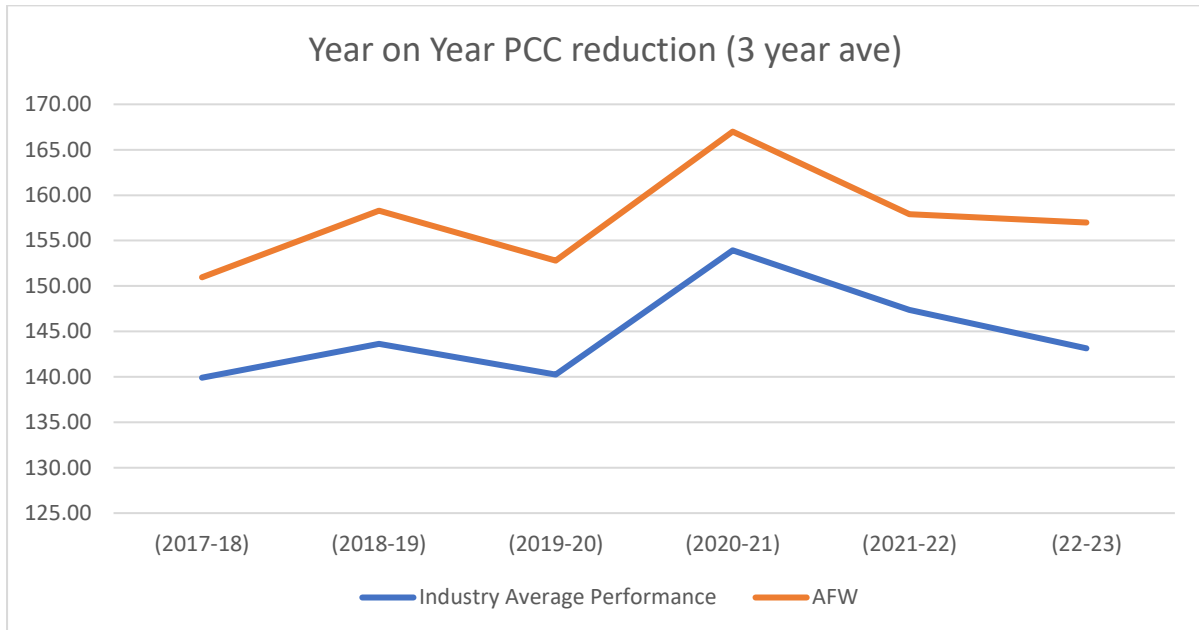
The three-year rolling average target while initially designed to 'smooth' out weather variations and attribute underperformance from the prior year into current performance, now has the unintended consequence of exacerbating the Covid impact. Increases seen in Covid lockdowns and beyond has a knock-on effect to subsequent years which are outside companies' ability to control and could not have been foreseen at the time of target setting.

Our water saving awareness activities did not curtail during lockdowns, and we looked at the ways we could move online or continue but socially distancing. Despite not achieving the performance commitment targets, we are still working hard to be the top company across the industry at engaging with customers about reducing PCC. We have invested significant time and resources into education and campaigns to encourage reductions in water usage.

The percentage reductions expressed from base year no longer give accurate comparisons of the net level of reduction. Commuter belt companies are particularly impacted by this as their customers are now using more water in the home than would ever have been experienced.

Since the peak in PCC during the first Covid lockdown, we have worked to reduce demand. Since 2020-21 we have steadily reduced demand but have not returned to

pre pandemic levels (and the baseline year, against which our commitment reductions are calculated).



The impact of Covid on ODI Performance

At the end of 2020-21 we commissioned PA Consulting and Frontier Economics to help us understand and evidence the effects of Covid-19 on PCC. This work also took account of the additional complexity of accounting for background increases that would have been seen in a year with hot/ dry summer as well. The PA Consulting: Covid-19 Impact Assessment final Report of October 21, concluded that for 2020-21 an additional 28MI/d of observed average daily distribution input was used outside the prior 4-year average, and only 10% of this additional water could be attributed to increases due to weather.

The report "identified a DI increase in 2020 of 28MI/day at enterprise level; equivalent to 9 gigalitres over the course of the year. This magnitude of increase is only comparable to 1-in-20 weather events such as in 2003 and 2018...only 10% of this DI increase can be explained by weather in 2020. The evidence suggests the remainder was caused by the impact of Covid-19".

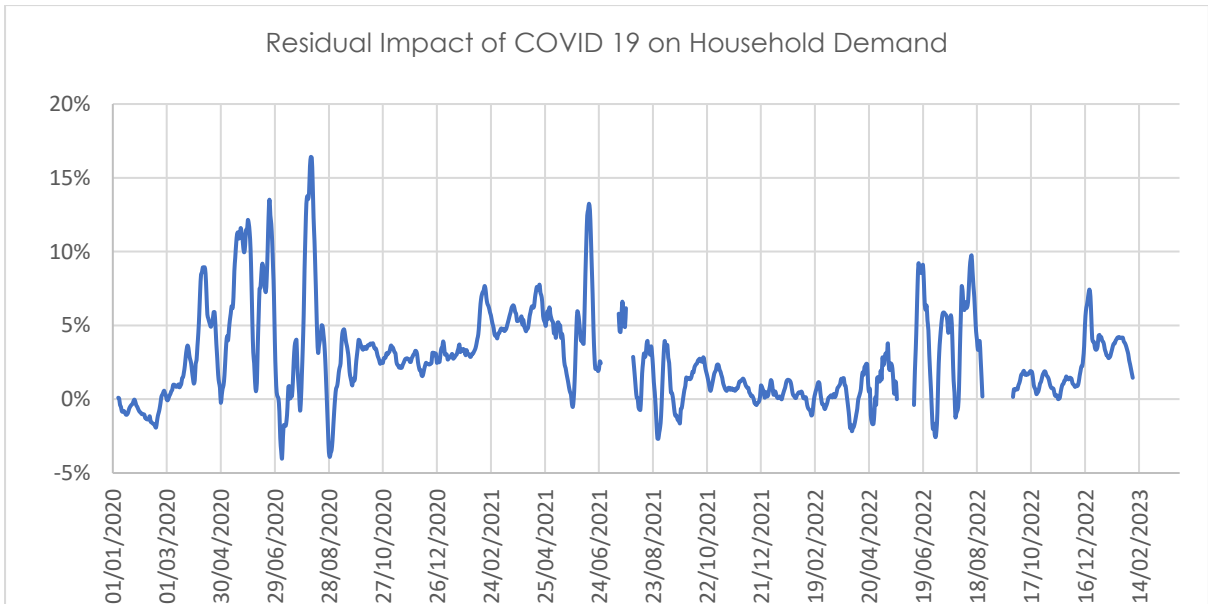
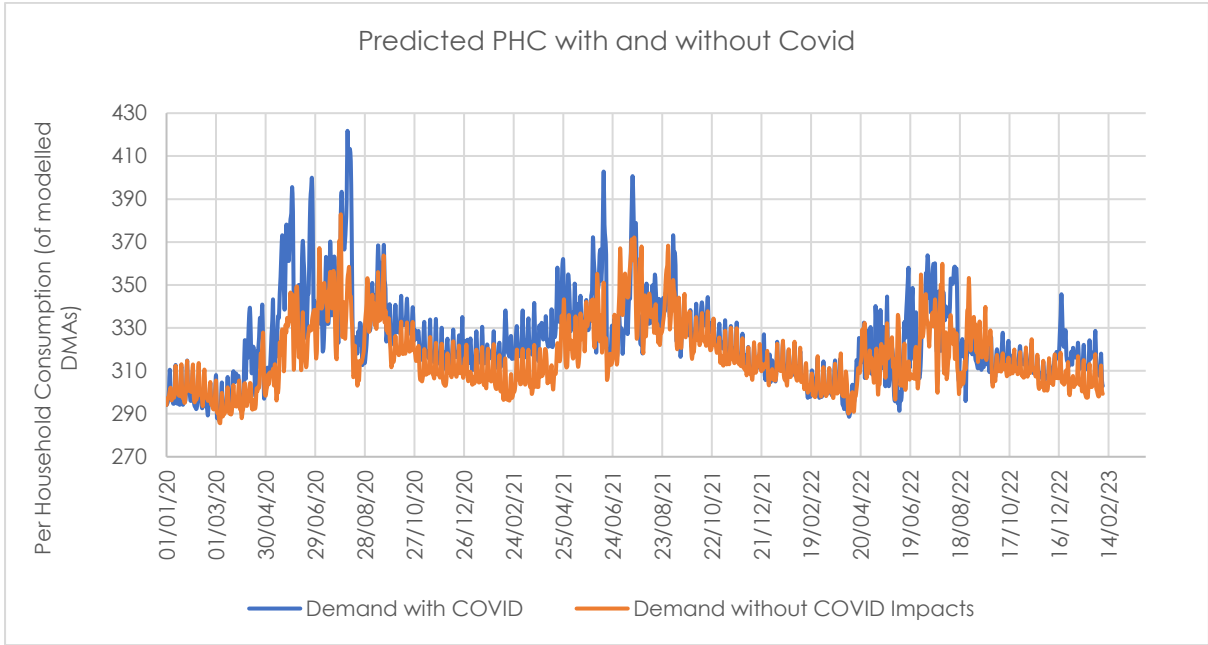
Since returning to a 'new normal', our Water Resources Management Plan team, Demand Management and Data Scientists have worked together to understand further the past, present, and prospective effects of the Covid-19 pandemic on household consumption.

We have conducted extensive modelling using a bespoke deep machine learning model to assess the impacts that Covid 19 has had on household consumption. This takes into account the ongoing changes to lifestyle which continue to influence water consumption and incorporates a more sophisticated level of analysis than the Artesia Consulting report: WRMP24 Household Consumption forecasting - Multiple linear regression model. (see rdWRMP24, Appendix 4.1, Household Consumption Forecast) Our model uses a representative set of DMAs where it is able to predict per household consumption (PHC) based on weather and seasonal variability, and it is able to do this based on observed behaviour pre-pandemic compared to post pandemic behaviour. The lasting effects of the pandemic on household consumption due to changes in working patterns such as hybrid working leading to more time spent at home in domestic properties have also been analysed.

Our modelling estimates that these changes will have on average, an impact of increasing household consumption by 2.5 l/h/d on top of what people would have been using had the pandemic not occurred by 2024-25.

The calculations further indicate that in 2020-21 demand was 7 l/h/d higher in 2021-2022, 4 l/h/d higher in 2021-22 and 3.5 l/h/d higher in 2022-23 (as outlined in our APR23 submission). These estimates take account of and exclude the increases seen due to the extreme weather during the period. This is based on the results of the PHC machine learning model, which are replicated below. These calculate the differences between 'expected' PHC from our customer based using pre-Covid consumption behaviour, and the updated model that incorporates the observed behaviours during and after the pandemic.

The outputs clearly show the different responses to the two lockdowns during the pandemic (March to July 2020 and December to April 2021, which has then been followed by a persistent residual change associated with working from home. It is this working from home difference that has been used in the PR24 forecasting.



We are commissioning further expert analysis to finalise the true impact of Covid-19 and will provide this as part of draft Determination representations. For the business plan submission, we have followed Ofwat's guidance and set out the absolute PCC performance in the ODI models (i.e., without accounting for the effects of Covid-19), however the final ODI reconciliation for PCC at the end of the period will need to account for the impact on Covid-19.

Effect of Covid on ODIs

Performance commitments measured against a calculated baseline		Performance level - actual (2020-21)	Performance level - actual (2021-22)	Performance level - actual (2022-23)	Performance level - forecasted (2023-24)	Performance level - forecasted (2024-25)
Per capita consumption (PCC)	lpd	167.0	157.9	157.0	141.0	134.4
PCC adjusting for Covid	lpd	160.0	153.9	153.5	138	140.9
Difference	lpd	7.0	4.0	3.5	3.0	2.5

2017-18 to 2019-20 Base-year figure of 154.0l/p/d

Equivalent percentage reductions

Performance commitments measured against a calculated baseline		Performance level - actual (2020-21)	Performance level - actual (2021-22)	Performance level - actual (2022-23)	Performance level - forecasted (2023-24)	Performance level - forecasted (2024-25)
Per capita consumption (PCC) (% reduction)	%	-3.5	-3.4	-4.3	1.3	6.4
PCC adjusting for Covid (% reduction)	%	-2.0	-1.0	-1.2	3.6	8.4

Calculation of ODI

Performance commitments measured against a calculated baseline		Performance level - £m (2020-21)	Performance level - £m (2021-22)	Performance level - £m (2022-23)	Performance level – forecasted £m (2023-24)	Performance level – forecasted £m (2024-25)
Per capita consumption (PCC)		-2.3	-3.7	-5.1	-3.2	-2.4
PCC adjusting for Covid	£m	-1.6	-2.6	-3.7	-2.9	-2.1
Difference		-0.7	-1.1	-1.4	-0.3	-0.3

Based on the evidence to date, the Covid impact has a significant effect on the penalties incurred during the 2020-21 to 2024-2025 period. Outside of the direct impacts of Covid experienced in 2020-21 and 2021-22, we estimate the ongoing effects of Covid will result in an approximate additional penalty of £3.8 million by the end of 2025. As outlined above, we are commissioning further work to document the full effects of Covid and will provide this in time for the end of the period.

Our improvement journey

While Covid increased water usage across the area, we were already one of the highest consumption areas in the country. We have relentlessly focussed our activities in this area to accelerate the reduction in water use and are committed to working

with our customers, encouraging water efficiency measures, and exploring ways to reduce water usage.

Home efficiency checks:

Despite being unable to enter customers' properties to perform Home Water Efficiency Checks (HWECs) during lockdown, we responded to customer feedback to continue provision of this service and stepped up our virtual activity on HWECs when we were able to do so. We now offer both virtual and in person visits. In 2022-23 alone we conducted 20,894 checks.

Save our streams campaign:

Launched in April 2021, 'Save our Streams' (SOS) our flagship campaign encourages customers to make better use of water and waste less.

- The campaign has won two awards at the prestigious Field Marketing and Brand Experience (FMBE); Winning gold for 'Most Effective Roadshow or Shopping Centre Campaign' and gold for 'Most Intriguing Experiential Activation. (220,000 sign ups.)
- The campaign also won the Drum Social Purpose Award for 'Best Integrated Campaign' for online and offline.

Save our streams 2

SOS2 was expanded in 2022, to engage more customers and keep them on the water saving journey. Four key initiatives were targeted:

- Providing a bespoke water usage calculator tool to allow customers to understand their own water footprint, take simple steps to reduce their usage and claim free water saving devices
- An awareness driving advertising campaign featuring "Duck," Affinity Water's new brand identity, voiced by comedian Joe Wilkinson which highlights key behaviour changes (showers/garden use)
- A PR and social media campaign working with local river and wildlife trust partners and an influential campaigner Ben Fogle
- Attitudinal behaviour change research insights to help target and drive more engagement – especially amongst higher usage audiences with higher savings potential.

Save our streams 3

The campaign is continuing through the AMP and into year 4 with additional water-saving behaviours being targeted plus:

- A new domestic leaks focused campaign highlighting to homeowners how to identify and fix leaking toilets, taps and tanks.
- The introduction of a "water smart" schools programme running across the region to educate schoolchildren about water-saving.

We are also working with the think tank Demos. The aim is to bring greater national focus to the water deficit and public engagement on new policy & practical measures to help drive behaviour change. Water resilience, the nearness of the supply deficit, and understanding of the impact personal use can have, needs to be better understood by the public.

We have additionally invested in innovative projects to look at new ways to engage and empower customers through education and promotion of behavioural change to drive down demand.

[Minecraft Environmental Innovation Project \(EIP\):](#)

We delivered a ground-breaking project to understand how we could engage with children to raise awareness of the need to save water and provide knowledge of water efficiency in general. A Minecraft based platform was developed to deliver these messages in the most engaging and appealing way for our future customer base. More details on this can be seen in our EIP section below.

[Water efficiency in social housing EIP:](#)

Working in collaboration with social housing providers, we investigated and trialled water efficiency activities with social housing customers. This project is already being rolled out more widely than the initial trial. More details can be seen in our EIP section.

[Road shows and community events:](#)

Activities were curtailed during Covid-19, however we have recommenced activities such as visiting shopping centres and community events to engage with customers on water saving tips and provide free water saving devices.

[Increased metering of domestic customers](#)

On average, metered customers use an estimated 50 litres less water per day than non-metered customers. Non-metered customers pay a fixed price for their water bill, while metered customers pay for the exact amount of water they use. As such, they make a more conscious effort to consume less. Metering provides understanding of where and how water is being consumed which allows more targeted activities to encourage usage reduction. By the end of the AMP, we aim to have increased household metering by installing c.50,000 meters every year.

[Commercial efficiency activities:](#)

Alongside huge efforts from our customers, it is important to share joint responsibility and demonstrate our efforts to reduce non household wastage; In partnership with our non-household customers in the Clacton region, our innovative 'Water Smart Holiday Parks' trial took place where we worked with national partners Park Dean and Haven to demonstrate the opportunity at commercial premises by reducing total usage by over 42%. This has significant potential to scale in delivering national benefits over 100 sites (our partners have to date trialled local projects with us).

Expanding the project, a similar partnership with Whitbread group is currently underway across our area, targeting hotel chains such as Premier Inn.

'WaterSave' Tariff Trial

In October 2023 we are implementing an innovative rising block tariff trial. This will be a two-year trial focussing on dual goals; to see if it will reduce household water waste, while also improving affordability of water to those that need it. The trial will be focussed on a cluster of geographically close postcodes that contains a variety of CACI Acorn groups.

It will help affordability as the first block of 30m³ water is free of charge to customers, meaning low users will see their water bill reduce. By increasing the price of water once people use over 245m³ in the year, we will incentivise customers to be more aware of their water use and take action quickly if issues such as customer side leaks occur.

Unplanned outage

We have achieved our unplanned outage target for the three years of the period and forecast achieving it for the remaining two years.

Since commencing reporting against this metric, we have sort to continuously improve our understanding of our unplanned outage activities along with improvement in our available data. In 2020-21 and 2021-22 we looked to improve how we captured and reported against this measure ensuring consistency of reporting against the guidance. We have used these improvements to drive operational improvements and insights.

Outage measures are a measurement of asset health and we have spent considerable effort in improving the reporting and capture of this data. While we use unplanned outage information to inform our capital investment and capital maintenance, it is equally important in understanding how our sites are maintained and operated on a day-to-day basis.

Improving consistency of outage reporting has allowed us to more accurately model supply and demand scenarios keeping the disruption of our customers to a minimum. The introduction of this metric at PR19 raised the profile of this measure and through improved understanding of its end-to-end requirements resulted in greater understanding of the cause and effect of everyday action and decisions.

The reporting and operational improvements have led us to convene an 'Unplanned Outage Programme Board' whose purpose is to:

- Review performance (leading and lagging measures)
- Help decision making
- Drive initiatives
- Facilitate escalations if needed

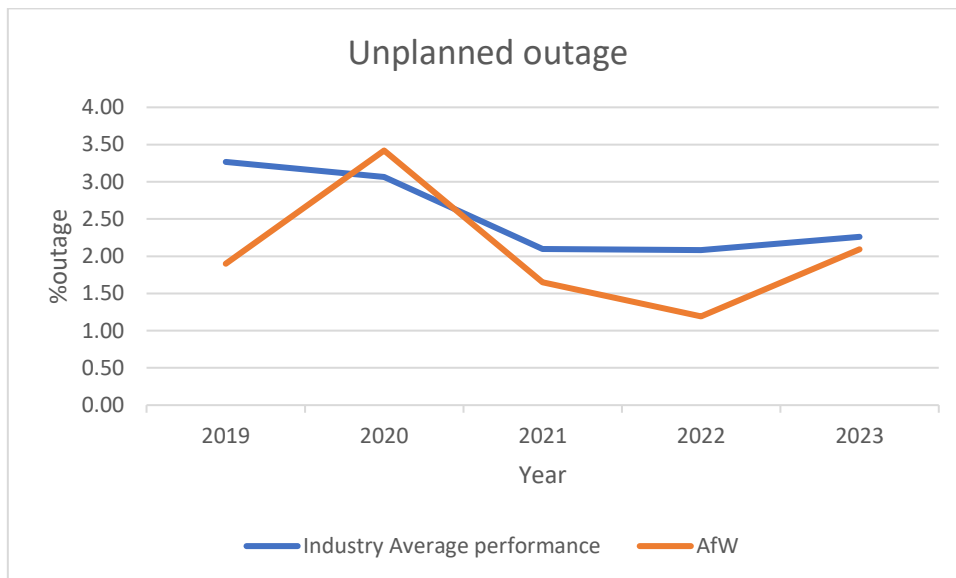
It meets regularly and incorporates all areas of the business that have an impact on unplanned outage, covering:

- Maintenance

- Operational Delivery
- Asset Performance
- Delivery Planning
- Data, Reporting & Insight

Industry comparisons

Relative to other companies, our unplanned outage performance has reported above average each year but was still higher than median performance in 2022-23. With the continued improvements planned we believe our performance will improve against other companies in the industry and will give us benefit from greater understanding of the cause and effect of these outages and the ability to plan to mitigate against their impacts in the future.



Severe restrictions in a drought

The Performance Commitment 'Risk of severe restrictions in a drought' is defined as the percentage of the customer population at risk of experiencing severe restrictions in a 1-in-200-year drought, on average, over 25 years. The population is considered to be 'at risk' if the supply-demand balance calculation in each water resource zone (as used for water resource planning) for the 1-in-200-year drought event results in a shortfall (deficit).

In our final PR19 submission to Ofwat, the performance commitment levels were set for the 2020 - 2025 period. In the calculation the annual forecast, rather than the 25-year average, was used to calculate the expected future performance and

associated targets. Future schemes selected in the Water Resources Management Plan 2019 (WRMP19) to manage supply and demand between 2020 and 2045 (25-year period) were also included with the expected benefits to be included in each year's performance. This inclusion resulted in the target falling to 0% for each year of the period.

Following acceptance of the Final Determination targets it was identified that there was a differing interpretation of the guidance, and our yearly performance needed to be calculated using the 25-year average - a different basis to which the targets were set. In addition, the data sources used in the calculation were not in line with the latest versions used in our WRMP.

These divisions between targets and performance meant that this target could never be met in any of the years between 2020 -2025.

Given this disconnect, we highlighted this problem in our APR21 and wrote to Ofwat in July 22 under the 'Annex 2 change protocol with a revised set of commitment levels calculated to reflect the equivalent targets, had they been set on the same basis.

Ofwat did not feel this met the change criteria under annex 2 but that relative performance could be explained in each years APR. Ofwat confirmed that similar requests had been received from other companies.

It is important to note that the severe restrictions in a drought metric does not represent the percentage of customers who are at risk of severe restrictions in a 1:200 year drought event in a particular year. Rather, this metric takes a long-term approach and shows the proportion of customers at risk over a 25-year period. In addition, the methodology adopted is very conservative as planned future schemes selected in the WRMP do not contribute to the 25-year average supply-demand balance with their expected benefits. This has the effect of overestimating the percentage of customers who are and will be at a real risk of experiencing severe restrictions.

Our overall security of supply remained robust and in line with our WRMP19 planned levels.

Below highlights the commitment targets set vs those that would have been set using the data sources as specified in the methodology guidance;

Performance	Units	2020-21	2021-22	2022-23	2023-24	2024-25
PC Levels set at PR19	%	0.0	0.0	0.0	0.0	0.0
Revised PC Levels	%	63.9	60.6	51.9	36.6	26.0

To date, we have not achieved this metric against either target level methodology.

To mitigate this, several options are being 'fast tracked' to improve performance:

- the acceleration of a trading scheme,

- the acceleration of the second stage of Supply 2040 combined with a potential reduction of our bulk export to South East Water: and,
- non-household demand management activities.

PSR: Priority Service Register

Supporting customers that need a little extra help is a key business objective and is of increasing importance in the current economic climate.

Through Covid, furlough and beyond, our customers are facing increased strain, Ofwat's 'Cost of Living' wave 3 survey (Published May 23) shows that bill payers are continuing to struggle when facing household bills with over half struggling fairly frequently. It is estimated that just under three in ten are aware of the support available.

The customer uptake of our PSR and services offered have far exceeded where we expected to be at the start of the period.

Alongside promoting through social media, web, bills and in person contact, we have continued to increase the awareness of the PSR and other help available. We look to reach customers through as many access channels as possible.

To date we have:

- Run joint campaigns with UKPN (UK Power Networks) to promote PSR and financial support. SMS campaigns sent by UKPN targeted customers in the Luton area for affordability and Tendring area for PSR. We also emailed our PSR customers information on UKPN's PSR and fuel support programmes with UKPN partner Agility Eco.
- Participated in CCWs pilot scheme to promote financial support on PSR through welcome letters/email. This has been in place since April 21.
- Placed adverts in an NHS publication in the Barnet area to promote PSR and financial tariffs as this was an area identified to benefit the most.
- Promotion with SSEN for the London Borough of Hillingdon for a specific postcode area where we believe there are socially isolated lone pensioners ,to again promote both SSEN and our PSR but also the financial support available.
- We have provided 8000 PSR flyers for the charity Small Acts of Kindness who provide information packs on useful support and services for elderly residents in the Hertfordshire area.
- Supported poverty awareness days and linked this to water bills.
- We have put in place data sharing agreements with both electricity Distribution Network Operators (DNO's) in our area (UK Power Networks (UKPN) and Scottish and Southern Electricity Networks (SSEN).

We achieved the 2025 Reach target of 7.2% in August 23 and finished the year end at 8.33%. The internal stretch target we have set for 2023-24 is 9.58% and for 2024-25 approx. 10.83%. This is based on the current level of performance so confidence is high that we will achieve these figures.

We continue to add on average 500 households per week to the PSR register. This is achieved mainly by our front-line colleagues identifying triggers during the calls that could indicate a customer is in a vulnerable circumstance and will therefore proactively offer the PSR to households.

We have changed our legal basis for PSR registrations to 'legitimate interest' which means that trusted organisations such as Fire and Rescue and local authorities can register for PSR on behalf of a household.

We have exceeded numbers and the predicted breakdown in all categories.

Categories	Achieved 2022-23	PR19 Business Plan forecasts
Communication	21,818	21,026
Mobility and Access	63,296	18,455
Other	8,599	5,435
Security	47,470	45,824
Supply	87,221	21,742

Outside of the PSR we look for alternative ways we can help our customers. We provide a range of services and forms of assistance which are available to our customers to improve affordability and accessibility for those that need it.

Industry comparisons

We have met and achieved all 3 reporting criteria of the PSR to date, reporting above average in the previous years. In 2022-23 we continue to 'reach' an above average number of customers and are reporting as an upper quartile company for the percentage of attempted and actual contacts.

C-Mex

We aspire to become one of the leading water companies in the service we provide to our customers. We know we have a way to go to achieve this and are doing all we can to improve our performance and give our customers greater confidence in our abilities and services.

We set ourselves a target and developed a clear action plan. Whilst we understand the root causes of dissatisfaction and have actions to mitigate these, it did not account for extreme weather events, and regrettably our performance was affected by both the extreme hot weather and freeze-thaw in 2022-23.

We also note that there is a clear geographic split between company performance at the top and bottom of the table and consider that higher levels of occupancy turnover, transience and regional identity may affect the relative satisfaction scores.

Through engaging with customers and learning from our peers, we know that key priorities are resolving customer issues quickly and efficiently, keeping customers informed at the right time and doing what we say we will do. We have continued to work on training our staff to listen and resolve queries at the first point of contact. Despite significant investment in training, improving processes and engagement, we are not yet seeing these improvements manifesting themselves into changes in C-MeX survey scores.

For the year 2021-22 our overall score moved from 15th to 14th position, and we remain in 14th place for 2022-23. We have recently invested in a market leading real time customer satisfaction monitoring and analysis system (Qualtrics) which allows us to pinpoint areas of concern for customers, resolve and respond to issues quickly and improve our overall satisfaction scores. Following our 2023-24 quarter 1 survey scores we are optimistic of an improving trend.

We have a number of initiatives in progress aimed at improving the service customers receive:

- [5 Core processes, improvement to resolutions rate.](#)

Customers are telling us that we need to deal with and resolve their queries faster.

We will achieve this through training staff to keep customers informed and speeding up back office and field functions.

- [Digital enhancements and web improvements](#)

Introduction of mobile app for customers where customers can view and be notified of actions relating to their queries and accounts. We anticipate this materially improve our C-Mex score.

- [Performance management](#)

Focus on lead wait times, Work in Progress (WIPS), journey compliance, customer comms and right first time.

Additionally, we have:

- Removed appointment backlogs in our busiest areas
- Reduced our repair backlog by 50%
- Introduced a new resolution feedback questions to target feedback
- CSAT, Resolution & Complaints discussions as standard on daily performance huddles

- Held training sessions with all our teams on the role they play in delivering the customer experience
- Invested in producing in-house quality insight data to give better understanding at both regional and process levels,
- Reviewed and evaluated skillset within the teams.
- Lowered the threshold of leaks qualifying for a free repair

Comparative reporting

C-MeX is a comparative measure, our 'league-table' position is dependent upon the performance improvements that other companies make.

Although our Service survey (CSS) within C-MeX saw a decline in performance in 2022-23, it should be noted that all company scores are reduced on those received in 2020-21. With only three companies seeing a marginal gain from 2021-22 scores. A proportion of this is likely to be due to recent media coverage and sewerage pollution reporting.

We are encouraged with our Experience improvement (CES), moving up the ranking from 14th to 12th. Our Service survey continues to be a challenge and we recognise we have significant work to do to improve our performance to give our customers greater confidence in our abilities and services. Again, in general 'CES' scores have reduced, we are however one of only two companies who have seen their Experience score improve from 2020-21 and 2021-22; the majority of the industry Experience scores have relatively declined.

UKCSI

Looking to customers satisfaction and experience with us; in 2020 we joined the institute of National Customer Service. The UK's independent professional customer service body and received national accreditation of the UK Customer Service ServiceMark.

ServiceMark is a national standard, independently recognising an organisation's achievement in customer service and its commitment to upholding those standards.

Through ServiceMark we have trained our staff in the best available techniques and continue to roll this out across our customer engagement teams.

We also joined the UK Customer Satisfaction Index (UKCSI) ranking over 275 organisations across differing sectors to understand where our customer service sits. UKCSI provides an objective, independent perspective on the state of customer satisfaction in the UK, enabling organisations to assess their performance compared to others in their sector and against some of the UK's leading service organisations across a range of sectors. Comparisons can be made against brands such as British Gas, John Lewis, and Amazon.

In 2021 we were ranked the 8th highest UKCSI overall compared to all other water providers, moving into 8th in 2022 and reporting 5th in 2023 (9th against the 34 utilities companies as a whole)

Reporting in July 2023:

- Affinity Water are the only company out of 30 Water and Energy companies to have improved its UKCSI score since last year.
- We are 1st in complaint handling out of 14 Water companies and 2nd out of 27 Water and Energy companies. This is despite us experiencing a higher than average amount of customers experiencing a problem.
- Our complaints team are performing +28.5 points above the Utilities average and +16.3 points above the Water industry average.
- We score above the Water Industry average on 11 out of 13 experience measures.

The results allow us to understand where our standards are relative to other sectors and an understanding of ranking relative to other water companies rated by customers who have ranked customer service across a range of sectors. Not only does it compare us with other water companies, it also overcomes the potential regional biases inherent in scoring.

We are investigating the disconnect between C-MeX and UKCSI to understand the differences and why opposing conclusions are drawn from performance measures of similar metrics.

D-Mex

Significant improvements have been seen in our scores since the introduction of D-MeX. We are closing the gap to the top performing companies and anticipate that will be an upper quartile performing company by the end of the 2025.

Although we have seen our D-MeX score increase from year on year, we were disappointed to achieve a 2022-23 full year industry league table position of 10th. We aspire to become one of the leading water companies when it comes to the service we provide our customers through Developer Services.

D-Mex is calculated from an equal split of scores from qualitative and quantitative surveys. Qualitative scores are based on satisfaction scores from customers who dealt with us in the year and quantitative scores are based on companies' performance against a set of selected performance metrics.

Quantitative performance

We have improved our comparative quantitative performance consistently since the inception of D-Mex. Moving from 6th in 2020-21 to 2nd in 2022-23. At the beginning of 2022-23 we started with a new construction partner. Through improved collaboration we have managed to work through the bulk of the delayed works and achieved 99.97% in our scores.

In 2022-23 we reviewed our operational structures. Our Developer Services function moved into our Customer Experience department, rebranding as Developer Experience. This has enabled greater focus on the customer's experience and continuing success in delivery.

Qualitative performance

Our qualitative performance increased from 70.72 in 2020-21 to 72.75 in 2022-23, this increase is linked to improvements made to timescales and moving to more proactive communication. We aim to deal with our customers in a timely and efficient manner, keeping them informed of progress every step of the way.

As we entered 2022-23, we identified that we needed system enhancements to support delivery for our customers within the Water UK metric service level agreement timescales (Water UK LoS). With the use of improved forecasting, 'Jeopardy management', and a re-aligned operating model, we have seen an improvement to our quantitative performance.

Across the bulk of the Water UK LoS metrics, we now deliver for our customers well before the set deadline dates. The competitive element of D-MeX is improving quantitative performance across the industry and we are striving to do even more to maintain 100% performance on a monthly basis.

Through analysis of qualitative survey returns and regularly engaging with our customers, we highlighted that communication, timeliness, quality of information and offering value are key elements for our customers. With this in mind, we have:

- Introduced enhancements to our online customer portal to improve the customer journey from start to finish,
- Continued to work on training our people to help them deliver an exceptional service for our range of customer types, and
- Streamlined processes to improve the customer journey and reduce time taken to provide our customers with information.

Reporting against the combined D-MeX metric, our score has increased year on year from 84.39 in 2020-21 to 86.36 in 2022-23, this is unfortunately not yet reflected in the relative industry position of 10th. We believe this is only a matter of time.

We are forecasting we will be reporting as an above median company for the remaining years of the period and have an internal aspiration of achieving 6th position in the overall combined D-Mex Score.

Comparative reporting

In 2023-24 we forecast to improve further on our D-MeX score and industry league position. We continued enhancements to our systems and processes in quarter 4 of 2022-23, giving us a front foot start for 2023-24. We are targeting quantitative performance to be 99.99%, maintaining the consistency we have seen in 2022-23. We

are targeting qualitative performance to achieve year-on-year improved scores reflecting our team restructure and enhancements to processes and systems.

In 2024-25 we expect self-lay construction activity to increase such that self-lay organisations carry out more works than our contract partners.

In the next years, we will continue to use market insights, customer feedback and innovation to support our D-MeX performance and goals.

Bespoke performance commitments

Customer contacts per 1000 population for Water Quality (taste, odour, and appearance)

Contacts for water quality have been a DWI metric for a number of years and a combined metric for taste, odour and colour is a bespoke performance commitment for us for 2020 - 2025.

The taste, odour and discolouration targets set at PR19 constituted stretching performance for us as the levels were initially proposed for discolouration only and had never been applied to the other criteria.

We agreed the addition of taste and odour and initially a flat target of 0.80 for 2020-2025 (based on the best performing 3 years average). In the final determination the targets were set as an improving performance level in the period. We were unclear at the time if these levels were achievable and were unclear on the deliverability of the performance commitment.

We failed to meet the commitment in the first two years of the period. The performance commitment was significantly affected by Covid.

Our improvement journey

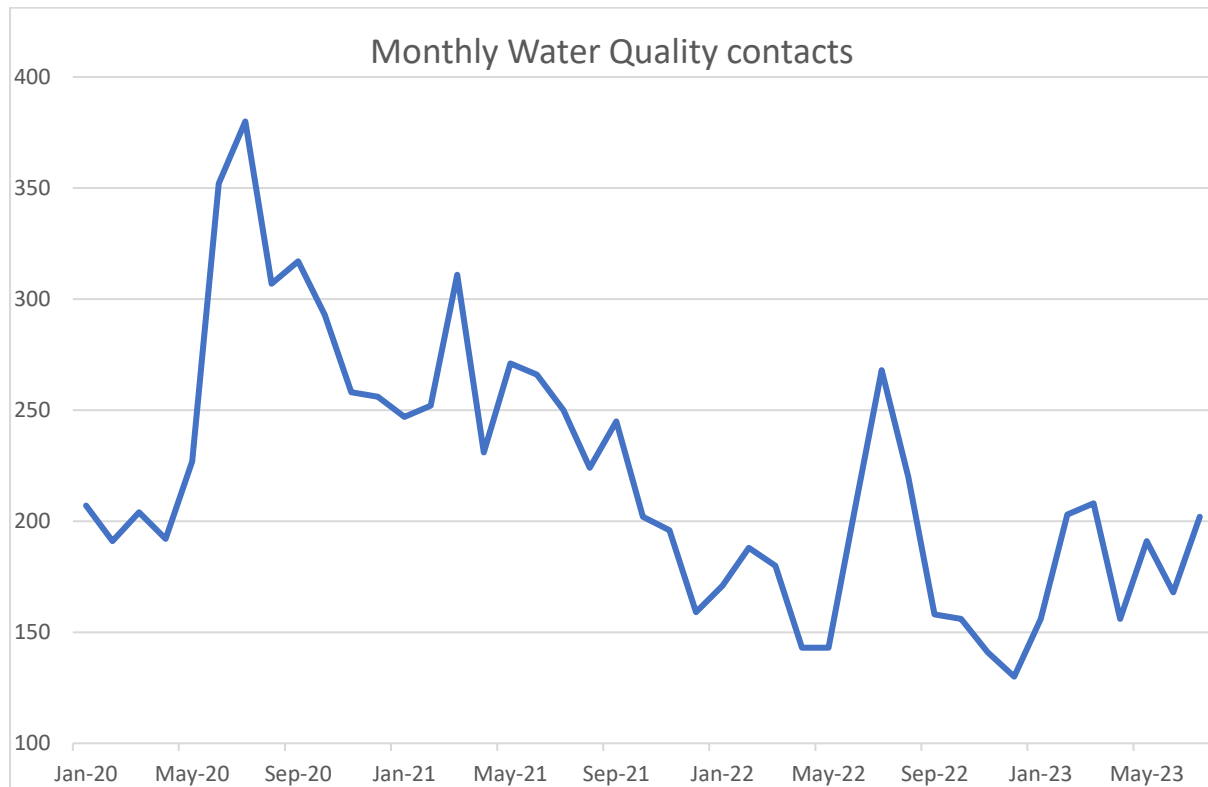
Significant work was undertaken in 2015 - 2020 to reduced water quality customer contacts. Spot areas affected were targeted with ice pigging to reduce unwanted material and sediment from pipes. Removing these problem locations saw contacts from these areas diminish. Following this work, the remaining discolouration contacts we receive are evenly spread across our network and there are no spot areas easily identifiable as problem areas.

During 2020, the Drinking Water Inspectorate reviewed the industry performance to identify areas of high-risk, persistent discolouration and discolouration risk across companies. The review identified 184 poor performing zones in companies in England. Affinity Water were noted in the DWI chief inspectors report as being one of only 3 companies which had no zones which were triggered for further investigation.

Covid impact

During lockdown and subsequent increasing demand, water contacts increased. We believe this is due to greater numbers of people being at home and an increase in the overall awareness and concern over all aspects of health and well-being.

Post Covid-19, contacts began to return to the expected levels. We therefore do not consider the increased contact in 2020 and 2021 a reflection of reducing quality.

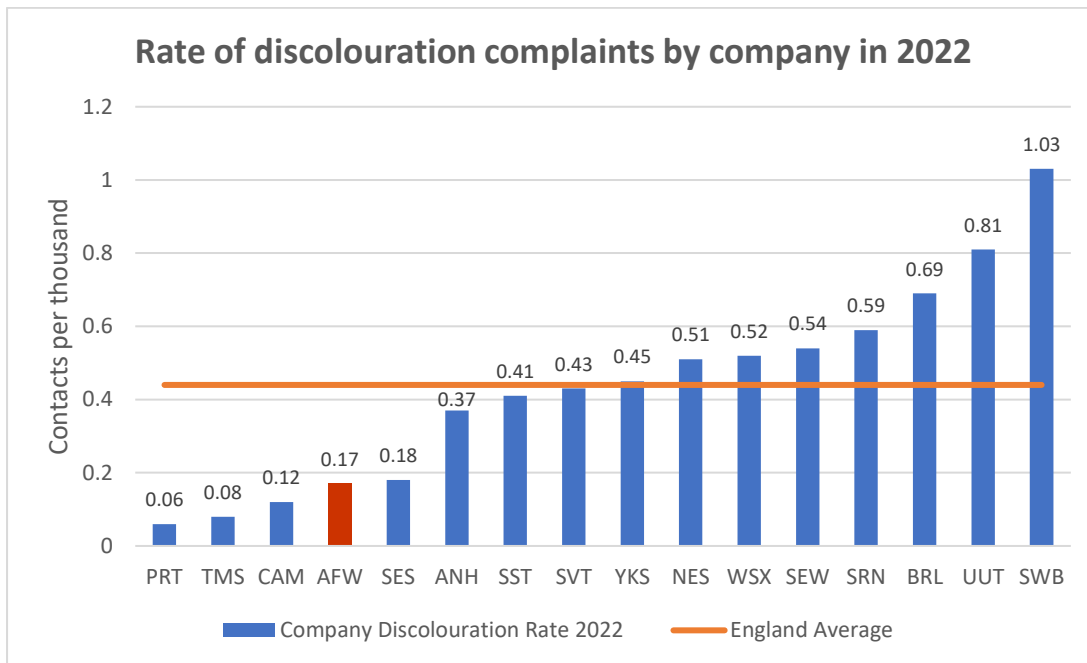


Within the daily activities of the company, we do all we can to prevent the need for customers to contact us, ensuring the appropriate procedures are followed when working or managing our network.

We ensure that:

- mains are appropriately flushed, and turbidity monitored following an event
- rigorous samples are taken prior to a main being returned to service
- Messaging to customers following events to understand 'cloudy water' and the potential need to run taps.
- Regular training on 'hygiene practises for return to service

Industry comparisons are difficult as figures reported to the DWI are on an individual metric bases rather than as the combined commitment. However, against the appearance metric we have reported upper quartile performance since 2018 and (excluding Covid affected year of 2020) have been above industry average in taste and odour in 2014.



Properties at risk of receiving low pressure

We have two bespoke performance commitments for low pressure:

- Average time that properties experience low pressure, and
- Properties at risk of receiving low pressure per 10,000 connections.

While both measures use the same data and the 15 metres head reporting threshold, they use different approaches for assessing the significance of low-pressure events. The 'average time' measure focuses on frequency of low pressure that properties experience across the whole year, rather than simply identifying the worst-case incidence recorded in the year. The difference in the reporting criteria is that the 'average time' measure does not exclude low pressures that result from 'one-off' events such as burst mains, and therefore is a more comprehensive measure of what our customers experienced across the year as a measure of our asset health.

Considerable effort has been made against the two low pressure PC's, investing over 3 times that assumed in our PR19 Final Determination. For 'average time that properties receive low pressure' we are significantly outperforming our commitment. However, our performance to date against 'Properties at risk of receiving low pressure per 10,000 connections' leaves us appearing to be a poor performing outlier in the industry.

The figures are not reflective of a substantially deteriorated or poor customer experience compared to that provided in 2015 - 2020, prior to the installation of additional critical pressure point loggers. The property numbers being reported do

not correlate with a change in the number of customer contacts regarding low pressure.

As outlined in correspondence with Ofwat previously, it is not possible for us to meet this performance commitment due to the nature of the reporting guidance and the high level of coverage of 'critical point' data loggers across our network. While we know we report as an outlier in performance, we believe we are an outlier in terms of exposure for reporting against the metric.

Factors driving this disconnect in reporting are:

- Performance is largely driven by the volume and location of critical pressure point (CPP) loggers. Increasing the number of loggers placed at critical points in our network has directly increased the number of properties reported. Conversely, companies with fewer loggers (or at less critical locations) report a lower number of properties receiving low pressure.
- The 'Properties at risk of receiving low pressure per 10,000 connections' measure pick up a combination of transient and persistent pressure problems which can vary significantly with the weather and Covid, which cannot be excluded under 'will continue to receive' as these factors are outside our control.
- The 'Properties at risk of receiving low pressure' metric was introduced early after privatisation when pressure monitoring points, available data, and industry experience of understanding this type of data was limited. Since that point, improved data availability, accuracy and understanding has not informed revisions to the reporting guidance for the metric and the guidance no longer reflects the practicalities and realities of current reporting.
- While low pressure is reported in Discover Water, there are no other companies which report equally against the same metric, (and the understanding of excludable events varying significantly) and therefore the performance level can not accurately be compared. This disproportionately affects our current reporting position.
- The Covid pandemic has fundamentally changed the base reporting position. Home working and changes to usage patterns have created a seismic shift in the domestic usage and patterns of water use. The position set at the start of the period is no longer reflective of the current status.
- Additionally, when the low pressure reporting metric was first written (c1998) it was perceived that 5 days of abnormal demand (or 25 over 5 years) reflected the 'typical' number of days where hot weather impacted the metric. With the increasing effects of climate change we have seen the number of days increase. The metric therefore no longer excludes the 'typical' number of abnormal demand days the guidance was originally designed to exclude. This results in abnormal weather affecting performance in ways that it was never originally intended to.

Average time properties experience low pressure

We have met the performance commitment level for the average time that properties experience low pressure each of the years of the period to date.

Average minutes better reflects both the service to customers and the health of our assets; it seeks to avoid the inherent weaknesses in the 'properties at risk' measure.

There are no exclusions for low pressure that result from asset failures such as mains bursts and pumping failures, nor that are in consequence of planned maintenance work. These all affect the service to customers. The measure reflects the low-pressure problems that affect the greatest number of properties for the greatest duration.

Customers may experience low pressure for the following three main reasons:

1. The elevation of properties in relation to the available head of water. Typically, this is where there is little difference between the ground level of the property and top water level of the reservoir or water tower supplying it. Properties will receive low pressure either constantly or frequently. In most cases resolution of low pressures will require capital schemes, although for some it may be possible to rezone, or inject water from, an adjacent higher-pressure zone.
2. Summer high demand causing head losses across the network. The number of properties in this category in any year can vary considerably, being dependent upon temperatures and rainfall.
3. Poor maintenance and/or operation of assets. This can relate to pumps, pressure reducing valves (PRVs), district meter area design, valves in incorrect status, etc. (This would include new housing stock to be served). These are items that can be termed 'self-harm' and as such are within a company's remit to identify and resolve promptly.

Outside of seasonal readiness plans, operational activities, and planned maintenance our low-pressure task force meet regularly to discuss and design bespoke solutions for low pressure 'hot spots' identified.

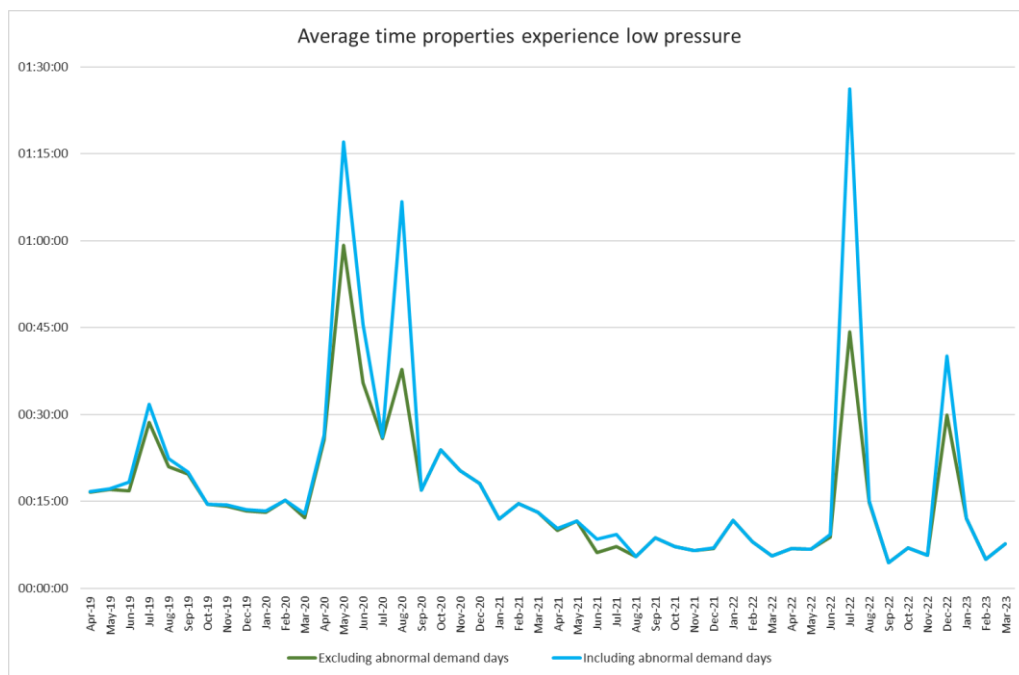
We have been measuring low pressure by average hours since April 2019. Performance each year is shown in the table below.

Average time (hh:mm:ss) properties experience low pressure

Year	Excluding five days abnormal demand (PC definition)	Without exclusions
2019/20	03:22:23	03:30:20

2020/21	05:02:48	06:01:00
2021/22	01:35:05	01:39:54
2022/23	02:33:26	03:26:22

Performance when viewed by month across time provides a clearer overview of performance (April 2019 to March 2023):



The effects of extreme weather conditions can be seen clearly in the summers of 2020 and 2022, and the freeze-thaw of December 2022. Aside from these peaks, the underlying trend can be seen to be downward and is reflective of the capital investment made in the current years.

Customers in vulnerable circumstances satisfied with our service (x4)

We are committed to delivering an exceptional experience to all our customers, ensuring our services are available and inclusive to all. We offer a range of services, both for financial support (such as those receiving our Low-Income Fixed Tariff) and for those registered on our Priority Service Register designed for those customers that may require extra help with communication, access, physical or other needs.

In line with studies conducted, our analysis shows that from our survey results we consistently receive the highest scores from our most socially deprived and vulnerable customers.

It is important we keep track of what matters to our customers and to ensure we are delivering the levels of service they expect.

We ask our customers to tell us about their experiences with us and to score us from 0 (very dissatisfied) to 10 (very satisfied). We also ask our customers to tell us how easy we are to do business with, again scoring us using the same scale where 0 is not easy and 10 very easy.

The survey results provide the responses to the following questions:

- How satisfied are you with the service you receive from us?
- How easy are we to do business with?

During 2021-22 we joined forces with SEA (Surviving Economic Abuse) charity to help provide specialist training to our colleagues, to recognise when our customers are experiencing economic abuse, and struggling with debt.

As highlighted previously under PSR, we have collaborated with energy suppliers and local councils to help target areas where we believe there may be customers not taking full advantage of our services, raising awareness of the support available. We have promoted our services in correspondence, social media, and placed adverts in NHS publications to reach a range of customers.

The volume of contact from customers in vulnerable circumstances increased during Covid, this dropped slightly in 2021-22 but increased again at the start of the economic downturn and energy crisis. The number of customers on our LIFT social tariff continued to rise and is now at an all-time high.

We continue to look at additional ways to help in these times of need.

We are delighted that we continue to meet our target of 90% satisfaction, ensuring our services and the experience we are providing our customers is meeting their needs and expectations. We note however that scores for all four metrics have lowered year on year. Across the board, as the economic climate intensifies and media coverage increases, the satisfaction in service and customer perception in value for money appears to decrease. This appears to equally apply to both customers receiving financial help and those that do not.

We continually review the services we deliver to ensure we remain relevant, open, and accessible to all of customers. We provide a range of other services and forms of assistance which are available to our customers to improve affordability and accessibility for those that need it.

[Reduced bill tariffs – Low Income Fixed Tariff](#)

Our low-income fixed tariff (LIFT) is available to customers who are earning less than £17,005 a year or who are currently claiming certain benefits such as Universal Credit or Job Seeker's Allowance.

In 2022-23 the clean water bill was fixed at £107.20

In 2023-24 the clean water bill is fixed at £115.10

If a customer is eligible for LIFT and receives a council tax reduction or support, then they will be entitled to a higher rate discount and the clean water bill for 2023/24 is fixed at £76.70.

Bill Cap Scheme – WaterSure tariff

The WaterSure scheme works by capping the customers charges so additional water usage is not chargeable.

Eligible customers are charged on a metered basis, in receipt of a qualifying benefit and either have 3 or more children under the age of 19 living in the property who are in full-time education or approved training, or one or more persons living in the property that suffers from a medical condition that involves the use of significant amounts of water.

Wastewater charges

We have worked with the wastewater service providers in our area to streamline the process for reduced bill tariffs and to avoid the need for customers to fill out further application forms.

Where we have the correct information, we will automatically apply any wastewater discount that the customer is entitled to.

Debt respite schemes

We partner with the charity 'Surviving Economic Abuse' to pilot the acceptance of an Economic Abuse Evidence Form which means that survivors of economic abuse do not have to repeat their story with multiple creditors. We will work with the debt advisor on the most appropriate solution for the customer.

We also offer a 'crisis fund' to provide immediate support to households facing a crisis (e.g., accidents, terminal illness, abuse, serious illness). As part of the application process, we will check to ensure that the household is receiving the most appropriate tariffs and signpost to other support.

We expect a 'payment matching' scheme to launch shortly and we are currently working with wastewater service providers on the details.

Cost of Living Payment

We expect to support 30,000 households with a one-off payment of £50 credited to water accounts for customers identified as needing support. We have used segmentation data to identify households that may be feeling the strain financially

and have proactively provided support to approx. 14,000 households so far. We have also worked with referral partners to identify other households in need.

Data sharing agreements

We have data sharing agreement with the Department of Work and Pensions (DWP), and we use this partnership to proactively renew households in receipt of the reduced bill tariff and to identify households that are entitled to support. We also have local data sharing arrangements which mean we work with partners to place households on reduced bill tariffs without further applications being needed.

Community Partnerships

We have attended various local events focused on cost-of-living pressures and use this as an opportunity to promote water saving messages as well as reduced bill tariffs and the Priority Services Register.

'Water Save' (Rising block) tariff trial

In 2023, a 2-year charging trial will take place with a subset of customers to measure the effects of a new tariff on affordability and demand response. The effects will be measured by comparison of a trial group and control group, both made up of around 1,500 properties and matched as closely as possible for consumption and location.

The new 'Water Save' tariff is a rising block charge, providing free water for the first 245m³ and it is expected that at least two out of three households in the trial will pay less for their water than they do currently if usage remains unchanged.

At the end of the trial, we will publish an anonymised dataset to share results and findings with the industry and maximise learning.

Accessibility

Making our site accessible for all is important to us and our website has been designed with accessibility in mind. As far as is possible, we try to ensure that it operates across multiple platforms and browsers and is accessible to everyone who wants to use it.

Its controls allow adaption to suit varying customer needs. A variety of settings can be chosen and saved for future visits. With standard, high contrast, blue and cream screen options available. Three text sizes are optional and wherever possible, links are written to make sense out of context. Content images use descriptive ALT attributes and decorative images include short ALT attributes. MyAccount app also includes a dark mode option.

Information is available in large print, braille, or audio on request via our call agents or through our priority services register page on the website.

Our site provides signposts to compatible accessibility software and services such as free text-only web browsers and British sign language video interpreters.

Information is also provided regarding independent advice organisations such as charities and services which may be able to assist our vulnerable and disabled customers.

Environmental Innovation Projects (EIP)

Innovation and collaboration are essential to building a more resilient and sustainable future.

In our 2019 Business Plan, we committed to completing eight environmentally focussed, innovative projects in our communities, these were designed to improve our knowledge and evidence of water use within our catchments to bring wider benefits in the future.

The aim of the projects are to bring together experts, charities, community, environmental groups, and other stakeholders to trial the delivery of a range of innovative multi-party ventures linked to different environmental themes and water use behaviours. The projects enable us to conduct trials to test for future improvements which we would have had little opportunity to be conducted otherwise.

Working in partnership with the community we have completed six 'Environmental Innovation Projects' to date. These have already started delivering greater benefits to our customers and the environment.

[Affordable housing: Water efficiency in social housing Partnering with social housing providers to help vulnerable customers reduce their water use and bills \(Colne\)](#)

We wanted to help our more vulnerable customers become more water efficient by working in partnership with their social housing providers. We also wanted to understand better how to meet the needs of social housing tenants to support our ambition to create widespread, sustainable water savings in social housing stock.

Our project in 2021-22 investigated and trialled water-efficiency activity with social housing customers, using a blend of water-efficiency methods. Through strong, collaborative working relationships with several social housing providers we were able to develop and pilot water-efficiency engagement and installation processes, including partner-led water-efficiency activity such as flow control regulation. The pilots enabled us to reach out to our more vulnerable customers living in social housing. Many customers welcomed the opportunity to reduce their water use and bills. Some of our social housing partners are now routinely incorporating water-efficiency upgrades.

[Education methods: Gaming in education Using a game-based learning platform to help children learn about water efficiency](#)

Children today use many sources to learn about the environment. However, water efficiency can be overshadowed by topics like recycling and climate change. Minecraft is a child-friendly, trusted digital platform. We were keen to explore how we

could use it, to blend gaming and water-efficiency learning in a dynamic, fun, and exciting way for children aged between 7 and 13.

We built a platform to deliver a Minecraft Water World for child-led or teacher-led learning. This is a first for the water industry. It supports and enhances child-led learning at home and teacher-based lessons in school. It helps children develop their water knowledge online, allowing application of their learnings in real life. With educational material delivered by certified teachers, curriculum-ready online lessons can blend seamlessly into the classroom. Our young testers explored the Water World virtually, learning by simulating everyday water-use decisions.

The platform provides a uniquely interesting way for children to engage with water-saving and boost their awareness and knowledge of water efficiency for life. It's an easy-access tool that supports the curriculum and encourages multidisciplinary learning (especially in STEM subjects). Local children who tested the new platform provided feedback to further develop, refine and improve it.

[New developments project: Using a NAVs delivery model to support competitive markets. \(Stort\)](#)

Competition in markets can deliver benefits for customers and the wider water sector by incentivising cost efficiencies and delivering improved service and innovation. However, Ofwat's RISE report (August 2020) stated that water companies weren't doing enough to help new entrants shake up the market, to give customers more choice.

Working collaboratively over a six-month period, we developed a framework to make it easier for NAVs to work with their water company at a new development site. The partnership encompassed legal, regulatory, and operational aspects of working.

Targeted campaigns (Wey) and (Brett) - 2 project units.

The customers in the Affinity Water region have one of the highest customer water usage levels in the UK, combined with a growing population, and less rainfall than many other parts of the country. It is important that together with our customers we take steps to use water efficiently. While we continue to invest in water saving devices, HWECs and metering, we recognised the need to dedicate additional effort into driving greater motivation and opportunity for our customers to save water. The two targeted campaigns in our Brett and Wey regions were designed to reach out to customers who had not yet engaged in water saving habits and bring about behavioural change in two of our high usage communities.

We deployed a programme of interventions adopting the 'Com-B' behaviour change model to give customers the capabilities, opportunities, and motivation to save water, save money and help improve the environment.

We have focused on behaviours with the biggest potential savings and easiest to change including shorter showers, eco mode on white goods and garden water recycling (identified through Kantar behavioural insights programme.) We used a range of engagement methods to provide education & inspiration through high

impact advertising, social & digital media engagement, publicity featuring high profile ambassadors/influencers/and charitable partnerships and tailored email communications. This directed customers to a platform where they could register, use our new bespoke water footprint calculator to see their usage and order free water saving devices.

We followed up with further communication to sustain and influence water saving habits at key moments in the year. We developed a proprietary 'PCC impact' methodology to isolate & measure the change in usage and MI/d savings underpinned by analysis of actual customer usage.

Our model suggests we achieved a higher level of MI/d savings than projected: 1.15MI/d (average PCC reduction 5.86 l/p/d per HH) in Brett v target 0.3MI/d and 3.18 MI/d (average PCC reduction of 5.62 l/p/d per HH) in Wey v target of 0.9MI/d.

Research also showed that 49% of households are now taking awareness led water saving action in the regions. We achieved 6,729 registrations (8% of Households) in Brett and 15,972 registrations (7% of households) in Wey. The registration penetration and water saving device penetration (@77% in Brett & 67.5% in Wey v 50% in our central region) is higher amongst unmetered households which is encouraging as it means we are seeing action taken amongst those who are not currently measured.

We have therefore observed a positive water savings shift because of the integrated behaviour change campaign. We are set to continue the project over the next two years with learnings applied.

Lee catchment management

In 2022-23 we made good progress in delivering the Holistic Lea EIP project completing four units across three of the work packages.

Catchment opportunity mapping to protect water resources

Catchments have significantly changed due to agricultural intensification, population growth and development over time, further exacerbated by climate change. There is a need to understand how nature-based solutions (NbS) can help contribute to addressing these challenges.

An integrated mapping approach using a GIS system was developed with our delivery partner South East River Trust to create a GIS layer to identify current catchment dynamics, condition, issues, risks, and identify opportunities where NbS could be implemented to promote resilient ecosystems, helping protect water resources, as well as promote biodiversity.

Catchment trading of ecosystem services and nature-based solutions

We have completed four catchment trading schemes in the Lee catchment to understand different trading mechanisms to support development of future catchment trading approaches.

- Two cover crop funding schemes using EnTrade in partnership with Cambridge Water, and
- Two catchment trades through the Landscape Enterprise Network (LENS) East Anglia in partnership with 3Keel, Nestle Purina, Cargill, British Sugar, and Anglian Water.

Natural Capital (NC) evaluation of Affinity Water investments in environmental schemes in a targeted sub-catchment of the Lee

The River Beane catchment was selected for the assessment. As part of the work package, we created a Natural Capital (NC) baseline account for the Beane catchment. We carried out NC evaluations for all measures delivered including abstraction reductions, river restoration schemes, land management interventions (cover crop scheme) and our INNSOut (invasive Non-Native Species) scheme. Reporting each measure and detailing how each has increased natural capital in the catchment. Recommendations, approach, and outputs will be used to inform future schemes delivered across the Lee catchment under WINEP.

All schemes are reported in more detail on our website innovation page

<https://www.affinitywater.co.uk/innovation>

Reducing the total number of void properties by identifying false Voids

We classify a property as void if it is within our supply area and connected to the water network but does not receive a charge as it is unoccupied.

To identify false voids and meet the target, we increased our proactive lettering to empty properties providing information on how to register. Follow up letters were sent to suspected occupied 'empty' properties. We have increased the frequency of our void checking processes for unmetered properties and found better ways to use credit agency data to detect occupation. Resources were increased and we adjusted our ways of working to use both site investigators and office-based teams. This allowed more time for office staff to cleanse and analyse occupation data. Credit card agency data is used where we do not receive responses to our letters after 4 weeks.

For unmetered customers and customers where meter readings show consumption over 5m³ that may provide evidence of occupation, we use third party credit agencies to ascertain if there is any credit activity at the property. Where there is credit activity, we obtain occupier details to bring the customer into charge. We use two different third parties to conduct our credit activity searches who use different data sources to maximise the activity. Where third party credit checks do not provide occupier details or the confidence score of occupation is low, our site investigators make physical visits to the property to establish occupancy and gather customer details.

We have also trialled a system for home move alerts, to support proactive communication with customers on how to register with Affinity Water.

The current void metric only takes account of the number of properties which have been removed from the void list as false. This does not reflect the significant work undertaken to confirm properties as true voids.

We have achieved the target in the period to date, with a reduction in % of voids across the years.

River restoration

As part of Affinity Water's commitment to improving and creating a sustainable environment across our supply areas, we are delivering 36 river restoration projects along 13 rivers. The aim of these projects is to improve the quality of local rivers, preventing deterioration of the river environment. Through improvements in ecological health education, amenity, recreation, and wellbeing the aim is to deliver benefits for customers, communities, and the environment.

Our river restoration commitment is delivered in close working partnership with the Environment Agency (EA) who assist our activities and ultimately confirm delivery of our performance. The unit of measure is an EA project unit. Projects are considered small (1 unit) or large (2 units). The definition of a small project is small activity, often river side, rather than to the river itself, for example tree works to improve light penetration on the river or tree pollarding.

Affinity Water do not own the rivers, and we have no rights or enforcement powers to deliver river restoration projects. The riverbed and bank side are owned by the landowner(s) and there can be different landowners on each side of the river. River restoration activity can only go ahead with the express agreement of the landowner(s). As such river restoration delivery is highly focussed on a soft skills approach of negotiating and influencing to secure the necessary access permissions

Achieving the targets has been a significant challenge, during Covid, projects were delayed as access to sites were curtailed due to restrictions and safe working practices. Many of our partners and stakeholders were furloughed. The following year materials and increasing costs also affected the projects. Where possible to mitigate against delays, project scheduled for later years were brought forward to ensure success.

We have a strong track-record of meeting or exceeding the river restoration performance commitment and are putting the right activities in place to continue this level of performance through to 2025.

There are ongoing risks posed by project delays and project abandonment often outside of our control, we have therefore maintained a strong delivery plan. As a minimum we plan that the total number of units initiated to be greater than the required commitment to recognise and mitigate risks or reductions in scope.

We have achieved our target in the three years to date, outperforming in 2021-22 and 2022-23. To date we have completed 23 of the 36 projects required.

In 2021-22, the river restoration team completed phase two of the River Beane restoration project at Woodhall Estate. This created nearly a kilometre of brand-new chalk stream and reconnected a massive 6.6km stretch of chalk stream by removing and bypassing obstacles like weirs. This was the fifth overall project within the River Beane restoration works. When all phases are complete this will create one of the longest river restoration projects in the UK.

Abstraction reduction

Our supply area is home to 10% of all globally rare chalk streams and of significant ecological importance. Environmental concerns must be considered alongside the supply and demand for water. To marry these twin aims, at PR19 we committed to reducing 27.33MI/d of unsustainable abstractions. This was off the back of significant reductions in 2015-2020, (the largest reduction of any company) In line with the WINEP measure completion date, all reductions are to be achieved by December 2024. (Zero reductions are required in the first 4 years)

There have been no changes in reported performance to date. Due to the fixed targets of zero from 2020-2024 no trend in performance over time has been, or will be, observed.

We are making good progress however with delivering the assets and changes to our network required to implement the abstraction reductions. Commissioning of Sundon conditioning plant is the priority enabling scheme that must be delivered ahead of December 2024, meeting our commitment on time, and allowing us to reduce abstraction from sensitive chalk groundwater sites in the Chilterns.

We anticipate commissioning of the Sundon treatment plant will be completed by August 2024. Progress is monitored through our monthly sustainability reductions programme board meetings.

Number of sources operating under the Abstraction Incentive Mechanism, AIM

Our target for each financial year is 0 MI. Negative AIM scores signify improved performance compared to historic droughts, as they indicate that average abstraction was lower than the baseline when AIM was active. The table provides a short description of the annual AIM score including the number of sources active during the respective financial years and brief summary on the background groundwater level situation. Higher negative scores are accumulated during dry years such as 2019-20, where background groundwater levels were below the long-term average and AIM triggers were active in most catchments.

Company-wide performance is based on the sum of scores for all the sources that are included within AIM. We included 23 sources in the mechanism in 2016 and reduced

this to 19 in 2018. This followed sustainability reductions at three sources and removal of another source that was no longer deemed environmentally sensitive. Each AIM site has a trigger, typically set at downstream gauging stations in catchments where AIM sites are located.

The number of active AIM triggers varies each year with groundwater levels, meaning that scores between years are not directly comparable. Year on year variances are expected and it is not possible to infer improving or declining trends over time.

We have achieved the performance commitments in both 2020-21 and 2021-22 and expect to outperform in the remaining years to 2025.

Reported annual global AIM performance scores from 2016-17

Year	AIM score (MI - million litres)	Score description
2016/17	-1,622.21	AIM active in 7 catchments. GWLs: average to dry year
2017/18	-3,046.95	AIM active in all catchments. GWLs: dry year
2018/19	-2,383.84	AIM active in 5 catchments (10 sources). GWLs: dry year
2019/20	-2,057.70	AIM active in 10 catchments (16 sources). GWLs: dry year
2020/21	-304.31	AIM active in 2 catchments (3 sources). GWLs: above average; increasing trend from summer 2020
2021/22	-429.63	AIM active in 1 catchment (2 sources). GWLs: above average; declining trend
2022/23	-1,277.03	AIM active in 5 catchments (8 sources). GWLs: below average/average year

Managing AIM performance

The Environment Agency communicate weekly to notify us if an AIM trigger(s) has been activated. We respond by checking that abstraction at the respective source(s) is below the volume/flow trigger point. We also have early warning triggers in place for each source which typically provide us with one month's notice of an AIM trigger being activated which helps our operational teams with planning.

We calculate and track AIM each month. We undertake assessment and assurance of data so we may detect and address erroneous data that may influence the calculation, both in our data and that provided by the Environment Agency. Overall, the river flow and abstraction data are classed as highly reliable and accurate. Daily abstraction is routinely checked, and instantaneous flow data is available on our telemetry system for additional checks if required. The abstraction flow meters should

be accurate within $\pm 5\%$ as these are the parameters required to pass the flow meter calibration.

[AIM reporting beyond 2025](#)

We operate in a water stressed region where chalk stream catchments are of significant ecological importance. Since 2016, to reduce our impact on the local environment, we have actively managed a number of our abstractions through AIM.

There are considerable benefits in continuing to manage and adapt the way we operate our assets in low flow conditions. AIM contributes to leaving more water in the environment and reduces recovery time of the aquifer. When AIM is active in the summer months, it discourages peak use of sources which may otherwise have been maximised. We have included AIM as a bespoke performance commitment target for 2025 - 2030. This will allow and incentivise us to continue to reduce our abstractions and environmental impact during times when the environment needs it most. Given the environmental challenges in our region, we consider this an important measure to continue to report on for our stakeholders and customers.

Number of occupied properties not billed (Gap Sites)

A property is considered a gap site if it is occupied and not billed. Reducing the number of gap sites results in fairer charging and lower bills for customers who already pay their water bills.

We address gap sites primarily through the same process as false voids, establishing the existence and occupation status of unbilled properties. We prioritise activity towards properties likely to have the largest revenue yield, to maximise customer benefits from the resources we devote to gap site activity.

We outperformed our target in both 2020-21 and 2021-22 and met it in 2022-23. We are forecasting we will meet the target in the remaining two years.

Unplanned interruptions to Supply > 12 hours

Unplanned interruptions > 12 hours is our second supply interruption metric. The strong performance in average minutes has improved our underlying performance, however this has not been reflected in our unplanned interruptions greater than 12 hours. Single large events in 2020 and 2021 added 468 and 422 properties to the register.

2022-23 was similarly affected by extreme summer temperatures and a significant winter freeze-thaw winter period. We activate operational readiness plans in advance of any expected disruption to service. Our winter readiness plans were in place, operations optimised, and restoration and repair teams were fully resourced. This was not enough however to overcome the effects of the period. Despite the significant resources deployed over the period, 5,596 properties were affected by an interruption >12 hours in this two-week period alone.

Outside of the above-mentioned events, exceedances have typically been the result of bursts on large trunk mains. Whilst supplies were restored to wider areas, other areas with a 'single point failure' and/or little or no re-zone options were impacted. We took opportunities to provide alternative supplies where possible, but this was not sufficient to restore supplies. These areas continue to be at risk in future incidents, which we intend to mitigate through our resilience 'single points of failure' enhancement programme for PR24.

The number of individual properties affected by avoidable interruptions such as stop taps left off or meter failures remained low. These events do not materially affect the numbers.

Incidents	2020/21	2021/22	2022/23
Large incident(s)	488	444	Summer high temperatures 188 Winter freeze-thaw 5,596 Other 213
Other incidents and one-off properties (e.g., supply left turned off after changing a meter)	50	40	53

It is difficult to understand where we are relative to other companies as only two other companies have a similar commitment although not directly comparable.

Engaging with other Water Companies to share learnings has helped inform our plans and facilitate continued improvements. Affinity Water chairs the Water UK Interruptions to Supply group, tasked with answering the 'big question' What it will take to achieve zero interruptions by 2050? Knowledge sharing events have also been held with United Utilities, Thames Water and Anglian Water focusing on control operations, emergency planning, incident management, restoration techniques and operational response.

Into the remaining years of the period, we are looking to focus our attention on

- A single team controlling access to, and operation of, our assets
- Training – Upskilling of the Duty teams from technical experts to operational leaders and incident controllers
- Planned works portal – A new portal to give a holistic view of all strategic planned work, on both above and below ground assets, with automated workflow processes and business rules for permitting.

Real time insight – Providing the 'Controlling Mind' with the 'real time' insight

- IWL (infra works live) Light – Live modelling solution for non-complex modelling solutions
- Modelling in Control Room – Evolving our existing capability to be a 24/7 team to reduce response times for complex modelling. Accurate post-event validation.

- Digital Twins – a digital model of our entire asset base to allow live impact assessment and identification of solutions. The model has already helped identify and locate burst mains.
- 6,000 pressure loggers – Additional pressure loggers will allow us to maximise the value from our digital twin system
- Daily burst Root Cause Analysis – Ensuring we understand and learn from every mains failure to reduce own goals

Incident management

- A single Emergency Plan – Creating a single source of guidance for the management of disruptive events, (previously regional plans were available)
- Guided workflows – Digitalising the Emergency Plan to drive consistency across key roles
- Training – Developing the right capabilities (Technical and Leadership) to drive the right outcomes consistently 24/7

Technology build

- Build the technology solutions that will be rolled out to realise the benefit in 2024-25

Supply optimisation system:

- A new system will allow us to automate and subsequently optimise how we operate strategic assets to achieve strategic supply objectives. This piece of work will revolutionise how we approach asset operation in the future and will provide key benefits of:
 - Calmer Networks leading to fewer leaks, mains bursts and Interruption to Supply events
 - Reduced energy costs
 - Improved efficiency

BSI accreditation

We have achieved certification to British Standard 18477 for inclusive services provision in the years 2020-21 to 2022-23. The accreditation is valid for 1 year. We have held verification of certification to the standard since Feb 2019.

Verification to the standard requires an independent assessment by BSI, to demonstrate that we have the required processes and policies in place for identifying and responding to consumer vulnerability. The outputs of these processes are put to the test during certification to ensure they are working in practice.

BS 18477 covers practices around the identification of customer vulnerability and inclusive design of products and services. Tied into the ongoing improvements we are making across all our customer metrics; BSI 18477 gives our customers confidence that we are committed to treating vulnerable customers fairly and ensures we maintain the standards set for accreditation.

Following an announcement from the British Standards Institution, BSI 18477 will be replaced with ISO 22458 in April 2024.

The BSI Kitemark has been tailored specifically to demonstrate best practice for Water Provision. This includes alignment with Ofwat requirements including the Paying Fair Guidelines

In order to transition successfully from the BSI standard to the ISO standard and the Kitemark requirements we have planned a 'gap analysis' against the Kitemark requirements in September 2023.

We are planning to transition to the new standard in January 2024. We will ensure any changes to our processes and procedures are amended in line with the new standard.

IT Resilience

Our IT resilience metric monitors priority 1 & 2 incidents to ensure services are restored in a timely manner ensuring unplanned interruptions to services are kept to a minimum and therefore disruption to our customers.

The reported impact score is a total score derived from the availability/ outages of all our key systems though out the year.

The scores for IT systems have improved year-on-year since 2020-21. These continued reductions are due to the success of our IT resilience initiatives that have been completed:

- Migration to the 'cloud': All company servers now reside in the cloud, a highly available, highly scalable, and resilient environment which has reduced the number of outages due to server failures.
- Advisor Portal: When rolled out in 2019 we experienced several outages as part of teething troubles, In the past 2 years through improvements, these have been resolved and regular upgrades have been made to ensure a more robust service.
- The Removal/replacement of several older less reliable systems/services in favour of newer integrated systems.
- Adopting "Cloud 1st Ethos" with any new technologies we leverage SaaS (software as a service) offerings where possible.
- Our IT Resilience Programme - looks to continually improve upon our strong foundational platform, by enabling regular hardware refreshes, regular patch management and application product upgrades to ensure we maintain vendor support.
- Focus on risk mitigation, where we identify potential vulnerabilities and the measures to mitigate them, though implementing security controls and backup systems to establish continuity plans to address threats effectively.
- Heavily focused on security controls and measure to ensure we invest in tooling that proactively advises of potential cyber vulnerabilities allowing us to take swift remediation when necessary.

- Standard mandatory training across the organisation to improve technology awareness i.e., security best practises.

Value for Money Survey

Our Value for Money (VFM) survey is conducted on a quarterly basis and seeks to understand from customers their overall satisfaction on the value for money service they receive.

The specific overall VFM question is asked as part of our Customer Perception Survey, where customers are asked to rate the value for money of a variety of services they receive from us. Customers score from 0 to 10, where 0 is 'very poor value for money' and 10 is 'excellent value for money'. The surveys are conducted each quarter by an external market research company and the 4 quarterly scores averaged for the overall yearly result.

While we are disappointed to have not achieved the target score of 7.65 in 2020-21 to 2022-23, we acknowledge this was particularly stretching against the backdrop of financial instability and rising costs in living. Customers cited increasing household bills, being unable to compare price and inability to switch suppliers as reasons for lower scores. We are committed to improving our customers perceptions of us and the reflected value for money score. Through our PR campaigns and additional communications, we are highlighting the services and value we provide.

In 2023-24 we are looking to move survey provider to allow greater insights into our customers perceptions, from which we can develop plans to enhance performance. The VFM question itself will however continue to remain the same.

Delivery of the water industry national environment programme requirements, WINEP

The aim of the Water Industry National Environment Programme (WINEP) is to improve the natural environment through schemes agreed with Defra and the environment Agency.

All evidence to support completion of WINEP measures are submitted to the Environment Agency and we receive formal sign off.

As with the River restoration projects, delays were experienced due to Covid and the furloughing of our partners. We have worked with our partners and the Environment Agency to mitigate these delays and bring forward projects where other delays were experienced.

We have completed 26 schemes to date, all of which have received formal sign-off by the Environment Agency.

IAP Action plan set out at PR19

At PR19, we committed to improving our level of governance and controls around monitoring and understanding the drivers for performance. The key overarching themes were summarised in the criteria below.

1. Improve data monitoring systems and tools

Put in place technology to support Data Governance and associated Information Management activities. While we have good reporting systems for performance management, we are currently joining up our existing performance dashboards to provide a single overall dashboard for performance against all PCs.

Qlik Dashboard reporting and 'PIPE' (performance, improvement, proactive, efficient) Project

At the start of 2020-21 we initiated a project to bring performance commitments and key business metrics into one reporting platform. This has been an ongoing process throughout the period and will continue. Where available data is taken directly from base systems to provide 'real time' indicative dashboard reporting. This is a work in progress and not all metrics are easily directly reported. Key changes are required within base systems which must be completed systematically. Governance and due diligence are essential to ensure we do not move to 'black box' reporting. Changes in systems and guidance must be continually accounted for and be led by the requirements of the business.

Significant progress has been made in the areas of customer services to easily analyse trends in contacts and areas of learning.

Qlik View been instrumental (along with associated changes in Waternet) to allow daily/ monthly review of water balance activities, moving from three monthly water balance calculations to monthly reporting.

Digital Twin

A digital model of our entire asset base has been created to allow live impact assessment and identification of solutions. The model has already helped identify and locate burst mains.

Situational Awareness platform

Development of an industry leading Situational Awareness (SA) platform has been produced to provide a single view of network activity, bringing together customer calls, jobs, weather, sensor data, field team activity, asset information and alarms backed by data science models to accurately notify of events in real time and reduce response times through early identification.

2. Performance measure steering groups

We have set up Executive-led committees for monitoring and driving performance. These are cross-functional groups of people with the skills to identify drivers, innovate and hold the business to account for meeting performance targets.

Monitoring and understanding drivers is key to improvement. Specific metric programme boards are run each month to understand where we are and what needs to be done to meet the targets. Each group is accountable to a nominated director responsible for the commitment and key leads within the business.

Though the period we have moved away from individual commitment reviews instead concentrating on cross functional progress. This move to a more holistic approach has improved our understanding of the conflicting pressures, allowing more informed decisions to be made and a move from siloed working. These conflicts need to be understood to manage performance effectively. Such an example would be leakage reduction vs mains repairs or low pressure vs PCC. The move has enabled areas of the business to consider the affects any work that takes place has on performance in areas where they traditional would not have been involved.

3. Half year performance reporting

Put in place a full half year APR process to test our ability to report the data and to challenge performance through mock audits. Half year APR and the findings of the mock audits are presented to our Audit Committee. The Audit Committee also provide governance over the implementation of changes made to the APR process as a result of the half year APR.

Half year (APR) audits were introduced in 2020. All Performance commitments, key denominators, and items requiring additional scrutiny are reviewed on a half yearly basis. Our external auditors are invited to review performance, adherence to methodologies and comment on year end performance. A report is provided to the board following their review, highlighting areas for improvement and status of each metric.

The introduction of half year review has not only made year end reporting run more smoothly but has enabled identification of any issues early allowing time to resolve before year end.

Alongside half year audits, Performance commitments and key business data is reported monthly in the 'CEO Report', with forecasted year end performance provided to inform understanding of its currently position and where risks may occur. These figures are reviewed at each Executive Management monthly meeting. Further work, and queries are raised off the back of this where needed. The figures are provided to the board each month.

4. Reinstate confidence grades

We have reinstated confidence grades as a management tool for our regulatory data and will use them during the half year APR. We use these internally to understand the current quality of our data, and then to target our data improvement efforts.

We have reduced the use of confidence grades as they were no longer a formal regulatory reporting requirement. We instead review the commitments against the RAG component checklists as laid out in the respective guidance and work where necessary to make the required improvements. We are working on introducing more comprehensive lag and lead indicators (as part of the PIPE project) for each of our key metrics to understand the risks and constraints and where improvements could be made.

Each department maintains a risk register for current and future risks associated with both business-as-usual and potential future problems. Items are scored under a risk management matrix to understand the highest priorities which need review and action.

5. Increase ODI reporting to the Board

Introduce quarterly ODI monitoring to the Board to reflect the introduction of annual ODI rewards and penalties.

At PR19 we committed to quarterly ODI monitoring to the board. Throughout the period we have tracked ODIs, performance commitments and 'BAU' metrics on a monthly basis within the CEO report which is provided to the Board monthly. Each month the Board reviews the measures and are aware of risks and progress to date. The latest position is reviewed at the quarterly Board meetings. Forecasts are provided for each metric for year-end performance, along with a review of forecasted penalty and rewards. The Board are invited to interrogate and review current and future positions to understand where we are.

6. Delivery Plan annual review

We commit to an annual review of our AMP7 delivery plan to capture lessons learned and to adapt our approach based on those lessons. The revised delivery plan will be presented to our Board.

Delivery action plans are reviewed each January for the coming year to capture lessons learnt from the prior year, where plans need to be adapted or where improvements can be made.

The revised delivery action plans are provided to the Board for review and agreement of the budgets for the coming year.

7. Improving our risk assessment and risk management around key PCs

Review our operational risk registers and historic performance to identify indicators where a target is likely to slip or be failed in a given year.

Identify trigger points where a monitoring committee would increase the level of monitoring for each of our higher risk PCs.

Identify the actions that would be triggered at each trigger point (e.g., increased monitoring, changes in operational interventions, taskforce, increases in staff numbers).

Review the controls for specific delivery risks and updating as necessary in light of our new targets.

As discussed, performance commitments and key metrics which drive the business are collected and reviewed on a monthly basis in the CEO report. Discussions are held to review and identify the most important or 'at risk' metrics. Progress is tracked and where required additional plans put in place.

We are developing lag measures against each of our performance commitments and business functions to understand where we are to a greater degree.

Metrics are now reviewed cross functionally to understand the pressures and constraints of competing targets. This has given greater understanding across the business of the need to work collaboratively.

8. Shadow reporting for all new PCs

Put in place shadow reporting to the Board of the new AMP7 performance commitments for all PCs.

Performance commitments were shadow reported in 2019-20 to understand our base position going into the new price control period and external audits undertaken. Performance levels were reported to the Executive team and Board for transparency and understanding of starting position.

We are currently shadow reporting the proposed AMP8 PCs to understand our base position and to gain an early view of any blockers which may impede performance to 2030. We have held initial discussions with our external audits to ensure we implement robust reliable and accurate metric tracking.