Technical representation

Cost and efficiency

South West Water

Bournemouth Water

Isles of Scilly Water

Bristol Water

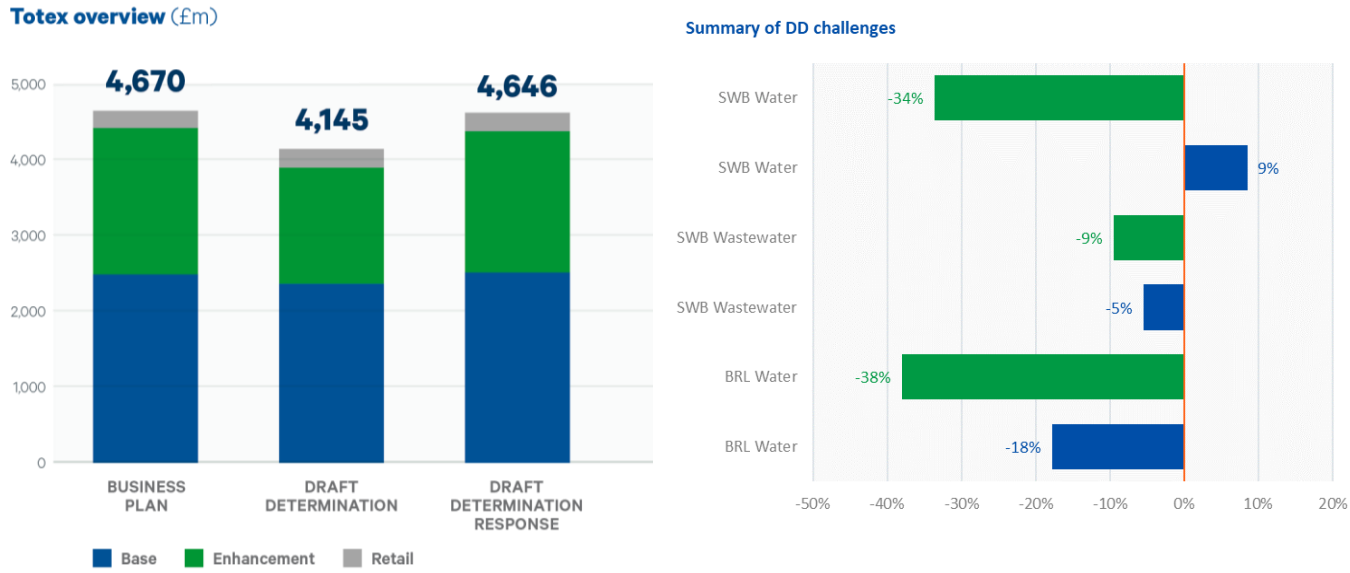
Contents

Executive Summary

We welcome Ofwat's decision to recognise the quality and ambition of our business plan, including our efficient costs.

Ofwat's Draft Determination has resulted in a c.-11% reduction in our expenditure allowances, with £120m downward adjustment to base cost allowances and £405m downward adjustment to enhancement allowances, following a 1% per annum frontier shift being applied. When aggregated with our stretching Business Plan assumptions this equates to c.-24% overall efficiency.

Figure A1 Summary of Ofwat's Draft Determination of expenditure allowances and our response



In the round, we are confident that our October Business Plan is efficient and includes expenditure allowances that will allow us to finance our functions and deliver against our statutory duties.

In our submission we introduced stretching and ambitious efficiency challenges prior to submission, embedding a c.17% efficiency challenge on our enhancement capital programme, and a 4.5% per annum base cost reduction. This resulted in an overall 13% efficiency challenge across our submitted expenditure allowances. We also worked closely with Defra, Ofwat, the Drinking Water Inspectorate (DWI), and the Environment Agency (EA) to scope the right investment to ensure that customers never 'pay-twice' for investments related to past commitments or to recover recent performance.

The impact of Draft Determination allowances differs across the revenue controls, company priorities and regions.

We observe the greatest impact on our water business where our enhancement allowances receive the greatest downward adjustment as a percentage of the overall Water Quality & Resilience programme (-38% SWB and -42% BRL). These challenges are felt acutely across our water treatment works upgrades, leakage reduction and water supply schemes. This is a particular concern for our larger schemes that are either supported by the DWI or the EA under our Water Resource Management Plan (WRMP). With this level of downward adjustment, these programmes are simply undeliverable.

Our base allowances also face pressure in this area mostly due to adjustments made by Ofwat to forecast business rate costs of £-77m. These principally hit our water services which incur 78% of the business rate costs.

Regionally, the impact of Ofwat's adjustments has been felt more deeply in Bristol. This is where enhancement reductions of c-£75m combine with reduced base allowances of £-96m to create a total additional efficiency challenge of c-23%.

Our approach to the representation

We believe our plan was ambitious and gave the right balance for customers, communities and the environment. We have already challenged ourselves to be efficient, whilst recognising areas where expenditure required in our regions are not representative of the industry position.

Having reviewed the Draft Determination we have shaped our representations around Ofwat's area of concerns and we provide the evidence requested to allow Ofwat to reinstate the expenditure allowances set out in our October submission. Returning to our business plan investment levels for the majority of our programme is key to ensuring that we can deliver on our promises to the customers, communities and environment that we serve.

As part of Ofwat's assessment of costs for the draft determination, we believe there are areas in Ofwat's PR24 methodology that could provide additional expenditure allowances above those levels submitted in our plan – this is in the region of £175m. However, we maintain the position that our plan is the right plan for our region, customers and communities and for this reason we do not pursue these additional allowances. In some cases we forego the additional allowances already provided in the Draft Determination.

Base Expenditure

Ofwat has introduced a downward adjustment for BRL base expenditure. Ofwat has recognised SWB as an efficient company, awarding the company increased allowances from modelled base costs in water and marginally lower allowances in wastewater. Our bioresources base costs are challenged, through the removal of our cost adjustment claim for sludge treatment (liming). Similarly, Ofwat has removed Bristol's cost adjustment claim for leakage. We represent on both of these challenges.

Table A1 Summary of Ofwat's Draft Determination for Base Expenditure Allowances

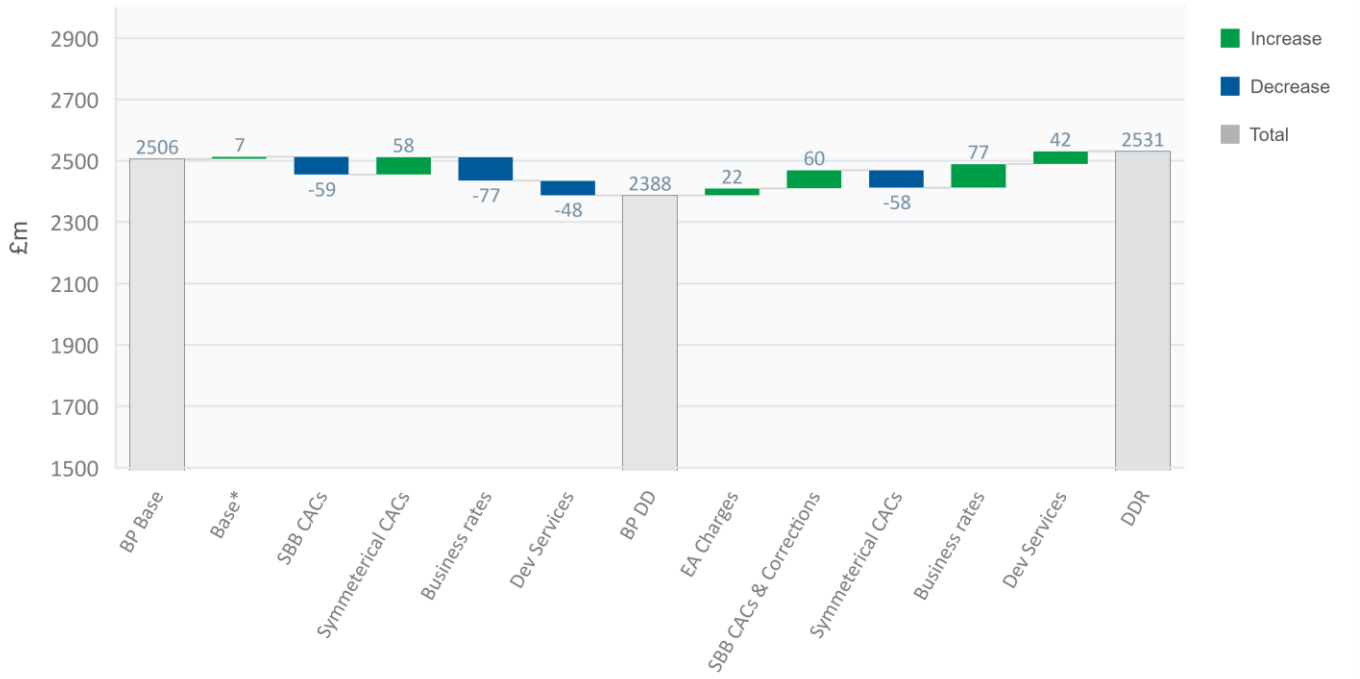
£m	WR	WN+	WWN+	BIO	SWB TOTAL	WR	WN+	BRL TOTAL	DS +Third	SBB TOTAL
BP	122	765	745	189	**1,821**	87	454	**541**	145	**2,506**
DD	124	839	733	151	**1,846**	74	372	**432**	97	**2,388**
Var	+2	+74	-12	-38	**+25**	-13	-82	**-109**	-48	**-119**
Var %	+2%	+10%	-2%	-20%	**+1%**	-15%	-18%	**-18%**	-33%	**-5%**

Overall, our representations equate to +£144m of base allowances, aligning back to our business plan plus the addition of Environment Agency charges that have been confirmed as applicable for this period at +£22m. We have also corrected how the 'accepted' canals and river trust supply cost adjustment claim was applied at Draft Determination. A summary of our base representation is visualised below.

Our specific representations include:

- **EA charges -** we have updated our business plan tables to include the +£22m of additional charges being applied by the EA in AMP8.
- **SBB Cost adjustment claims & Canals correction** – we have provided additional evidence and support for those areas where Ofwat's base models do not fully reflect the company specific circumstances. We have also corrected how Ofwat have applied the allowed Canals & Rivers Trust cost adjustment claim.
- **Symmetrical CACs** – we forego the additional allowances, and we represent on the additional conditions that are applied via PCDs.
- **Business Rates** – we seek reinstatement of the allowances for business rates to avoid the cashflow implications when we know that rates increase formulaically with increased revenues (directly linked to WACC as a measure of profitability) and the dates for revaluation are known for 2026 and 2029.
- **Developer services & third party** – we disagree that network infrastructure costs should be modelled and allowed for within overall base allowances as well as providing evidence for potential growth challenges.

Figure A2 Overview of our base allowances and representations



** Includes modelled allowances, third party costs and frontier shift*

Retail

Our BP identified £240m of totex expenditure required to deliver our retail services. This was allowed within the draft determination. The retail cost framework does not allow for inflation and therefore the total real retail costs equate to £219m.

Enhancement Expenditure

'Enhancement expenditure' is funding we use to go above and beyond current levels of service for customers and the environment.

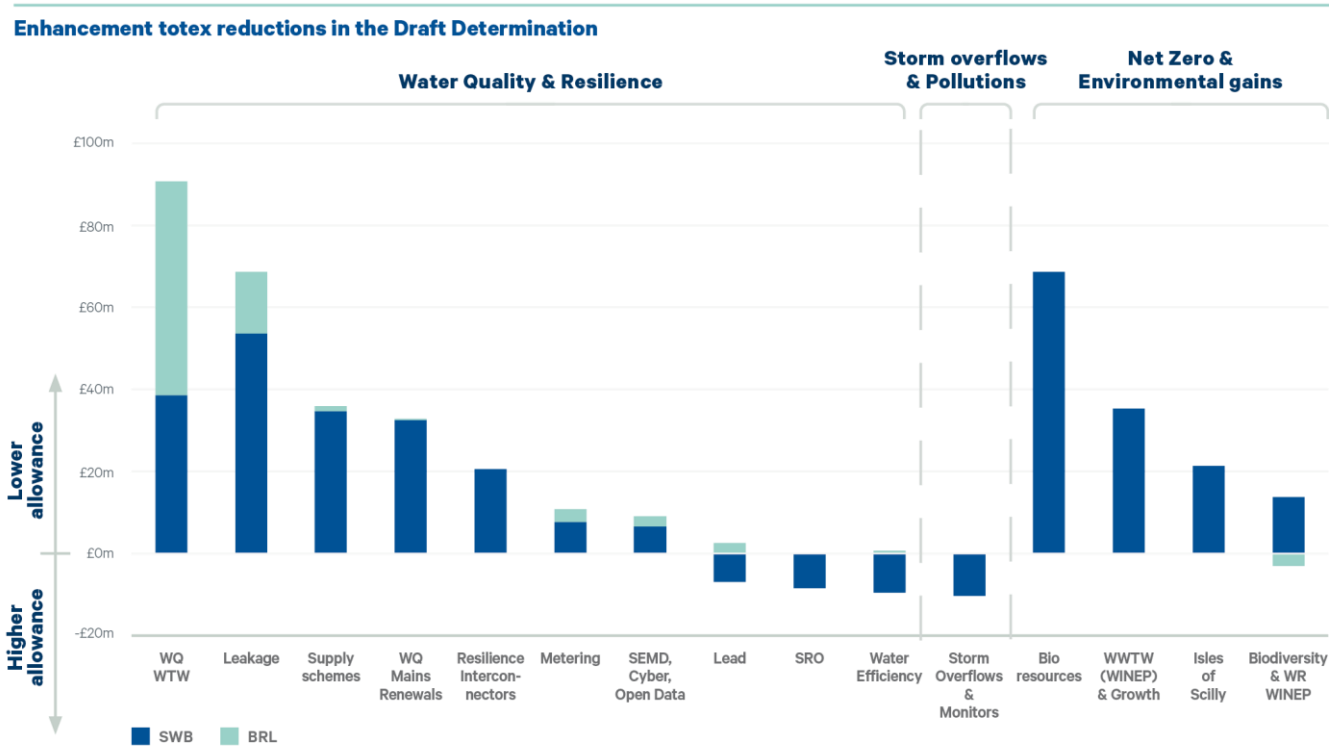
Overall, our representations for enhancement allowances and are focused on providing additional evidence and support linked to:

- **Need –** providing additional evidence to demonstrate the improved services being delivered to customers and addressing Ofwat concerns on base/enhancement allocations.
- **Optioneering** – we show that our engineering processes have considered and promoted the best option to customers through detailed information and supporting cost-benefit analysis where appropriate.
- **Cost efficiency** – we propose updates to the company specific efficiency factor for water and we evidence the efficiency of our costs through cost benchmarking and third party assurance.
- **Protection for customers -** We agree with the principles of PCDs but we propose updates to ensure we strike the right balance between scope for deliverability and ensuring we sequence our investment to maintain an efficient capital program.

Whilst our plan was assessed as outstanding, the Draft Determination reduces enhancement allowances by £405 (post-fronter shift) which is £373m (pre-frontier shift), and we have provided representations to ensure we can deliver on our customers priorities – as set out in our plan.

The chart overleaf shows the impact of Ofwat's draft determination against our specific business cases that sit within our business plan priorities.

Figure A3 Summary of Enhancement adjustments made by Ofwat in the Draft Determination



The most significant change in our enhancement programme is our water services where we have seen a c.£250million reduction, with a particular impact on Bristol. We have a clear need for investment, supported by the DWI, and we provide the clearer evidence in our representation to support reinstating these costs.

Our Net Zero & Environmental gains priority in SWB has also received a significant challenge by Ofwat. These challenges are largely focused on our Bioresources programme. Our Bio-resources programme has seen a series of challenges, first we have seen a reduction of £13m associated with the application of IED at Countess Wear, landbank mitigation and advanced thermal destruction has been removed and Growth enhancement expenditure has been moved to base maintenance. Our representations have concentrated on challenging the recognition of our growth and base maintenance costs as we do not consider these have been appropriately assessed. We are seeking a further £48m of enhancement expenditure.

We welcome the strong support for our Storm overflows programme, which will allow us to deliver quickly and effectively against this priority area for customers.

Areas of investment we forego additional allowances or do not propose additional challenge

In the Draft Determination Ofwat have set out a number of sector wide additional allowances for specific investment areas, namely: the symmetrical CACs and resilience investment. There are also specific enhancement models that would provide SBB with increased allowances beyond our business plan submission levels - these were storm overflows and septic tanks. The other modelled increases were either minor or balanced across a programme of investment.

In our response to Ofwat's base cost consultation (May 2023) we set out recommendations for several adjustments to variables used in Ofwat's base cost models. At the Draft Determination, Ofwat has made the decision to reject some of our recommendations on wholesale water models.

We remain of the view that these changes are important for the robustness of the models, and for ensuring the base allowances fairly reflect efficient costs. We have worked with Oxera to estimate the potential impact of our proposed modelling adjustments on our base allowances. The results of our modelling are presented within this document. However, we have not included these adjustments in our data tables, and we welcome further consideration by Ofwat.

We have considered all of the above alongside our draft determination allowances in the round and we have chosen to maintain our plan position by removing the symmetrical cost adjustment claims and septic tanks allowances, and we are not pursuing other potential areas for additional allowances.

Table A2 Summary of Ofwat positive adjustments foregone in our representation

	£m
Symmetrical CACs*	57.7
Resilience**	14.6
Storm overflow unit rate allowances**	35.0
Septic tanks allowances*	5.6
Base econometric modelling potential opportunities**	59.1
TOTAL	**172**

** Included in draft determination allowances and not accepted*

*** potentially available and not pursued*

Other areas of representation

At PR24 Ofwat have introduced a new system of Price Control Deliverables (PCDs), ringfencing funding for larger programmes of investment. We agree with the principles of PCDs but it is important to strike the right balance between scope for deliverability and being held to schedule which has been recognised for totex allowances. Many capital interventions are delivered in programme to meet the efficiency challenges embedded in our plan and we need to ensure that there is sufficient flexibility to support the most efficient (and environmentally sustainable) delivery.

We provide representations against the outputs for certain PCDs and provide recommendations for adjustments to a small number of PCD conditions. We believe we can work with some simplification including taking a portfolio approach to these measures to allow flexibility, innovation, and efficiency.

Our view is that these representations will help us to deliver better outcomes for customers and the environment and we would welcome engagement with Ofwat as we navigate this area ahead of the Final Determination.

Finally, given the ongoing changes to the statutory water resources, drinking water and environment programmes we have revisited our assessment of cost adjustments specific to the South West and Bristol areas. We have also reviewed our proposals for uncertainty mechanisms in select cases where statutory requirements are subject to significant uncertainty.

Both PCDs and uncertainty mechanisms are considered in more detail within the Risk and Return response document. Table A3 below provides a summary of the PCDs we are representing on and those where we do not provide any representations.

Table A3 Price Control Deliverables Summary table

PCDs requiring adjustment	PCDs we support
Mains renewal	Supply interconnectors (scheme level)
Water Supply schemes (excl. interconnectors)	Water efficiency (demand side improvements)
Metering	Lead
Raw Water Deterioration and Taste Odour Colour	Water Investigations
Resilience Interconnector	Nature based solutions for sanitary determinands
Security and Emergency Measures Directive	Treatment for tightening sanitary parameters
Phosphorus Removal (scheme level)	Sludge treatment (thickening and dewatering)
Wastewater investigations	First time sewerage
Industrial Emissions Directive	
Growth at sewage treatment works	
Septic tanks replacements	
Storm overflows (scheme level)	
Storm overflows- screen only	
Storm overflows- pass forward flow	
Continuous river water quality monitoring	

Section 1 – How we Developed our Plan

A fundamental pillar of our approach to assessing our costs was the stretching efficiency challenge that we imposed on both enhancement and base expenditure before we submitted the business plan. This resulted in a c.17% forecast efficiency for enhancement expenditure, and a 4.5% per annum efficiency for base expenditure.

The total value of these efficiencies is c.£600m. These reductions in cost were accounted for in our business plan submission and data tables and they were broadly split 50/50 between base and enhancement costs.

Details of how we have developed efficient enhancement costs are included in our enhancement business cases, submitted in October 2023. We undertook a three phased process of scoping, costing and assurance to ensure that we developed efficient and technically feasible solutions. Once these costs were developed, an additional overarching efficiency was applied across our enhancement allowances of c.17%. This additional efficiency will provide a strong incentive for innovation in our capital delivery in AMP8, helping us to maximise value for money for customers in partnership with our supply chain. Where our costs have been challenged, we provide additional evidence to Ofwat of our three phased process for that specific area.

We are also challenging ourselves to achieve net zero operational emissions from base investment, and to carry the costs for electrifying our vehicle fleet. We recognise that these decisions are within management control, and in the case of net zero costs could be recovered in future years. For this reason, we do not cite these investment pressures as additional efficiencies.

Section 2 – Base Expenditure Allowance

'Base expenditure' is the funding we use to deliver our day-to-day services, including maintaining and renewing our existing assets.

Ofwat's Draft Determination sets expenditure allowance at £2,388m. This compares to a total of £2,508m of base expenditure submitted in our plan. Our representations for base expenditure total £2,509m, with a further £22m requested to support charges for environmental permitting, bringing our total representation to £2,531.

We have accepted the challenge of Ofwat's Frontier Shift of 1%, which will see us make incremental improvements in our efficiency each year.

In this section we provide evidence to support the re-instatement of £143m of base funding.

We provide evidence for the reinstatement or inclusion of the following costs:

- +£77m for business rates;
- +£56m for our Leakage and Bioresources Liming Cost Adjustment Claims.
- +£4m for our Canal and Rivers Trust Supply Cost Adjustment Claim, to correct for misallocations;
- +£22m for new Environment Agency permitting charges; *and*
- +£42m of developer services costs.

We have made the decision to remove:

- -£58m for Ofwat's symmetrical cost adjustment claims, as these did not feature in our plan;

Lastly, we chose not to pursue additional opportunities from base modelling improvements:

- +/-£60m of additional allowances resulting from our proposed changes to Ofwat's base models.

Consistent with our past responses to Ofwat's base econometric modelling consultation, we provide evidence in support of adjustments to Ofwat's modelling suite. We have not included these adjustments in our submitted data tables for base costs but recommend that Ofwat considers our recommendations further.

We also provide representations against Ofwat's energy adjustment, consistent with those presented by other Water UK members. This representation has not been reflected in our updated allowances or data tables.

Table 2.1 Base Expenditure Allowances (£m, post-FS and RPE, 2022/23 prices)

Price control	BP	DD	Representation	DD Response	Table Ref.
SWB Water resources	109.2	116.9	-	116.9	ADD1
SWB Water network+	643.1	717.2	-	717.2	ADD1
SWB Wastewater Network and Bioresources	834.5	837.4	+22.1	859.5	ADD6
Subtotal SWB	**1,586.8**	**1,671.3**	**+22.1**	**1,693.7**	**ADD1 & 6**
BRL resources	63.9	54.8	+4.8	59.6	ADD1
BRL network+	408.4	340.1	+0.4	340.5	ADD1
Subtotal BRL	**472.3**	**394.9**	**+5.1**	**400.1**	**ADD1**
CACs (submitted)	71.4	12.7	+67.1	67.1	CW18
CACs Symmetrical	-	57.7	-57.7	-	n/a
Business Rates	**231.3**	**153.9**	**+77.4**	**231.3**	**CW2, ADD1 & ADD6**
Developer Services & Third Party	**144.6**	**97.0**	**+42.0**	**139.0**	
TOTAL	**2,507.5**	**2,387.5**	**+143.4**	**2,531.1**	**-**

2.1 How we developed our base costs

Ofwat define base costs as routine, year-on-year costs incurred in the normal running of our business. Base costs provide a base level of service to customers and maintain the long-term capability of assets.

To understand the cost of maintaining base levels of service we used a suite of investment and risk optimisation models. These models assessed the underlying risks to performance and service because of asset ageing and condition deterioration. We are confident in our assessment, as we were recognised by Ofwat in the 2021 Asset management maturity assessment as having the highest scoring "decision-making" capabilities across the sector.

We forecast the Performance Commitment Levels (PCLs) expected to be delivered through base expenditure alone (referred to by Ofwat as 'what base buys') before setting the 'stretch' which we apply as a combination of an efficiency challenge to our base costs and through more challenging targets that will be delivered through innovation and / or through enhancement investment.

These forecasts have been derived through a separate 'bottom-up' (econometric) and 'top-down' (trend) analysis of historic data, conducted by external economic consultants, before being assessed by asset management and operational experts to triangulate the analyses and arrive at an agreed forecast position for 'what base buys'. These analyses use historical data on base expenditure, our own PCLs, adjustment factors to account for the impact of historical enhancement investment on PCLs and changes to the definitions of Performance Commitments (PCs) over time. The results of this analysis are reported in our Long-term Delivery Strategy.

Various methods and data were used in the development of the Base Maintenance allowances through 'bottom up' modelling. Care was taken to align the methodologies of SWB and BRL with the submission of separate but intrinsically linked plans. Extra work focused on the creation and validation of deterioration modelling for Bristol Water in Asset Investment Manager (AIM) software, which has historically been used by South West.

The cost models and methodologies applied were reviewed by Jacobs including a high-level review by KPMG. This included aspects laid out in the Government Green Book around the use of optimism bias in costing of infrastructure projects.

The overall Base Maintenance we submitted was purposefully stretching with ambitious efficiency applied to the overall plan. This reflected Ofwat's expectations that "Companies will need to submit stretching business plans in terms of efficiency".

2.2 Base Cost Models

Here we make specific representations in response to Ofwat's determination of wholesale water expenditure allowances, and we respond to Ofwat's decision on population forecasts for base cost models.

Population Forecasts

Ofwat has made the decision to reject the population forecast used in SWB's business plan submission.

We are confident in the population forecasts submitted with our plan. We provided evidence in our business plan submission in support of these forecasts. Since our plan was submitted the Labour Government have committed to significantly increase house building across England, which will add pressure to forecast new connections in our region. While growth increased more slowly in 2023 / 24 compared to previous years, this appears to be driven by wider macro-economic trends leading to a reduction in internal migration.

We recommend that Ofwat accept the population forecasts submitted with our business plan. However, we have not included our proposed population forecast in the modelled base costs submitted with this plan.

Developer Services

In our business plan we submitted base cost allowances for Developer Services of £146m. Of this total c.£42m was allocated to network reinforcement costs, anticipating the increase in connections that we forecast in AMP8 and beyond.

Ofwat has made the decision to assess the costs of Developer Services network reinforcement within their base econometric models. The net impact of this is a movement of these costs into our base allowances in our region and therefore creating a £42m pressure. We are of the view that developer services costs should not be assessed via the econometric models because they cannot be assessed accurately in Ofwat's models due to the variation between companies and the need for a company specific assessment. We propose to reinstate the £42m of base cost allowances for developer services. Here we provide evidence to support this representation, including:

- Our latest forecasts for new connections;
- Commentary on the sensitivity of Ofwat's econometric models to regional growth; and
- Commentary on the sensitivity of Ofwat's econometric models to tipping points in network capacity.

We submitted new connection forecasts in our plan prior to the new developments in government policy regarding house building. Data was based on forecasts produced by Experian. The Labour Government has since made the decision to deliver 1.5 million new homes by 2030, through reforming planning laws, challenging local authorities to deliver more ambitious local plans across England, and supporting large-scale new towns (UK Government, 2024). This policy change creates significant uncertainty for our growth forecasts for AMP8, and means that we must be prepared for an increase in network reinforcement requirements in our region.

The Covid 19 Pandemic has led to a downturn in internal migration and home building. This is consistent with the slight downward trend in our new connections figures over the last five years. Given the significant ambitions of the Labour government, and the existing increase in planned development in our region, we are forecasting an increase in new connections consistent with our WRMP.

The population and new connection forecasts we used in our plan were developed in 2022 with support from Experian, prior to recent announcements by the labour government. Recent discussions with Local Planning Authorities (LPAs) confirm that housing targets have increased significantly since the introduction of the Labour government. LPAs are now revisiting their Local Plans to increase their housing delivery numbers which has resulted in the majority reopening consultation on their plans. This includes a review of sites that didn't previously make their Local Plan allocations when they were previously set. These new Emerging Local Plans include a recent call for sites who wish to be considered for inclusion. This is a required step as part of the National Planning Policy Framework (NPPF).

We are actively engaged with the LPAs across our operating region with each at different stages of maturity but all authorities understand that their current plans will not meet the new targets. In reality most are behind their current completion targets and therefore they need a fresh approach to accelerate growth. Consequently, we have an engagement programme with both LPAs and the national housebuilders to ensure that we understand the pace of development to ensure that our investment plans match the development need to meet our Statutory Authority obligations to help to facilitate growth.

Based on ONS local authority housebuilding data, the Southwest of England on average delivered 12% of total homebuilding in England between 2009 and 2023. Applying this average to the Government's target of 300,000 homes per year, infers annual housing delivery in the Southwest of England of c.35,000 per year between 2025 and 2030. This is more than double the historic average of c.16,400.

We also observe a strong recovery in the housing market in the South West, despite a dip in prices and exchanges in the last year seen across much of the UK. Land registry data shows that house prices in Devon and Cornwall are now respectively 6% and 4% above the peak seen across the UK in 2021. This is further evidence that demand for new housing is strong in our region and will attract further private investment in home building.

If Ofwat wish to lower population estimates, it is important the developer services reconciliation mechanism is retained to ensure we can continue doing our part to provide a foundation for sustainable development in our region. It is clear that the pressures of housing development in some regions of England are leading to significant challenges for planning authorities. Natural England has made the decision to intervene in several major planning applications on the grounds of water neutrality, making a case that new development should not lead to a deterioration in the condition of water courses due to abstraction. Networks and network capacity are an important part of ensuring that new growth can be accommodated sustainably, providing for transfers of water from more sustainable sources to points of new demand. It is therefore doubly important that our network reinforcement keeps step with the Government's ambitions for housing development.

Finally, Ofwat's econometric models are not sensitive to network capacity. Companies' networks vary significantly in their design, and in rural regions networks tend to be more constrained as they were not designed to accommodate significant population growth. Parts of our region are therefore particularly sensitive to new development, and in particular to the development of new towns. Given that Ofwat's models do not account for these tipping points, we recommend that Ofwat assess network reinforcement costs outside of the econometric models.

Our view is that these representations justify a return to our business plan allowance for Developer Services of £146m.

Wholesale Water Base Cost Models

In our response to Ofwat's base cost consultation (May 2023) we set out recommendations for several adjustments to variables used in Ofwat's base cost models. At the Draft Determination, Ofwat has made the decision to reject some of our recommendations on wholesale water models.

We remain of the view that these changes are important for the robustness of the models, and for ensuring the base allowances fairly reflect efficient costs. We have worked with Oxera to estimate the potential impact of our proposed modelling adjustments on our base allowances. The results of our modelling are presented in table 2.2 below. We have not included these adjustments in our data tables, but welcome further consideration of this representation by Ofwat.

Table 2.2 Summary of Base Cost Modelling Representation (£m, Post-FS and RPEs, 2022/23 prices)

Representation	SWB	BRL	SBB
Consider length of mains as an alternative scale variable in wholesale water models	+16.9	+3.6	+20.5
Remove models relying on the number of booster pumping stations as a topography driver	+36.3	+2.3	+38.6
TOTAL	+53.2	+5.9	+59.1

Here we provide further evidence in support of our recommended base modelling adjustments. A full summary can be found in appendix SBBDD30_L5_CEAPP_Base_Cost_Model_Benchmarking_Report.

Wholesale Water: Length of mains as an alternative scale variable

Consistent with our base cost consultation response in May 2023, we are supportive of the consideration of length of mains as an alternative scale driver in Ofwat's wholesale water base cost models.

With regards to the Length of Mains scale driver in wholesale base cost models, we observe:

1. It is inconsistent to have properties as a scale driver in water resources plus (WRP) models, length of mains as a scale driver in treated water distribution (TWD), and only one of them, properties, as a scale driver for wholesale water models;
2. It is not appropriate to rely exclusively on properties as a scale driver for wholesale water models given that, from both our and Ofwat's perspective, properties are the most suitable scale driver to assess WRP costs, yet these are the minority component of wholesale water costs whereas TWD costs are the majority component (around 60%).
3. Consistent with the strong engineering rationale to explain TWD costs, length of mains is statistically significant at the 1% level in all 12 wholesale water models when used as a perfect substitute to the number of connected properties; and
4. It is the only option recommended by CEPA for modelling wholesale water base costs that has been ignored by Ofwat. The four other proposals—average pumping head as a topography driver, properties per length as a density driver, WAD MSOA as a density driver and WAD LAD from MSOA— have been fully considered by Ofwat.

In response to Ofwat's comments on our proposals in the draft determination (Ofwat, 2024), we observe the following:

1. Models using properties per length of main as the density variable produce the same outcome irrespective of whether properties or length of mains are used as the scale variable due to the laws of logarithms;
2. Because number of properties and length of mains are highly correlated, using both variables as scale drivers in separate wholesale water models would lead to similar results, not justifying doubling the number of wholesale water models;
3. Length of mains is not an intuitive driver of water resources and water treatment costs, which are largely driven by quantity and quality of water sourced and treated, rather than network length;
4. Our proposed approach (length of mains as an alternative scale driver) would mean adding 8 more wholesaler water models, not 12 as implied by Ofwat; and

5. We disagree with Ofwat's argument that our approach would produce 'similar results'. Using both variables as scale drivers in separate wholesale water models leads to similar results in the round across the entire industry but it makes significant differences in cost predictions for individual companies (by up to 2.7% or £19m with a 50/50 split).

Based on these observations, we recommend that Ofwat include length of mains as an alternative scale variable in the wholesale water base cost models at the Final Determination.

Wholesale Water: Removing models relying on booster pumping stations as a topography driver

Consistent with our base cost consultation response in May 2023, we are concerned with Ofwat's use of the number of booster pumping stations (BPS) as a topography driver in the Wholesale Water models. Our view remains that Average Pumping Head (APH) represents a clear superior alternative to the number of BPS to reflect network topography.

A summary of our review of Ofwat's modelling approach at the Draft Determination is presented in Appendix SBBDD30_L5_CEAPP_Base_Cost_Model_Benchmarking_Report. With regards to the BPS as a topography driver in wholesale base cost models, we observe:

1. APH is a superior variable for capturing the costs driven by the topography of a companies' region, as it is a very good proxy for the volume of water pumped and the water pressure. This has been recognised by Ofwat in the draft determination;
2. The number of BPS is uncorrelated to energy consumption and power costs. Conversely, APH shows a much higher degree of correlation with power costs (SES Water, 2023, Figures 3 and 6);
3. Should any weighting be assigned to BPS, it would be more appropriate to consider the *capacity* of BPS, rather than the *number* of BPS. We raised this point in our base cost consultation, stating that the model implied that one BPS with twice the capacity of two smaller BPS would be half as costly, which is counterintuitive and unrepresentative of actual operating circumstances; and
4. The data quality of APH has significantly improved since PR14 and PR19. This results from a collective effort from the industry, which was supported by Ofwat for improving the methodology for data collection and, ultimately, the reliability of the data. There are also several other variables that are either measured or estimated, so it is unclear why APH would receive a different treatment in this regard.

Based on these observations, we recommend that Ofwat remove BPS as a topography driver in the wholesale water base cost models at the Final Determination.

2.3 Base-funded mains renewal

Here we provide representations to Ofwat's determination of mains renewal activities funded from base expenditure, and the associated price control deliverables.

A full representation covering Ofwat's determination of enhancement funding for leakage and quality-driven mains renewal is provided at sections 5.2 and 5.3.

At the Draft Determination, Ofwat has made the decision to reprofile forecast mains renewals over the 2025-30 period, introducing more stretching targets for companies. We propose adjustments to the mains renewal PCD outputs for both SWB and BRL as they are not aligned with our business plan submission.

Ofwat have assumed that all companies will deliver a mains renewal rate from base expenditure of 0.3% per annum, regardless of the condition of their existing asset base. They have asked BRL to go further with a renewal rate of 0.33% per annum from base.

A full appraisal and response to Ofwat's proposed renewal rates for SWB and BRL is provided at appendix SBBDD80_L5_CEAPP_Base_Potable_Mains_Renewals. For SWB, we provide evidence to show that a 0.18% per annum renewal rate from base provides an efficient level of asset resilience and maintains asset health. For BRL we present evidence to show that a 0.28% per annum base-funded renewal rate is efficient.

For BRL, Ofwat has challenged the Outcome Delivery Incentive (ODI) PCL for mains repairs. We have presented options for alternative PCLs for mains repairs in the Bristol region. See our Outcomes representation document for further information. SWB's PCL for mains repair remains unchanged from our Business Plan.

Based on the evidence provided we are also representing to adjust the PCD outputs for base-funded mains renewal in both the South West and Bristol Water regions.

Table 2.3 below shows our proposed mains renewals profile for SWB and BRL, to allow the ramp up of work in year 1 and year 2. This profile will allow us to deliver efficiently.

Table 2.3 Proposed Base Wholesale Funded Mains Renewal Linear Profile for SWB and BRL

PCD outputs (Per Year)	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
SWB	Annual % of total renewal	12.00	20.00	22.66	22.67	22.67
SWB	km	20.12	53.66	91.66	129.68	167.70
BRL	Annual % of total renewal	12.00	20.00	22.66	22.67	22.67
BRL	km	11.80	31.46	53.73	76.01	98.29

We have undertaken a full assessment of Ofwat's assumptions for base-funded mains renewal activities for both SWB and BRL.

For SWB, we find that there is strong evidence that, Ofwat's assumption of 0.3% mains renewals per year is:

- Not consistent with its methodology for determining its efficient benchmark for the industry and SWB;
- Will lead to a softening of efficiency targets for the industry and SWB if correctly taken into account;
- Is potentially underfunding companies, as efficiency targets are calibrated based on lower rates of replacement than Ofwat's view of efficient rates, making them unrepresentative for determining AMP8 efficiency targets and therefore too stretching; and
- Is not consistent with SWBs asset management cycle.

We have worked with Oxera to re-estimate Ofwat's efficiency benchmarks, assuming that upper quartile companies have replaced mains at a rate of 0.3% per annum over the last five years, as expected by Ofwat for AMP8. When compared with Ofwat's efficient unit cost assumption for mains renewal, this analysis shows that companies have not been funded to deliver a mains renewal rate of 0.3% for AMP7.

We have updated our internal asset health modelling to better understand the renewal rate that we have delivered from both base and enhancement funding historically, and the renewals required in AMP8. Our analysis has now been split by base and enhancement activities.

For SWB our evidence shows that an adjustment to the base funded renewal rate is justified at 0.18% (167.7km) per annum compared to the 0.05% submitted with our plan. We have updated the profile for the associated PCD, as in table 2.3 above.

Ofwat have assumed a renewal rate of 0.33% for base-funded mains renewal activity within Bristol. Ofwat have also introduced an additional stretch on Bristol renewal rates to 0.43%, covering renewals of mains in conditions four and five funded via a symmetrical base cost adjustment.

We provide updated asset deterioration modelling outputs for the Bristol region, which shows that a total renewal rate of 0.28% per annum from base expenditure is efficient and provides an appropriate level of asset resilience. We have therefore revised the PCD outputs for Bristol base-funded mains renewals in-line with this target. Consistent with our business plan, we have made the decision to remove Ofwat's symmetrical cost adjustment claim for BRL from our base expenditure.

Our assessment for SWB and BRL also shows that there is a clear need for quality-driven mains renewal in both regions and leakage renewals in the Bristol region. In our view, these are enhancement activities. We provide representations on Ofwat's adjustment to our enhancement-funded quality-driven and leakage mains renewal programmes at section 5.3 Drinking Water Quality.

The delivery profiles for all companies appears to have been initially set as a linear profile. This will be a challenge to deliver, especially in year one as with both areas of the company this represents a significant increase in mains renewals. Considering the design time, and factors outside our control (e.g. Street Works permits) there is a significant risk of penalty in year one that we cannot mitigate. We have taken this into consideration in our PCD delivery profile.

2.4 Base Cost Adjustment Claims

Table 2.4 below summarises our base cost adjustment claims, Ofwat's assessment and our representation amounts.

Table 2.4 Summary Base Cost Adjustment Claim Representation (£m, pre FS and RPE, 2022/23 prices)

Cost Adjustment Claim	Company	BP	DD	Representation	DD Response	Table Ref.
Canal Rivers Trust supply cost	BRL	£11.54	£12.68	-£1.14	£11.54	CW18.7
Leakage	BRL	£12.13	£0.00	£9.89	£9.89	CW18.17
Bioresources Liming	SWB	£47.77	£0.00	£47.77	£47.77	CWW18.7
TOTAL		**£71.44**	**£12.68**	**£56.52**	**£69.17**	

Our October Business Plan submission recognised three areas where Ofwat's modelling approach does not fully reflect our company specific circumstances. We proposed three cost adjustment claims to our base allowances to correct for these, covering abstraction from the Gloucester and Sharpness Canal, leakage activities in the Bristol region, and sewage sludge treatment (liming).

At the Draft Determination Ofwat made the decision to remove our cost adjustment claims for liming and leakage but awarded us the full value of our Canal and Rivers Trust supply cost claim.

Here we provided further evidence to respond to questions raised by Ofwat in the Draft Determination, and to provide further evidence to support the re-instatement of our leakage and liming claims.

Bioresources Liming

We have reinstated our base cost adjustment claim for Bioresources (Lime stabilisation). Ofwat's base expenditure allowances for bioresources at the Draft Determination do not reflect the higher cost of delivering day to day bioresources services in a mainly rural region, and on an environmentally sensitive peninsula where alternative market options are limited.

Raw sludge liming is a material driver of our existing Bioresources expenditure. We are an outlier in the industry mostly as a consequence of our rural geography, dispersed population, and associated road network. Other WaSC's have made considerable investment into alternative treatment (Advance Anaerobic Digestion) in previous periods, and we have yet to follow this migration because of the geographic difficulties outlined above.

We are therefore more reliant upon Lime stabilisation of bioresources than other companies. In our plan we submitted a claim for **£47.77 M** to support our current liming activity. We believe this is required because the capital maintenance modelling for Bioresources under-estimates the expenditure that we require to continue to meet our obligations for the safe and resilient disposal of Bioresources for AMP8.

Ofwat have rejected this claim on the basis of **need** and **cost efficiency**.

We have made the decision to re-instate the liming cost adjustment claim. Here we present our rationale and provide evidence against Ofwat's Draft Determination.

The following appendices are referenced in this representation:

- SBBDD84_L5_CEAPP_Long_Term_Power_Forecast

Need

In their Draft Determination, Ofwat state that the choice of sludge treatment technology is within management control. They observe that at PR14 SWB evaluated the potential for AAD during the 2014-2016 period and made the decision not to pursue alternative treatment technologies. Here we provide evidence of the need for our liming cost adjustment claim.

At PR14, SWB chose not to transition one site to Advanced Anaerobic Digestion (AAD) due to economies of scale and the anticipated opportunities that could come from the emerging bioresources market. This was the best value option for customers, given the unique circumstances in our region.

We have a disparate population and as such have maintained a larger number of small (by industry standards) treatment facilities, utilising lime stabilisation. Transport links in the southwest region are challenged, particularly in the summer season, which also supported multiple, small treatment facilities, reducing the distance needed to transport treated bioresources for recycling to the landbank. The enhanced product achieved from lime stabilisation is acceptable to farmers in our region, given its suitability for recycling to grassland. In addition, at PR14, AAD designs were effective at scale greater than even our largest sites, however recent developments in AAD technology (modularisation) have reduced the size/throughput at which AAD is available and effective.

Ofwat also observes variation in the ratio of sludge treated between Anaerobic Digestion (AD) and lime stabilisation over time within our region. This is stated by Ofwat to be evidence of management control over treatment processes. In reality, these variations are more closely associated with geographic fluctuations in sludge production and the availability of our existing AD asset base, which is vulnerable to reactive and maintenance activity which we consider to be outside of management control.

Strategies for Bioresources treatment and disposal are usually relatively long-term compared to AMP cycles and set for decades covering at least 3-4 planning periods. Companies can choose a phased transition from one technology to another but that is dependent on variables outside of management control, such as remaining asset life in existing assets, opportunities, and risks with bioresources disposal. Once investment is made in a treatment technology, change is only possible with significant investment. This investment is needed whilst still incurring the costs of ongoing operation and maintenance. There are significant challenges in transitioning to a new treatment technology, and we disagree that this transition is fully within management control. This Is particularly evident if companies are not adequately supported for base operations and maintenance, as is the case with SWB, given Ofwat's Draft Determination on our October business plan submission.

One exception to this was in AMP3 and AMP4 when the industry invested in bioresources drying technology, which proved to be a poor fit with skill levels and recycling routes. This was a short-term transition and has meant that these strategic treatment options are now applied over longer periods and are tested more rigorously.

Ofwat have used their econometric modelling to calculate the base allowances for Bioresources across the industry, however for the reasons laid out in our Liming and Bioresources PR24 Cost Adjustment Claim document we believe that the model is not appropriate and undervalues the base funding requirements for SWB. As part of our BP submission, we proposed an alternative modelling approach, which took treatment type into account, and continue to believe that this approach is more representative than Ofwat's econometric model which does not differentiate between treatment type.

The costs for treatment and disposal of Bioresources are reported through the APR process. To evidence our status as an outlier, we have used this data to demonstrate that industry wide costs of treatment and disposal are dominated by AD and AAD. Sector-wide liming made up only 3.67% of the treatment process capacity in 2023/24 which is typical of AMP7, with AD and AAD making up 55.8% and 35.33% of treatment process capacity. Liming is used across a limited number of companies. South West Water and Wessex Water are the only companies that make significant use of lime stabilisation, therefore any model derived from industry data without reference to treatment type is automatically dominated by Digestion (AD and AAD). Table 2.5, below, shows this comparison.

Table 2.5 Treatment type across water industry, % (England and Wales)

Treatment	ANH	NES	NWT	SRN	SVT	SWB	TMS	WSH	WSX	YKY
% sludge untreated	0	0	9.7	0	0	2.9	2.6	0	0.2	0.2
% Sludge treatment process – raw sludge liming	2.8	0	1.9	0	0	64.9	0.5	0	25.9	0
% Sludge treatment process – conventional AD	1.2	0	26.9	100	39.3	31.3	31.2	0	21.1	81.2
% Sludge treatment process – advanced AD	94.8	100	60.9	0	60.7	0	54.4	99.6	50.9	18.5
% Sludge treatment process – incineration of raw sludge	0	0	0	0	0	0	10.8	0	0	0
% Sludge treatment process – other	0	0	0	0	0	0	0	0	0	0
% Sludge treated by 3rd party service providers	0.8	0	0.6	0	0	0.5	0.5	0.4	2.1	0.1
Total	100	100	100	100	100	100	100	100	100	100

SWB are particularly impacted by this because liming makes up 69.3% of our treatment capacity (average for 2020/21-2023/24). Totex for digestion per tonne of dry solids (TDS) is, in general terms, lower than for liming. This can be evidenced from data taken from the APR.

Liming is particularly impacted by changes in energy costs, such as those seen in AMP7. In 2014-2016 the price of electricity was ~£0.11 – £0.12/kWh which is a significant factor in determining the most cost-efficient option for customers, with regards to sludge treatment.

In AMP7, energy prices have increased significantly, peaking at more than £0.27 kWh. According to Ofwat's third party forecasts, prices are now forecast to decrease back to levels at around 2021 (SBBDD84_L5_CEAPP_Long_Term_Power_Forecast). However, power costs are forecast to remain 50% higher (c.£0.17 kWh) than those in 2014 – 2016.

The energy surcharge, payable to our lime supplier, has varied as shown below. This volatility in energy costs and therefore lime costs will not be captured by an econometric model that does not account for treatment type.

Table 2.6 Energy surcharge volatility for liming

Year	Tonnage	Energy surcharge per annum, for lime £k
2022	10,908	£661
2023	9,103	£178

The need for the additional funding is justified as a result the higher cost of liming treatment, and our exposure to unforeseeable fluctuations in the cost of energy that cannot be offset by renewable power generation, as other WaSCs can do, through AD or AAD treatment processes. These factors are exogenous, outside of management control, and were not foreseeable in PR14.

Cost Efficiency

Ofwat's econometric model uses the total amount of sludge produced as a cost driver. We believe that this under-represents the costs for SWB as the liming process and digestion processes have very different impacts on the quantities of bioresources for disposal. On average, water companies will experience a circa 50% reduction in mass through the digestion processes, Anaerobic Digestion (AD) and Advanced Anaerobic Digestion (AAD). This compares favourably to liming, where an increase in mass of circa 17.6% is generally realised. This increase in bioresources mass incurs additional transportation and disposal cost, which is not reflected in the econometric model, as treatment type is not a factor. SWB proposed an alternative approach in the Cost Adjustment Claim, which would have taken this into consideration, however this was rejected by Ofwat on the grounds that it didn't demonstrate cost efficiency.

Table 2.7 Bioresources comparisons 2023/24 (APR)

Water Company	Bioresources Produced TTDS/annum	Bioresources Disposed TTDS/annum	% change	Predominant treatment types
SWB	41.4	45.1	8.94	64.9% Liming 31.3& AD
SRN	110.8	61.6	-44.40	100% AD
NES	71.1	26.6	-62.59	100% AAD
WSX	68.0	51.3	-24.54	50.9% AD 26.0% Liming

Further to Table 2.7 above we see that Northumbrian Water are funded for the disposal of 71.1TTDS per annum but, due to their treatment type, they only have 26.6 TTDS per annum to dispose of. We have the opposite situation caused by the net increase in bioresources mass due to liming. We note also that Wessex Water has seen an increase in liming from 7% in 2020/21 to 26% in 2023/24, although we have the greatest proportion of bioresources treated through liming.

As treatment type is not considered in the econometric model, this difference is not reflected in base funding allowances. We believe that this contradicts Ofwat's objective to have an equitable and even-handed approach for all companies.

Our analysis of historic (2011/12-2020/21) OPEX unit cost by treatment type shows that liming is the most expensive treatment type with an average unit cost of £0.13m/TTDS, compared to £0.10m/TTDS for AD and £0.02m/TTDS for AAD. It is acknowledged that liming will generate greater treatment and disposal costs, but also capital maintenance costs given the predominance of mechanical and electrical equipment and the harsh operating environment exposure to lime creates.

Our alternative econometric modelling included two alternative variables to account for treatment technology:

- Percentage of bioresources treated by liming; and,
- Percentage of bioresources treated by digestion (AD and AAD).

This was shared with Ofwat to make their econometric modelling approach for PR24 as robust as possible. Our modelled approach demonstrated that the coefficients for liming and for digestion were statistically significant in all options of the bioresources cost/revenue definitions. The R-squared values for our models were also higher than Ofwat's equivalent R-squared values.

From Ofwat's econometric modelling we are considered as having the highest costs in the industry making us a cost outlier. However, when the treatment types are considered and liming costs and digestion costs are compared, we are among the most efficient companies using this treatment type, as outlined in our PR24 Cost Adjustment Claim document.

We understand and accept that including treatment type in econometric models could result in a risk of creating perverse incentives, however, SWB committed to liming as our principal process for reasons that were valid at the time and remain so. Our recent (Nov-Dec 2023) Asset Condition, Performance and Management survey raised no issues with the asset operability and reliability, although average asset age is high by industry standards. Our PR24 Cost Adjustment Claim for liming will enable us to operate efficiently, as we currently do, using lime stabilisation as our main treatment technology. This will further enable us to fulfil our duty under the Water Act, while planning our transition to a more efficient technology in the future, when appropriate for our region, asset and customer base and options for disposal.

We have provided evidence that our costs for liming are efficient, through our alternative modelling approach which was shared in our PR24 Cost Adjustment Claim document.

Canal and Rivers Trust Supply Cost

Nearly 45% of Bristol Water's deployable output comes from the Gloucester and Sharpness Canal. A long-standing contractual agreement with the Canal and Rivers Trust has secured this resource, which is fundamental to successful delivery of our 2024 Water Resources Management Plan. Ofwat have provisionally accepted the cost allowance on need and partially passed the claim on cost efficiency.

We submitted a cost adjustment claim for **£11.54 m.** We are re-submitting our claim in full.

Ofwat have offered us an allowance of **£12.676 m**, stating these are unmodelled costs i.e. reinstating the implicit allowance of **£1.136 m** we deducted from our gross claim.

Our view is that our original submission is more reflective of our costs. The principle of an implicit allowance is part of Ofwat's methodology, and is an important precedent for allowing this claim, as noted by the Competition and Markets Authority (CMA) at PR19. We welcome Ofwat's recognition of this claim in a way that is consistent with historical decisions.

At the Draft Determination, Ofwat overwrote our **£4.7 m** of funding requested for 'Canal and Rivers Trust Abstraction Charges and Discharge Consents' with the **£12.68 m** of funding allowed for this claim. This incorrectly disallowed £4m of funding. We have corrected this error by assigning funding of **£4.7 m** to 'Canal and Rivers Trust Abstraction Charges and Discharge Consents' and **£11.54 m** to 'other operating expenditure'.

The implicit allowance reflects that there are a small number of other similar arrangements - albeit at much smaller scale than BRL - and that the implicit allowance more fairly reflects efficient costs in the case of Bristol. This is despite the much higher cost of pumping treatment due to location and water quality of this historical water source arrangement. Technically, the implicit allowance reflects a cost efficiency challenge (which for water resources is difficult to assess other than through cost models), when sources are not directly substitutable due to geography and that water is a scarce resource, and spare water in itself has an economic and environmental value.

We will write to Ofwat shortly to provide a full assurance statement for our Canal and Rivers Trust supply cost adjustment claim.

Cost Efficiency

In the Draft Determination, Ofwat requested additional evidence to show that costs are efficient relative to other potential water sources. Here we provide an overview of our claim. This is not a new topic and has been covered extensively at previous reviews, and by its nature is unlikely to change over time.

In our Business Plan we noted that wider water resources in the West of England could not provide the 210 Ml/d Ml/d provided by CRT, which means that irrespective of cost this is the only source of water available to BRL customers.

We have a contract with CRT to abstract up to 76,650 ML per year from the canal, equivalent to an average of 210ML/d. For comparison, our largest impounding reservoir Chew Valley Lake (capacity 20460ML, 48th in UK) has an annual abstraction limit of 22,000ML equivalent to an average of 60ML/d – less in a dry year.

Our CRT contract is currently the most cost-efficient option for storage and abstraction in this area of supply. In order to be more cost efficient and to maintain reliable supply, a large surface water source would need to be developed. This new source would need to be 3.5 times the capacity of Chew Valley Lake and would become the UK's 15th largest reservoir. For this to be a realistic option, there would also need to be a sizable river at that altitude.

Our agreement with CRT also offers us resilience to dry and drought years. We already have evidence of the important role that this water resource play, with BRL operating normally with no drought measures throughout 2022-23, unlike many other water companies. We are also able to provide resilience beyond our operating area, e.g. supporting Wessex Water, exporting from this source.

We have already referenced the limited comparators in our Business Plan. Table 2.8 below presents these values again.

Table 2.8 Canal & Rivers Trust – comparative costs bulk charges

Description	£/Ml
Canal & Rivers Trust - transfer to Bristol Water (AMP8)	£40.23
Severn Trent cost for use of Elan Valley	£71.00
Yorkshire Water - Bulk Charges, from Ofwat Register of Special Agreements 2017/18	£193.00
Affinity Water - Bulk Charges, from Ofwat Register of Special Agreements 2017/18	£79.00
Northumbrian Essex and Suffolk - Bulk Charges, from Ofwat Register of Special Agreements 2017/18	£79.00

In our Business Plan, we also referenced the capital costs for development of a second reservoir at Cheddar. These figures show that, even if it were possible to develop a new water source it would be more expensive than using the existing resource available through the CRT. In the Draft Determination, Ofwat has asked for comparisons with alternative resources in £ per megalitre per day (£ml/d).

In Table 2.9 we present three Strategic Resource Option (SRO) schemes developed in the South West: Mendip Reservoir, Cheddar 2 and Poole effluent recycling. The cost for these schemes as presented in our updated Water Resource Management Plans (WRMPs) (SBBDD73_L5_CEAPP_dWRMP24_Revised Tables) for the EA are shown as "prior to being in use" and "once in use", roughly equivalent to CAPEX and OPEX. We have provided a comparison of the operating costs of the Purton Water Treatment Works (WTWs) with the SROs, as shown in the Table 2.9. These operating costs are for treatment and pumping to the Bristol Area. This makes the cost more comparable to the SRO scheme costs.

Looking at OPEX alone, sourcing water from the CRT (including costs associated with Purton WTWs) is 5 to 6 times less expensive than the costs associated with new schemes. It is also important to note that the three SROs provide a combined annual average deployable output of 31.8 ML/d, compared to the 153.6 Ml/d we would need if the CRT agreement was not available to us.

This evidence shows that the CRT abstraction remains a best value option for customers at this time.

Table 2.9 Canal & Rivers Trust – comparative costs, alternative schemes (£m, 2022/23 Prices)

Description	Ml/d	Cost to build	Annual Cost after Build
CRT plus Purton Treatment Works	153.6	0	**299.9**
Mendip reservoir	12.5	2,331.4	3,416.6
Cheddar 2	13	1,197.5	1,559.1
Poole effluent recycling	6.3	628.5	1,809.5

We have made the decision to include the net claim of **£11.54 M** in our business plan, as our view is that this is more reflective of our costs.

Leakage

We have reinstated our base cost adjustment claim for Leakage in Bristol because Ofwat's determination did not reflect the higher marginal costs for maintaining our sector-leading leakage performance.

BRL has industry leading leakage performance. In this way we meet our supply demand balance cost-effectively and addresses customer priorities by maintaining our assets and protecting the environment. We are confident that our leakage strategy will contribute to Water UK's Leakage Routemap to 2050, which require us to halve an already challenging leakage performance by 2050. These lower-than-average leakage levels are delivered through additional expenditure.

We submitted a cost adjustment claim for **£12.13m.** We are re-submitting our claim at a value of **£9.89m**.

Ofwat rejected this claim on the basis of **need** and **cost efficiency**. Here we present evidence to demonstrate both the need for this claim, and the cost efficiency of Bristol's leakage activities, reducing slightly reflecting the mechanical approach and Bristol performance in this area.

Updating our allowance for the latest APR data

At PR19 the expenditure allowance for BRL's leakage cost adjustment claims was calculated using the CMA's methodology. We have used the same approach at PR24.

We have now updated our calculations using the latest APR data, to establish an efficient level of expenditure. We have calculated the claims using the same data (maintenance and enhancement split of information) BRL used at PR19, which is now collected through the APR. The approach and data source are therefore unchanged for the CAC.

Using the latest APR data, our updated forecast AMP8 base costs for Leakage is **£40.37m**. As determined by the CMA at PR19, the value of this claim is based on the level of outperformance on the upper quartile. Based on the latest APR data BRL expects 24.5% outperformance on the upper quartile. Applying this percentage to BRL's total allowance, the updated allowance for our Cost Adjustment Claim is **£9.89m.**

We have used this value in our updated Business Plan data tables, submitted in response to Ofwat's Draft Determination.

Need for adjustment

Ofwat have challenged the need for our leakage cost adjustment claim. The regulator says that our claim does not provide sufficient evidence of unique circumstances and argues that the claim sits within management control. They also argue that our claim fails to demonstrate that performing above the upper quartile for leakage costs more than performing below the upper quartile.

Consistent with our Business Plan and the CMA's PR19 redetermination, we are of the view that there is a clear need for this claim.

The circumstances in the Bristol region are unique. We have maintained low levels of leakage in comparison to the industry, performing beyond the upper quartile consistently since the early 2000s (Water UK, 2022, p.34).

The CMA (2021) have concluded that there is a link between leakage performance and costs, and "in order to maintain their current level of performance, these high performing companies would be expected to incur costs that exceed implicit allowance for leakage costs" (CMA, 2021, Para. 8.59). The established CMA methodology for calculating these additional costs takes into account the factors that are outside of management control.

There is clear evidence that performing above the upper quartile for leakage costs more than performing below the upper quartile. Evidence presented to the CMA at PR19 shows that the marginal cost of reducing leakage increases as you get to more challenging leakage targets.

While the need for investment is clear, we understand the concerns raised by Ofwat regarding the calculation of efficient costs for leakage reductions above the upper quartile. There is no agreed methodology for calculating the extra cost associated with lower levels of leakage. On balance, we are of the view that the approach used by the CMA at PR19 remains a pragmatic solution to calculating the difference: percentage outperformance multiplied by efficient future base expenditure needs.

Cost Efficiency

Ofwat say that we have not provided sufficient evidence to demonstrate that our cost estimates for this claim are efficient.

Ofwat reference new information collected since PR19 (Ofwat Table LK1, 2022), and advise that this is used to establish both the need for this cost adjustment claim and the efficient level of the claim. Our view is that this new information does not provide evidence that there is no need for this claim, does not provide a sound basis for calculating the efficient level of this claim, and advise that this is used to establish both the need for this cost adjustment claim and the efficient level of the claim. Our view Is that this new information does not provide evidence that there Is no need for this claim and does not provide a sound basis for calculating the efficient level of this claim.

Ofwat have found that the relationship between leakage spend and leakage levels show a mixed picture at a company level. This was the CMA's reason (CMA, 2021, Para. 8.106) to take a tailored approach rather than a "one size fits all" in setting appropriate leakage enhancement allowances: differences in individual circumstances needed to be considered. This included the 2019/20 baseline levels of leakage and local conditions. This would make it difficult to use company expenditures to establish cost efficiency for leakage management and led to the development of a high level approach to establishing cost adjustments for frontier level companies, as described above. It is precisely for this reason that we have maintained the approach taken by the CMA at PR19 when calculating this claim.

As mentioned above, there is wide recognition that achieving more stretching leakage targets will require a step change in performance for most companies, resulting in a step-change in costs (Water UK, 2022, p.90). While it is not possible to compare across the industry on a unit cost basis, we can qualitatively benchmark the efficiency of individual companies. Using this approach, Isles Utility's Leakage Management Benchmarking Programme (LMBP) found that BRL came top in the Infrastructure Leakage Index amongst the UK water companies. This provides further evidence that BRL's costs are efficient.

There is no direct link between base cost models and a particular level of leakage. We have achieved and maintained our frontier level of performance through high levels of activity and investment (both capex and opex).

Based on this evidence we recommend that Ofwat re-instate our base cost adjustment claim for leakage.

2.5 Symmetrical Cost Adjustments Claims

Representation

- Ofwat have proposed an increase to our base allowance of **£75.03m** resulting from sector wide adjustments to base expenditure allowances.
- We **reject an increase to our base cost allowance** based on these sector wide allowances.
- We already have a stretching plan and we are not proposing to recognise allowances and would **not therefore have the outcomes associated with the proposed adjustments**, including commitment to PCDs and ODI PCLs tied to these monies.
- This is because of the principle that our business plan, with customer support, had considered these topics carefully, and we are comfortable that our asset management approaches understand the level of mains replacements that are necessary, and we tested outcomes and service levels with customers. We are seeking a return to our submitted plan.

Table 2.10 Sector Wide Cost Adjustments (£m, pre FS and RPE, 2022/23 prices)

Cost Adjustment	Company	BP	DD	Representation	DD Response	Table Ref
Phosphorus Removal	SWB	00.00	6.34	-6.34	00.00	n/a
Net Zero adjustment	SWB	00.00	2.68	-2.68	00.00	n/a
Net Zero adjustment	BRL	00.00	0.49	-0.49	00.00	n/a
Main renewals adjustment	BRL	00.00	10.36	-10.36	00.00	n/a
Meter replacement adjustment	SWB	00.00	50.43	-50.43	00.00	n/a
Meter replacement adjustment	BRL	00.00	4.72	-4.72	00.00	n/a
TOTAL		00.00	75.03	-75.03	00.00	

At PR24 Ofwat has made the decision to introduce a new system of Symmetrical CACs. These claims provide additional funding where Ofwat has assessed that the cost of day to day services are higher for reasons that are not within the companies' control. Ofwat awarded South West and Bristol Water **£75.03m** of symmetrical claims.

Our October Business Plan submission included an efficient level of Base Expenditure, developed from an understanding of the activities and costs required to maintain existing levels of service commitment to our customers. We are confident in this plan and would like Ofwat to support it.

We have therefore made the decision to remove all of Ofwat's Symmetrical CACs from our representations.

Specifically, we have removed:

- £6.34m extra Opex for 27 PR19 phosphorus removal schemes in SWBr;
- £2.82m extra funding to deliver an extra 2.5% GHG emission reductions (tCO2e) for SWB;
- £0.55m extra funding to deliver an extra 2.5% GHG emission reductions (tCO2e) for BRL;
- £10.36m for extra water mains replacement in BRL;
- £50.43m for an additional 391,277 smart meters in SWB; and
- £4.72m for an additional 36,655 smart meters in BRL.

We have therefore also removed the additional PCD outputs associated with these claims, where relevant. These include:

- Increasing the AMP8 annual mains replacement rate for BRL from 0.28%/yr (98km in AMP) to 0.33%/yr (118km in AMP);
- The proposed customer protection (PCD) that covers meter replacements, upgrades, and installations; and
- Requirement to reduce GHG emission (tCO2e) by a further 2.5%.

Consistent with these changes, we have re-instated the ODI PCLs for operational greenhouse gas emissions that we submitted with our plan. We remain committed to our embodied greenhouse gas emissions bespoke performance commitment. Please see our Outcomes representation document for further detail of our representations on performance commitments.

2.6 Energy Cost Adjustment

Representation

- Ofwat have proposed a reduction to our base allowance of **£15.44m** resulting from a sector wide energy real price effects adjustment.
- We **have not included Ofwat's energy adjustment in our data tables**.
- We propose amendments to Ofwat's energy adjustment, based on work undertaken by Baringa on behalf of Water UK.

Table 2.11 Energy Adjustment (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Representation	DD Response	Table Ref.
SWB	00.00	-13.13	+13.13	00.00	CW2 and CWW2
BRL	00.00	-2.31	+2.31	00.00	CW2
TOTAL	00.00	-15.44	+15.44	00.00	

Energy Adjustment

Following the recent volatility around global energy prices, we welcome OFWAT's consideration of adjustments linked with energy pricing. Whilst supportive, the methodology employed by CEPA within their analysis has resulted in a reduction to our base allowance from forecast energy cost decreases or £15.44m across the three price controls.

We reject this adjustment, because the resultant reduction to our base costs is not reflective of our own energy forecast position which projects continued elevated energy costs throughout the AMP compared with previous periods.

Further evidencing issues with the adjustment approach, we make reference to work undertaken by Baringa on behalf of WaterUK, which provides a thorough review of the approach to setting these adjustments. We understand that this report has been made available to Ofwat directly by Water UK.

This work has demonstrated a number of key issues with the methodology, which has led to an overly punitive adjustment to our costs. We observe the following issues:

- The use of a price series that is unhedged and unrepresentative of the costs water companies face (the series is also used for a period of anomalously high peak prices);
- The use of inconsistent (hedged and unhedged) energy prices and indices; and
- A methodology that is highly sensitive to parameter changes and is thus capable of producing arbitrary outcomes.

To address these issues, Baringa propose a revised methodology addressing these issues which results in a cost uplift as opposed to the reduction put forward in the Draft Determination. We support the proposed Option 2B methodology drawing on DESNZ price data and the suggested update of the base year to utilise the most recent and accurate data.

Complimenting the modelling work discussed above, our own view of energy price forecasts for the period 2025-30 has developed since the submission of our Business Plan in October 2023.

We continue to see a downward trend on commodity costs compared with the market peaks of 2022 and 2023. However, our forecasts do not predict a fall in prices as significant as suggested by CEPA.

We also see that the market remains very reactive to geopolitical matters which we believe will continue to be a risk for future years. Additionally, we are forecasting a marked increase in non-commodity costs driven by policy costs (e.g. Contracts for Difference) and network charges (e.g. DUoS and TNUoS). The net effect of these forecasts is elevated energy costs, higher than we had foreseen at the time of Business Plan submission, throughout the AMP compared with previous periods.

Ex-post true-up mechanism

In response to expectation that volatility will continue across energy markets for the upcoming years, OFWAT is proposing a true-up at the end of the AMP between forecast and outturn energy prices using the DESNZ price indices.

We support the inclusion of this mechanism to help manage expected volatility within the period. Whilst supportive, we would still like to understand the proposed process of settling this true-up considering the variability of both power demands and costs.

2.7 Business Rates

Representation

- Ofwat have proposed a reduction to our unmodelled base allowance for business rates of -**£78m**.
- We are representing to re-instate the full allowance for business rates submitted with our plan.
- Here we provide evidence to support our assessment of the rateable value of the business, and our forecast of the business rates multiplier.

Table 2.12 Business Rates Adjustment (£m, 2022/23 prices)

Company	BP	DD	Representation	DD Response	Table Ref.
SWB	186.29	129.34	+56.95	186.29	PR24 DD Expenditure Allowances summary spreadsheet
BRL	45.01	24.5	+20.51	45.01	PR24 DD Expenditure Allowances summary spreadsheet
TOTAL	231.30	153.84	77.46	231.30	

Business rates are charged on non-domestic properties such as offices and factories. Cumulo rates refer to rates on land and buildings where operating assets are held (eg a water treatment works).

There are two factors which affect the overall rates cost:

- **Rateable Value** – which is the company specific asset equivalent value which is established through an established formula
- **Business Rates Multiplier (UBR)** – set by government and applied to the ratable value.

The most recent review of business rates was implemented for the 2023/24 financial year, delayed from 2021 because of the pandemic. The Government has signalled that the next revaluations will take effect in 2026 and 2029 and this will certainly increase rates – particularly cumulo rates – that has a relatively mechanistic approach.

Whilst Ofwat has established a mechanism where costs are shared with customers 90:10, this applies only at the next price review and therefore will result in SWB having to fund the increase (which is forecast to be significant) for three years of the regulatory period – accounting for £78m.

This presents a further financial risk issue for the business, that we have not experienced in the past. We are confident in our forecasts for business rates, and therefore request that Ofwat re-instate the relevant unmodelled base expenditure allowances.

We support the 10:10 cost sharing rate proposed. However, this is no substitute for including a central estimate of likely cost changes. Indeed, having such a cost sharing rate makes it easier to include company specific forecasts of business rate changes. On cumulo rates in particular there are very company specific changes in valuations over time, often linked to changes in wholesale revenues not being matched to the specific asset groups that the VOA methodology includes or excludes as being attributed to the hypothetical tenant.

Water cumulo

The water cumulo assesses a ratable value (RV) through a complex formula based on notional profitability for the water network which reflects two key aspects:

- **Profitability of the water business** – which is driven by the VOAs 'Receipts and Expenditure'.
- **Tenant asset share** – proxy share of assets which are assumed above ground assets linked to the delivery of the water business and which are not subject to the water cumulo.

Profitability of the water business

The approach for setting the overall profitability was established in the 2023 valuation and is directly linked to the revenue and profit expectations. The basis for 2026 and 2029 reflected the increased wholesale revenue which is driven in part by the cost of capital which, based on the methodology, increased for 2.96% real in PR19 (the basis for the 2023 valuation) to 3.72% at PR24 which will be the basis for the next scheduled valuations.

Given the further increase in the cost of capital at the draft determination this will only increase the potential value at future revaluations – and therefore the position within the business plan would be considered at the lower end of expectations.

Tenant Share

To ensure our approach is prudent, the tenant share of assets (which reduces the ratable value) has been based on current existing 2023 valuation and inflated to the revaluation dates of 2026 and 2029 for 2025-30 regulatory period. SWB has, in historical revaluations been able to use a detailed review of our fixed assets to increase the tenants share (thus reducing the RV).

There is potential that as non-infrastructure investments are delivered the proportion of tenants' assets could increase – reducing the overall share – however assuming the 2023 valuation without any reflection of future investment is minimising the forecast potential cost for 2025-30.

Overall valuation

The estimated Rateable Values (using the inflated 2023 Tenant's Assets) for the 2026 and 2029 revaluation were set out in our business plan and shown again in Table 2.13 below.

Table 2.13 Estimated Rateable Values (£, 2022/23 prices)

Company	Agreed 2023 RV	Estimated 2026 RV	Estimated 2029 RV
SWB	33.4	68.0	79.8
BRL	9.6	23.7	31.8

In addition, a proportion of transitional relief was assumed to limit the substantive increase in 2026/27, 2027/28 and 2029/30 – which again limits the actual increase assumed to be borne by customers, however this dependent on this being available at the new revaluation.

Wastewater business rates

Wastewater business rates are again expected to have a revaluation in 2026 and 2029, consistent with the water cumulo. The 2023 valuation result in a substantive increase in the ratable value from £13.0m to £17.1m. It is anticipated that future valuations would see an increase and forecast values are based on the BCIS All-in TPI indices for the three yearly revaluations in 2026/27 and 2029/30.

Figures included are based on best estimated figures across the whole portfolio (calculation at a site level is not possible due to the number of sites). Transitional relief is confirmed for the three years 2023/24 to 2025/26 and winds down over this period. It has been assumed that this will decrease smoothly over the three-year period.

Business Rates Multiplier (UBR)

The total business rates liability is calculated by multiplying the ratable value by the business rates multiplier (UBR). For the PR24 business plan for both SWB and BRL we assumed the current UBR of 51.2p.

This is considered to be the prudent approach. The UBR level has been 'held' since 2021 and there is an expectation that CPIH increases will be applied and further increases may follow future government decisions.

Conclusion

It is clear that rates will increase over time, and that customers will have to pay for this at some point. Companies cannot carry the cashflow risk associated with this issue, given how stretching the PR24 control is. We recommend that Ofwat re-instate the full business plan allowance for Business Rates.

Section 3 - Retail Expenditure Allowances

Our business plan identified £240m of expenditure required to deliver our retail services and this was allowed within the Draft Determination.

Ofwat say that the retail expenditure allowances in their draft determination may not be sufficiently stretching. Our view is that Ofwat's benchmarking for the retail price control is sufficiently stretching. The statistical quality of the models remains similar to past reviews, and retail by its nature is designed to be a simpler price control without annual inflation indexing. Therefore, we believe that an upper quartile benchmark remains appropriate as with other base cost areas. In addition, the retail cost framework does not give any allowances for Inflation or RPEs, and has not since PR14, which places significant cost efficiency challenges in this area.

Section 4 – Enhancement Expenditure Allowances

'Enhancement expenditure' is funding we use to go above and beyond current levels of service for customers and the environment.

Ofwat's Draft Determination reduced our enhancement expenditure allowances from £1,860 m to £1,538m. Against an already efficient plan, this reduction in expenditure allowances means that we cannot deliver the step-change in service levels needed for customers and the environment.

Across the remainder of this document, we provide evidence to support an additional £344m of funding, resulting in total enhancement expenditure of £1,882m.

Our representations include:

- £84m funding for strategic water treatment works and upgrades to existing water treatment works, all of which have received support from the Drinking Water Inspectorate.
- £67m funding to deliver a step-change in reductions to water demand, helping us build resilience to climate change in the Southwest.
- £35m for improvements to wastewater treatment, to help us improve river water quality by removing nutrients from the environment.
- £22m to ensure that we can deliver sewerage services to the Isles of Scilly for the first time, cleaning up beaches, marine environments, and groundwater on the islands.

Ofwat has introduced a company-specific efficiency challenge against water resources schemes assessed using a shallow dive. This imposes an arbitrary 20% reduction in expenditure allowances for a range of schemes. We provide compelling evidence to demonstrate the requirement and associated costs of this intervention.

In line with our principle of broadly maintaining our Business Plan totex levels, we have not recognised £5m of additional allowances in wastewater. In addition, we are not pursuing

- £35m of additional storm overflow expenditure awarded through Ofwat's econometric models.
- £15m of additional allowances for Resilience improvements.

To support Ofwat's review of this document, we present our representations against Ofwat's enhancement 'feeder models'. We are representing by exception, including recommendations and evidence where we are rejecting an increase or decrease in our expenditure allowances. We have grouped our representations against our four priorities, as overleaf in Table 4.1.

Where we are providing representations on price control deliverable (PCD) outputs or conditions, we provide these in-line with our comments on individual feeder models. Our high-level recommendations on PCDs are provided in our Risk and Return representation document.

Some PCD outputs were not part of our submitted business plan, and we are concerned about our ability to deliver some of these. In some cases, we are of the view that the conditions attached to PCDs could stifle innovation and reduce our efficiency.

We are particularly concerned about the outputs associated with the metering PCD, which we believe are not representative of currently available technology.

Several of Ofwat's new PCDs seem to restrict companies to specific methods for delivering performance improvements. We are particularly concerned about the complexity of the conditions for the storm overflow PCDs. Although there is some flexibility in deliverables, any changes require regulatory approval, which could delay progress and increase the risk of time incentive penalties.

Further evidence against our representations is provided in appendices, which we have sent to Ofwat alongside our representations.

Table 4.1 Summary of Representations by Feeder Model

Priority		Feeder Models
Water Quality and Resilience	PR24-DD-W-Supply PR24-DD-W-Supply-Interconnectors PR24-DD-W-Strategic-resource-options PR24-DD-W-Metering PR24-DD-W-Leakage PR24-DD-W-Demand-side-Improvements PR24-DD-W-Raw-water-quality-deterioration	PR24-DD-W-Improvements-to-taste-odour-and-colour PR24-DD-W-Lead PR24-DD-SEMD-water-waste PR24-DD-W-Resilience-Interconnectors PR24CA39 – Cyber – water and waste PR24-DD-W-–-Resilience PR24-DD-WW-Resilience
Storm Overflows and Pollutions	PR24CA55 - WW - Storm Overflows PR24CA20 - WW - CWQM	PR24CA16 - WW - Event duration monitoring
Net Zero and Environmental Gains	PR24-DD-W-Drinking-Water-Protected-Areas PR24-DD-W-INNS PR24-DD-W-Biodiversity PR24-DD-W-Eels-fish-passes PR24-DD-W-Eels-fish-entrainment-screens PR24-DD-W-Water Framework Directive PR24-DD-W-Investigations PR24-DD-WW-p-removal PR24-DD-WW-Nutrients-or-sanitary-dets-NbS PR24-DD-WW-Sanitary-parameters PR24-DD-WW-Septic-tank-replacements-treatment-solutions-and-flow-diversion	PR24-DD-WW-p-removal PR24-DD-WW-Nutrients-or-sanitary-dets-NbS PR24-DD-WW-Sanitary-parameters PR24-DD-WW-Growth at STW PR24-DD-WW-First-time-sewerage PR24-DD-WW-Freeform PR24-DD-WW-IED-enhancement PR24-DD-WW-sludge-treatment-thickening Bioresources Growth Sludge storage – Cake pads/bays/other

Table 4.2 Enhancement Expenditure Price Control Deliverables Summary table

PCDs requiring adjustment	PCDs we support
Water Supply schemes (excl. interconnectors)	Supply interconnectors (scheme level)
Metering	Water efficiency (demand side improvements)
Raw Water Deterioration and Taste Odour Colour	Lead
Resilience Interconnector	Water Investigations
Security and Emergency Measures Directive	Nature based solutions for sanitary determinands
Phosphorus Removal (scheme level)	Treatment for tightening sanitary parameters
Wastewater investigations	Sludge treatment (thickening and dewatering)
Industrial Emissions Directive	First time sewerage
Growth at sewage treatment works	
Septic tanks replacements	
Storm overflows (scheme level)	
Storm overflows- screen only	
Storm overflows- pass forward flow	
Continuous river water quality monitoring	

4.1 Wholesale Water 20% Company Specific Efficiency Challenge

Ofwat has introduced a 20% company specific efficiency challenge for wholesale water expenditure where a 'shallow dive' applies. Shallow dives have been applied to all expenditure that is less than 0.5% of totex.

This shallow dive efficiency challenge has resulted in a reduction of £78m in our enhancement allowances, or 4% of total enhancement expenditure. This is on top of the 17% efficiency challenge that we applied to all enhancement expenditure, before submitting our plan.

We strongly disagree with Ofwat's rationale for the shallow dive efficiency challenge. Here, we provide evidence that the challenge is not justified, and that a proportion of the allowance removed from our plan via shallow dives should be re-instated. A full assessment of Ofwat's company specific efficiency challenge is presented at SBBDD74_L5_CEAPP_Enhancement_Company_Specific_Challenge.

We have worked with Oxera to assess potential adjustments to Ofwat's approach, including a preferred option which is consistent with Ofwat's approach at PR19. Oxera have calculated the impact of these options on the shallow-dive efficiency challenge for SWB and BRL. We present the outputs of our analysis below. Our conclusions and recommendations are presented at the end of this section.

Table 4.3 Summary of Representations against Ofwat's Company Specific Efficiency Challenge

Adjustment	Revised % Company-Specific Efficiency Challenge	
	SWB	BRL
1: Adopt PR19 base efficiency challenge	0%	10.74%
2: Adopt 10% cap as in PR19	10%	10%
3: Exclude Leakage from the calculation shallow-dive challenge	18.29%	5.54%
4: Combining options 2 and 3	10%	5.54%

Adopting PR19 base efficiency challenge

Ofwat's approach to shallow dives at PR24 is inconsistent with the approach they took at PR19. At PR19, Ofwat determined the shallow dive efficiency challenge based on estimated base cost efficiency. We believe that base costs are still a more robust proxy for the overall efficiency of companies, and that there is no justification for departing from the PR19 approach. We recommend that Ofwat revert to the approach taken at PR19.

At PR19, Ofwat considered that 'it is appropriate to use a measure of base cost efficiency to challenge enhancement costs because we expect companies to use consistent approaches to costing all elements of their plans' (Ofwat, PR19 FD, p.55). Ofwat also stated that 'this approach is consistent with the view that base cost efficiency provides a good guide to overall business plan efficiency and with a light touch, proportionate approach for low materiality proposals' (Ofwat, PR19 FD, p.56).

The degree of certainty around companies' estimated inefficiency is much higher for base costs than for enhancement costs. This is why Ofwat applies an upper-quartile catch-up efficiency benchmark for base costs but only a median catch-up efficiency benchmark for enhancement costs.

This rationale was confirmed by the CMA in its PR19 redeterminations, where it noted that the use of enhancement costs as a proxy raised 'serious challenges' (CMA Redetermination, 2021). The CMA observe that the evidence base for enhancement costs is relatively small, puts too much weight on enhancement models, and is sensitive to changes in the scope of specific projects.

At PR24 it is still true that Ofwat is not able to develop a robust and independent view of efficient enhancement costs as it remains dependent on companies' forecast data.

We ask Ofwat to revert to its PR19 approach and use companies' base cost efficiency as a proxy for companies' efficiency in areas accounting for less than 0.5% of their requested TOTEX.

Adopting the PR19 approach would reduce the company-specific efficiency challenge to 0% for SWB, and 10% for BRL.

Adopting a cap at 10%

Ofwat also does not justify why the cap has increased from 10% at PR19 to 20% at PR24. If anything, the case should be lower as the degree of certainty around companies' estimated inefficiency has increased due to a 0% weighting assigned to companies' base cost efficiency.

The combination of these two changes, a 100% weighting on the estimated enhancement efficiency and the increase of the cap from 10% to 20%, is not appropriate. As such we ask that Ofwat revert to the PR19 approach of setting a cap at 10% for the shallow-dive efficiency challenge.

Excluding Leakage from the calculation of the shallow-dive challenge

Ofwat's assessment of enhancement expenditure for leakage suffers from a series of shortcomings and conceptual errors. We also observe that the assessment is reliant on approximations. Our view is that these issues mean that leakage is irrelevant for determining the shallow dive efficiency challenge for water enhancement.

On this basis, if Ofwat decides not to assign a 100% weighting to companies' base cost efficiency as in PR19, we recommend, at the very least that Ofwat discard leakage enhancement expenditure from their determination of the shallow-dive assessment.

Oxera's assessment suggests that excluding leakage from the shallow-dive challenge would reduce the company-specific efficiency challenge to 18.29% for South West and 5.54% for Bristol Water.

A full assessment of the enhancement leakage modelling is provided at Appendix SBBDD74_L5_CEAPP_Enhancement_Company_Specific_Challenge. In summary, we observe:

- Ofwat's use of common unit cost rates for leakage modelling is not appropriate;
- Ofwat has excluded the impact of weather events when calculating leakage costs; and
- Ofwat's approach assumes that any enhancement expenditure will automatically translate into leakage reduction, a claim that is not supported by performance data.

Given the inconsistencies and weaknesses of the leakage modelling, it is not appropriate to pass on the presumed estimated inefficiency to other areas.

Conclusions and Recommendations

In table 4.4 below, we provide our recommendations for adjustments to Ofwat's shallow-dive efficiency challenge.

We recommend that Ofwat pursue option 1.

Table 4.4 Recommended Adjustments to Company Specific Efficiency Challenge

Adjustment	Revised % Company-Specific Efficiency Challenge	
	SWB	BRL
1: Adopt PR19 base efficiency challenge and adopt a 10% cap as in PR19	0%	10.00%
2: Exclude Leakage from the calculation of shallow-dive challenge and adopt 10% cap as in PR19	10%	5.54%

Section 5 – Water Quality and Resilience

5.1 Water Supply

Our PR24 Business Plan included **£115.22m** of enhancement expenditure to support Water Supply schemes. Ofwat have supported **£88.95m** of this expenditure. We are presenting evidence and supporting statements showing that Ofwat adjust our expenditure allowance for supply schemes by **£51.53m** for a total of **£120.81m**.

Feeder models we are representing on:

- PR24-DD-W-Strategic-resource-options-1
- PR24-DD-W-Supply
- PR24-DD-W-Supply-Interconnectors

Table 5.1 South West Region Water Supply-Demand & Metering Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-W-Supply*	45.74	15.75	-29.99	21.03	36.78	CW3, CW8
PR24-DD-W-Supply-Interconnectors	14.46	9.74	-4.72	4.04	13.78	CW3, CW8, ADD21
PR24-DD-W-Strategic-resource-options-1**	55.02	63.45	8.43	6.80	70.25	CW3, CW5
TOTAL	**115.22**	**88.94**	**-26.28**	**31.87**	**120.81**	

* The part of Green Recovery schemes carried over from AMP7, amounting to £0.636m, is assigned to Supply-side improvement in CW3.
** We have submitted our data tables with the DD allowance of £63.46m. We have not updated our tables for the recent increased allowances of £70.25m.

Table 5.2 Bristol Region Supply-Demand & Metering Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-W-Supply	1.29	0	-1.29	0	0	CW3
PR24-DD-W-Supply-Interconnectors	0	0	0	0	0	N/A
PR24-DD-W-Strategic-resource-options-1	0	0	0	0	0	N/A
TOTAL	**1.29**	**0**	**-1.29**	**0**	**0**	

Water Supply

Table 5.3 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Enhancement to base	Partial Pass
Cost efficiency	Modelled benchmarking of all schemes

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for Supply in the South West region from **£45.74m** (Business Plan submission) to **£36.78m**. This allowance is fully justified based on the evidence presented in this representation.
- Our representations respond to Ofwat's challenges on the **efficiency** of costs, and movements of **enhancement funding to base** for COL15 Restormel WTW.
- We provide evidence that Water Resource Zone WAFU (Water Available For Use) is not an appropriate measure for a comparison of scheme efficiency.
- We provide evidence to justify our full enhancement allowances.
- No enhancement case for supply schemes was submitted for the Bristol region.
- We recommend that a Price Control Deliverable is not applied to our ROA17 Littlehempston scheme, as this is an adaptive pathways scheme which could change in scope and timing as a result of the Water Resources Management Plan (WRMP) process.

Table 5.4 Representation PR24-DD-W-Supply (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD Response
SWB	45.74	15.75	-29.99	21.03	36.78
BRL	1.29	0	-1.29	0	0
TOTAL	**47.03**	**15.75**	**-31.28**	**21.03**	**36.78**

Here we provide representations against Ofwat's decision to challenge the efficiency of our Restormel Water Treatment Works supply scheme, and to move enhancement funding for the scheme to base maintenance. We are not making a representation on any other Supply schemes.

In our representation for COL15 Restormel WTW we:

- Evaluate Ofwat's decision to move Enhancement expenditure to Base, providing evidence to reduce this challenge from 30% to 14%.
- Revise the Restormel WTW scheme WAFU Benefit from 2 Ml/d to 10 Ml/d to align with the industry in the calculation of WAFU to reflect the scheme specific benefit in OFWAT's Unit Cost Model (UCM).
- Provide evidence for updates to the Cost and Benefit for this scheme in OFWAT's UCM.

These changes provide sufficient evidence for a revised allowance for our Restormel scheme of **£37.28m**, which justifies our requested full enhancement allowance of **£32.45m**.

The following appendices are referenced in this representation:

- SBBDD17-18_L5_CEAPP_Zipped

Enhancement to Base

Ofwat have challenged the allocation of enhancement and base expenditure for COL15 Restormel WTW. This decision results in a reduction in expenditure allowances from **£32.45m** to **£22.72m**.

OFWAT has made a 30% reduction in the Business Plan TOTEX based on an assumption that a proportion of the work when upgrading a water treatment works will be base capex (i.e. maintenance/replacement) rather than enhancement funding. This is on top of the c.17% efficiency that we applied to enhancement expenditure before submitting our plan, which took into consideration the funding associated with base activities.

We have reviewed the component costs of our WTW upgrade plans and provide evidence to reduce this enhancement to base reallocation to 13.84%. This would mean that our Business Plan submission of **£32.45m** is reduced to **£27.96m**, compared to Ofwat's assessment at **£22.72m**.

Cost Efficiency

After allocation to base Ofwat introduces an efficiency challenge for our Restormel scheme reducing the expenditure allowance from **£22.72 M** to **£11.42 M**. We provide evidence to show that the unit cost model (UCM) used to calculate the efficiency does not accurately reflect the benefits Restormel Water Treatment Works offers the Colliford Water Resource Zone.

Ofwat's UCM for supply schemes is based on a cost per incremental Ml of WAFU (Water available for use). Using WAFU as a cost driver does not accurately or consistently reflect the scale of an individual scheme. WAFU is impacted by a variety of constraints within a particular WRZ and is not necessarily equal to deployable output (DO) which is a scheme level measure of scale not impacted by other existing WRZ constraints.

Our supporting appendices provide evidence to challenge the use of WAFU benefit in Ofwat's unit cost model (UCM) and describes how this will be impacted by other constraints in the WRZ. We show that WAFU is not a direct indicator of scheme scale, and therefore should not inform judgement on the efficiency of a scheme in isolation. A summary of our evidence is provided below.

Deployable output (DO) is the measure of the volume of output from a water supply scheme over the long term (it's yield). WAFU is a measure of the volume of water companies expect to be able to supply in a single year under the specific demand conditions for that year set out in their plans. For example, dry year annual average WRMPs may consider a 1 in 200 or 1 in 500 drought condition.

WAFU considers DO, water transfers, process losses, outages, and sustainability reductions across a WRZ as a whole. WAFU will vary depending on the modelled conditions – normal year or dry year, annual average or Critical period planning scenarios, and extreme drought including climate change assumptions. These assumptions differ between companies, as outlined in their respective draft Water Resource Management Plans 2024. This means that WAFU cannot be used to make a like for like comparison between each company. For example:

- In some instances, the Benefit Ml/d used may not be the benefit to Dry Year Annual Average (DYAA) WRZ WAFU.
- Companies will be planning for different levels of resilience prior to 2040 (1 in 200 vs 1 in 500 drought resilience). Schemes may be providing different end levels of resilience to their respective WRZs
- The WAFU benefit realised in AMP8 will depend on the above planning assumptions and is not necessarily equal to the ultimate WAFU benefit to the WRZ at the end of the planning period.
- The incremental WRZ WAFU delivered by a scheme will reflect other constraints in the WRZ that are not necessarily linked to the scheme. Our view is that these other factors should not inform judgements on the efficiency or scale of a scheme.

In the OFWAT UCM we have updated the scheme WAFU benefit to 10 Ml/d to reflect a more consistent assessment of the scheme specific benefit. This results in a revised unit cost for Base Activity Schemes of £3.728m per Ml/d, compared to Ofwat's assessment at £5.712 M per Ml/d. Using this revised WAFU and the re-calculated unit cost the allowance for Restormel is £37.28m. This justifies returning to our business plan expenditure allowance of **£32.45m**.

Price Control Deliverable - Water Supply (PCDW11a)

Here we provide representations on the water supply PCD for scheme ROA17 Littlehempston PCD.

Whilst the PCDs and funding delivery plans are aligned with our WRMP24, the design of this PCD means that even if adaptive pathway schemes are paused via the WRMP process, we may still be subject to penalties for late delivery, non-delivery and scheme substitution.

In our case, ROA17 Littlehempston Dual Supply Mains is an WRMP24 adaptive pathway scheme.

WRMPs include adaptive pathways for more or less adverse futures. Core plan investment includes development and progression of all schemes needed to adapt to all future pathways, up to the next decision point (WRMP29). For SWB ROA17 Littlehempston there is a decision point at WRMP29 on whether the full scheme (and remaining AMP8 investment) is required, which is determined by which planning pathway the company is on at that time.

A decision could be made at WRMP29 to pause an adaptive pathway scheme if they are not needed on evaluation of the monitoring plan and associated triggers. We believe PCDs should not be applied to these schemes as the decision to pause them may later be considered the best option for customers. We have outlined in Table 5.5 the element of the PCD associated with ROA17 Littlehempston and the impact on the PCD of removing this if the option is removed.

Table 5.5 Summary of PCD Representation

PCD Components	Unit	2030-31	2031-32	2032-33	2033-34	2034-35
Supply PCD	Ml/d	3	3	3	4	4
ROA17 - Littlehempston	Ml/d	-	-	-	1	1
Supply PCD after WRMP29	Ml/d	3	3	3	3	3

Supply Interconnectors

Table 5.6 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	None
Cost efficiency	Modelled benchmarking of all schemes

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for Supply-Interconnectors from **£14.46m** (Business Plan submission) to **£13.78m**.
- Our representations respond to Ofwat's challenges on the **efficiency** of costs as presented below.
- We provide evidence to explain why Water Resource Zone WAFU (Water Available For Use) is not an appropriate explanatory variable for cost efficiency in supply interconnectors.
- We provide evidence to justify our full enhancement allowances.
- We are not making a representation against the supply interconnectors PCD.

Table 5.7 Representation PR24-DD-W-Supply-Interconnectors (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	14.46	9.74	-4.72	4.04	13.78
BRL	0	0	0	0	0
TOTAL	**14.46**	**9.74**	**-4.72**	**4.04**	**13.78**

The total cost for Supply Interconnectors included in the Business Plan was **£14.46m**. Ofwat have assessed these costs using econometric models and deep dives, resulting in an efficiency challenge of **£4.7m**. Here we provide representations against Ofwat's decision to challenge the efficiency of costs for WIM14 Whitecross scheme.

The following appendices are referenced in this representation:

- SBBDD19_L5_CEAPP_Supply_Interconnectors_Representation

Cost Efficiency

Here we respond to Ofwat's challenges on the efficiency of costs as presented below.

Ofwat have assessed supply interconnectors using a unit cost model, which benchmarks cost per Ml of WAFU. This is consistent with their approach to cost assessment for supply schemes (see above, 'Water Supply' representation). Our view is that Ofwat's use of WAFU benefit in the model fails to capture the intended benefit of WIM14 Whitecross.

In our business plan and WRMP24 we submitted one supply interconnector scheme, WIM14 Whitecross. The project is essential to our Wimbleball WRZ to deliver abstraction reductions in East Devon. There are no suitable schemes which can be substituted. It has a low scheme WAFU (3 Ml/d) because the East Devon area cannot support a larger transfer due to the local population size.

The Ml/d in transfer capacity is the main driver of scheme size. However, the metric that Ofwat has used to assess the scheme size is WAFU. WAFU is not transfer capacity and also reflects other constraints in the WRZ that are not necessarily linked to the scheme and therefore should not inform judgement on the efficiency of a scheme. The WAFU benefit of the interconnector schemes has been determined as part of WRMP24 and each company will have assessed these options against a range of solutions to determine the Best Value program in their WRMP. The WAFU of each scheme is highly contingent on local drivers and factors at a WRZ level and therefore a comparison of scheme efficiency between different WRZs and water companies is not a like for like comparison. This is demonstrated in each water companies WRMP and we have provided further discussion on WAFU as a scheme efficiency measure in our Water Supply above.

The Ofwat efficiency model includes WAFU benefit (Ml/d) as part of its calculation – which is not a driver for WIM14 Whitecross. WAFU does not necessarily correlate with the TOTEX required to deliver the scheme and should therefore not form part of the efficiency calculation. If WAFU is excluded from the OFWAT model and the scheme is evaluated solely on pipeline length (km) then Whitecross TOTEX is very well aligned to our Business Plan submission. Ofwat state in their draft determination (Ofwat, 2024) that they "expect costs to increase with the length of the interconnector, Engineering judgement and business plan data suggests that interconnector length is the main driver of costs. This is supported by a strong correlation between interconnector length and business plan costs."

The model has used a larger number of forecast PR24 schemes than simply the schemes funded as "Supply Interconnector" schemes. This includes schemes that are funded as "Resilience Interconnectors" and "WFD" schemes, which are assessed in a separate feeder model (Ofwat, 2024). This compares schemes with different drivers and risks an unfair comparison between schemes of different types.

Analysis of the Ofwat multiple linear regression (MLR) model provided at SBBDD19_L5_CEAPP_Supply_Interconnectors_Representation, suggests that Pipe Length km as an absolute value has the strongest relationship with TOTEX. It is proposed that WIM14 Whitecross should be evaluated in a supply-interconnector model which does not include WAFU as a predictor in the MLR and instead uses a linear model against Pipe Length km only.

Using the revised model which excludes WAFU and uses only Pipe Length km provides a revised expenditure allowance for WIM14 Whitecross of **£13.78m** compared with our Business Plan submission of **£14.46m** and the Draft Determination efficiency challenge of **£9.74m**.

Strategic Resources Options

Table 5.8 – Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass

Representation

- Ofwat's draft determination for our Strategic Resource Options investment has delivered a higher allowance than requested in our business plan, at **£63.45m** (excluding contingency funding).
- Our response to Ofwat's Draft Determination brings the total enhancement costs for Strategic Resource Options from **£55.02m** (Business Plan submission) to **£70.25m** (excluding contingency funding).
- Ofwat did not challenge our BP submission but instead increased our allowance.
- We provide evidence, including:
  - Changes in timing of gate three and carry over from previous gates.
  - Development of the scope of the projects.
  - Land acquisition costs.
  - SRO modelling.

Table 5.9 Representation PR24-DD-W-Strategic-resource-options-1 (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD response
SWB*	55.02	63.45	8.43	6.80	70.25
BRL	0.00	0.00	0.00	0.00	0.00
TOTAL	**55.02**	**63.45**	**8.43**	**6.80**	**70.25**

* We have submitted our data tables with the DD allowance of £63.45m. We have not updated our tables for the increased allowances of £70.25m as these occurred recently and so will update our data tables with the correct values following DD.
** We have not included contingency funding in this table as it does not impact customer bills. It is shown in the summary Table 5.10 below.

The total cost for Strategic Resource Options (SRO) development in the Business Plan was £55.02m for SWB, which includes enhancement costs for Poole water recycling and transfer, Cheddar 2 source and transfer, and Mendip quarries.

In Ofwat's draft determination process, all three SROs received funding, with several key adjustments. SWB's contribution was increased by £8.43m to align with Wessex Water. In addition to this £29.72m was designated as "contingent funding" which is shared between both companies and earmarked for costs associated with post-planning consent and pre-construction activities, particularly for land acquisition.

Appendices with evidence to support this representation are presented in SBBDD20-23_L5_CEAP_Zipped.

Summary of Representation

We recommend that Ofwat consider the changes in the timing of gate three submissions and carryover from previous gates, the development of project scopes, land acquisition costs, and SRO modelling when assessing the expenditure. The timing adjustments primarily affect the Cheddar and Poole SROs, with both now requiring funding for work extending into AMP8. Further adjustments are required for land acquisition costs which have increased as more land is needed for adhering to the latest Environment Agency standards. For these developments we request that Ofwat provide a revised development allowance for SWB of £70.25m and revised contingent funding of £19.68m.

Cost efficiency

All three SROs have successfully passed through gates one and two and are advancing towards gate three. Due to delays related to the Cheddar SRO, RAPID has agreed to shift the gate three submission to AMP8 for both Cheddar and Poole SROs, aligning their timelines for efficiency. Mendip Quarries SRO remains on schedule, but a significant underspend from gate two is requested to be carried over to gate three in AMP8. The total additional funding required for these timing adjustments is £9.56 million.

The scope of the Cheddar and Poole SROs has evolved since gate two, necessitating additional funding. The Cheddar project now includes an expanded pipeline network, new service reservoirs and additional infrastructure to support drought resilience in SWB's area, requiring £2.40 million in additional funding. The Poole project now involves a second discharge point on the River Stour, which will enhance environmental benefits. It would also require additional pumping station at the proposed water recycling plant, pipeline from the water recycling plant to the new discharge point and outfall with headwall. It would be requiring an additional £0.28 million. The total requested for these scope revisions is £2.68 million.

The revised scope of the Cheddar SRO has also led to increased land acquisition costs. The new infrastructure components, such as additional service reservoirs in SWB's and Wessex Water's supply areas, require the purchase of additional land. Moreover, updated floodplain storage requirements, influenced by new Environment Agency guidelines and climate change considerations, have increased the volume of land needed for compensatory flood storage. As a result, an additional £5.00 million in contingent funding is required to cover these increased land acquisition costs.

While SRO modelling costs were approved for Wessex Water in the draft determination, SWB did not receive the same consideration. To rectify this, additional funding is requested for SWB for £1.5 million, with costs to be distributed proportionally between the companies based on their respective populations. We have not been able to make updates to tables at this time but will work with Ofwat through the query process to update our tables to reflect the SRO modelling element of SRO expenditure.

The proposed changes in funding for the Strategic Resource Options (SROs) reflect adjustments in the timing and scope of the projects, specifically for the Poole, Cheddar, and Mendip Quarries schemes. These adjustments, which include reallocation of costs and contingent funding, aim to ensure the projects are delivered efficiently and in alignment with environmental and customer protection goals. The revised funding totals **£161.61 million**, with specific allocations for each SRO and a focus on securing land, enabling works, and necessary infrastructure enhancements. The proposals also suggest improvements in the delivery incentives, such as adopting a portfolio approach, ensuring timely delivery, and safeguarding against financial risks, all to benefit customers by enhancing drought resilience and environmental protection.

Table 5.10 below shows a summary of the overall position for SRO expenditure allowances and DD responses for both companies.

Table 5.10 – Summary of overall position by company (£m, 2022/23 prices)

Company	DD development	DD contingency	Rep. development	Rep. contingency	DD response development	DD response contingency	Total £m
WSX	51.20	12.95	5.44	2.10	56.64	15.04	71.68
SWB	63.45	16.77	6.80	2.90	70.25	19.68	89.92
Sub Total	**114.65**	**29.72**	**12.24**	**5.00**	**126.88**	**34.72**	**161.6**

5.2 Water Demand

Our PR24 Business Plan included **£198.882m** of enhancement expenditure to support Water Demand schemes. Ofwat have supported **£124.782m** of this expenditure. We are presenting evidence and supporting statements showing that Ofwat should increase this by **£78.997m** for a total of **£197.259m** against our Supply Demand Balance schemes.

Feeder models we are representing on:

- PR24-DD-W-Leakage
- PR24-DD-W-Metering

Feeder models we are not representing on:

- PR24-DD-W-Demand-side-Improvements:

Table 5.11 – SWB Water Demand Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-W-Metering	70.64	58.80	-11.84	8.32	67.12	CW3, CW5
PR24-DD-W-Leakage	60.65	14.33	-46.32	39.47	53.80	CW3, CW5
PR24-DD-W-Demand-side-Improvements	4.00	13.56	+9.56	0.00	13.56	CW3, CW5
TOTAL	**135.29**	**86.69**	**-48.60**	**47.79**	**134.48**	

Table 5.12 – Bristol Region Water Demand Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-W-Metering	28.54	21.83	-6.71	6.71	28.54	CW3, CW5
PR24-DD-W-Leakage	30.81	15.74	-15.07	18.05	33.79	CW3, CW5
PR24-DD-W-Demand-side-Improvements	1.32	0.52	-0.80	0	0.52	CW3, CW5
TOTAL	**60.67**	**38.09**	**-22.58**	**24.76**	**62.85**	

Our expenditure in managing water demand covers three areas:

- installing smart meters to reduce leakage and Per Capita Consumption (PCC) ('Metering' section)
- reducing leakage ('Leakage' section)
- reducing PCC through Household and Non-Household water efficiency measures ('Demand Side Improvements' section).

Our representations provide evidence to support the re-instatement of our full business plan allowance for water demand. We provide evidence to show that Ofwat's cost assessment does not account for the long-term benefits of leakage reduction activities and does not capture fully the cost of smart meter infrastructure.

Leakage reduction is of critical importance to the delivery of our Water Resource Management Plan. Ofwat's cost assessment, particularly the £1.1M per Ml/d allowance, incentivizes short-term fixes over sustainable and long-term solutions. This creates the risk we will need to catch-up in future periods, resulting in a less efficient programme overall. This puts at risk the delivery of resilient supply-demand balance now and in the future.

Our leakage expenditure includes mains renewal, communication and supply pipe replacement, active leakage control, find and fix activities, and enhanced monitoring to identify leaks quickly. All of these activities are need to deal with leakage holistically. Ofwat's cost assessment does not appropriately consider the diverse cost and benefits associated with each activity.

We plan to install new Smart Meter Infrastructure (SMI) and smart meters in approximately 600,000 homes in our South West and Bristol regions. This will allow us to reduce customer PCC sustainably over AMP8 and into future AMPs. Ofwat has challenged the cost efficiency of our metering programme, resulting in a significant downward adjustment to expenditure allowances. We present evidence to show that:

- The cost of Smart Meter Infrastructure (SMI) in our region is higher, due to our network's relative immaturity;
- Ofwat has incorrectly allocated costs and benefits across metering and leakage feeder models; and
- Ofwat's PCD for smart metering requires adjustment, as it is not a fair reflection of the efficient delivery and operability of a smart metering programme.

Lastly, our water efficiency expenditure helps to educate customers and businesses on water usage by providing water saving devices and undertaking water audits at schools. This is key to reducing PCC and supporting our smart metering programme. Ofwat has applied an econometric model in this area, resulting in an upward adjustment. We have made the decision to accept Ofwat's Draft Determination for water efficiency expenditure allowances.

Metering

Table 5.13 – Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Partial Pass

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for Metering from **£99.18m** (Business Plan submission) to **£95.66m**.
- Our representations respond to Ofwat's challenges on the **efficiency** of costs as presented below.
- We provide evidence to show that our costs for metering are efficient, justifying the re-instatement of our full enhancement allowances.
- We propose several amendments to the PCD for metering.

Table 5.14 Representation PR24-DD-W-Metering (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD Response
SWB	70.64	58.80	-11.84	8.32	67.12
BRL	28.54	21.83	-6.71	6.71	28.54
TOTAL	**99.18**	**80.63**	**-18.55**	**15.03**	**95.66**

The total cost for Metering in the Business Plan was **£99.12m**, this includes Smart Metering Infrastructure (SMI).

Ofwat assessed costs for metering using econometric models. New installations and upgrades were assessed separately. Here we provide evidence to show that Ofwat's econometric model does not capture the differing starting points that companies face when delivering smart metering programmes, and that Ofwat has incorrectly allocated smart metering costs across leakage and metering.

The value of our representation for the Metering Feeder Model is £21.48m.

- SMI enhancement funding - **£14.14m SWB, £7.34m BRL**.
- Unaccounted for smart metering benefit is in the Leakage section above.

The following appendices are referenced in this representation:

- SBBDD79_L5_CEAPP_Metering_Appendix

Cost efficiency

The cost of our smart metering programme is relatively higher than the cost in other regions. This is because there is very limited SMI in the South West of England, and so we face a very different starting point for our programme. Further evidence of the cost of our smart metering programme is presented at SBBDD79_L5_CEAPP_Metering_Appendix.

At PR24, Ofwat has found setting efficient benchmarks for metering expenditure difficult. This is because SMI networks vary significantly across the industry. Both the South West and Bristol areas have a limited existing SMI network. The type of expenditure required to build a large amount of new SMI includes additional expenditure on new infrastructure and technology.

This is in stark contrast to SMI-mature businesses (such as Anglian Water) whose expenditure encompasses primarily additional physical infrastructure (e.g. meters and boundary boxes). For this reason, we request that Ofwat treats our SMI expenditure as Enhancement Investment and that it is assessed outside of the metering econometric models.

We have been developing our SMI through accelerated programmes such as North Devon Green Recovery but are still in the opening phases and so have less experience than others in creating and operating SMI to reduce Per Capita Consumption (PCC). We agree with Ofwat that it is difficult to assess SMI consistently, and so request enhancement funding is adjusted outside of the econometric models by +£21.5m (£14.14m SWB £7.34m BRL) to construct new SMI networks.

Finally, Ofwat have assumed that 3.17 Ml/d of leakage reduction will be delivered via our smart metering programme. However, they have not provided funding for this activity. We are of the view that this funding should be assessed in the leakage model at £3.52m. To support this, we have corrected an error in our cost allocation for smart meters across metering and leakage enhancement cases. Table 5.15 below shows our revised costs captured in table CW3 (and related cost tables), consistent with our DD table submission. All volume information remains unchanged from our original business plan.

Table 5.15 Leakage to be accounted for in Enhancement Allowance

Unaccounted for Leakage benefit from smart metering	Ofwat 'other leakage' unit cost model variable	Calculation of cost to be accounted for in Leakage Enhancement allowance
3.17 (Ml/d)	£1.1m per Ml/d benefit	£3.519m

Table 5.16 Correcting allocation between metering and leakage (£m, pre FS and RPE, 2022/23 prices)

SWB ONLY	New/upgrades Metering totex	Smart Meter Infrastructure totex	Metering representation value
BP metering cost	56.49	14.14	-
Metering cost allocated to leakage	3.52	-	-
Requested FD allowance	52.98	14.14	67.12

Price Control Deliverable – Metering (PCDW12)

We have worked with WaterUK to understand the penalties and conditions associated with this PCD. A full representation on the metering PCD is presented at appendix SBBDD79_L5_CEAPP_Metering_Appendix. Our representations are consistent with the views of the wider water industry.

We propose several amendments to the PCD for metering, including the removal of operability metrics for smart meters and simplification of metrics to measure delivery of meter upgrades. These changes will ensure that the PCD more accurately reflects the performance of current meter technology and incentivises efficient delivery.

Leakage

Table 5.16 – Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge SWB	Challenge BRL
Need for enhancement investment	N/A	Partial Pass
Best option for customers	Partial Pass	Partial Pass
Cost efficiency	Partial Pass	Partial Pass

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for Leakage in the Bristol and South West regions from **£91.46m** (Business Plan submission) to **£87.59 M** (aligning to our latest WRMP and Ofwat PR24 query outcome).
- Our representations respond to Ofwat's challenges on **need** for investment, **cost efficiency** and movements of **enhancement funding to base**.
- We provide evidence to justify an uplift in our enhancement allowances of **£57.51m**.
- We propose adjustments to both base and enhancement outputs outlined in the mains renewals PCD, and these are detailed in our representations at section 2.3.

Table 5.17 Representation PR24-DD-W-Leakage (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD Response
SWB	60.65	14.33	-46.32	39.47	53.80
BRL	30.81	15.74	-15.07	18.05	33.79
TOTAL	**91.46**	**30.07**	**-61.39**	**57.52**	**87.59**

The total cost for leakage included in our Business Plan was **£91.46m.** In the Draft Determination Ofwat have substantially adjusted expenditure allowances for leakage by more than -50% across SWB and BRL, to **£30.07m**.

Ofwat assessed costs for leakage using a unit cost model. Here we provide evidence to show that Ofwat's cost assessment does not fully capture the long-term benefits of leakage reduction activities. Leakage reduction is of critical importance to the delivery of our Water Resource Management Plan. Ofwat's cost assessment, particularly the £1.1M per Ml/d allowance, incentivizes short-term fixes over sustainable and long-term solutions. This creates the risk we will need to catch-up in future periods, resulting in a less efficient programme overall. This puts at risk the delivery of resilient supply-demand balance now and in the future.

In this representation, we provide evidence to justify an uplift in our enhancement allowances to **£87.59m**.

The following appendices are referenced in this representation:

- SBBDD28_L5_CEAPP_Leakage

Funding enhancement to all infrastructure assets to benefit asset health

Ofwat have challenged leakage investment on the basis of enhancement and base overlap. They say that an adjustment has been made because they observe double counting of base-funded mains renewal and leakage mains renewal.

For BRL, Ofwat have provided an upward adjustment to our allowances, recognising that we have delivered an efficient level of mains renewals in this region historically. On this basis, Ofwat have subsequently disallowed enhancement funding for communication and supply pipes in the Bristol region. We are of the view that this programme of communication and supply pipe renewals are an enhancement activity, delivering a step-change in leakage performance for Bristol.

BRL's asset renewal programme is a single programme of work: renewing mains, communication and supply pipes at one time to efficiently resolve leakage issues across all assets in the worst-performing areas. Therefore, consistent with its asset health condition rating, Ofwat must fund BRL's communication and supply pipe investment as it has done for mains renewal, to bring its assets into a sustainable condition.

These factors are not captured in Ofwat's econometric model. We request that Ofwat consider enhancement funding for this renewal of £8.1m based on a consistent application of their asset health assessment.

Further evidence is provided at SBBDD28_L5_CEAPP_Leakage.

Cost Efficiency

Ofwat has challenged the cost efficiency of BRL and SWB's leakage programme, adjusting our total allowance by -70%. In SBBDD28_L5_CEAPP_Leakage, we provide evidence that our costs for leakage are efficient. Here we provide a summary of our evidence.

We are of the view that Ofwat should revisit their benchmarking to consider a more granular spread of leakage reduction activities and set funding allowances accordingly for each company.

Ofwat have benchmarked costs for leakage, deriving a £1.11m per Ml/d demand reduction as a unit cost for metering activities. Our view is that Ofwat's approach cherry-picks the most favourable instances of leakage reduction, ignoring data where leakage has risen, or weather has been abnormal. Ofwat's assessment does not capture the mix of solutions that are required to deliver leakage reductions. For example, mains renewal activities and communication and supply pipe replacements, which are more expensive than find and fix activities.

As explained above under 'Metering', Ofwat have assumed that 3.17 Ml/d of leakage reduction will be delivered via our smart metering programme. Ofwat's model also excludes the proportion of smart metering cost, and the related benefits applicable to leakage reduction is incorrect. We have therefore re-allocated £3.519m from metering to leakage based on Ofwat's £1.11m Ml/d allowance.

We are concerned that as a result of the shortcomings in Ofwat's modelling approach, there will be stronger incentives for shorter-term maintenance solutions to leakage reduction, that are not best value for customers over the long-term. There are many ways to reduce leakage, but the ability to hold leakage down at successively lower levels and keep the natural rate of rise and background leakage under control requires higher levels of asset renewal. Ofwat's £1.1m per Ml/d allowance will incentivise companies to prioritise cheaper short-term fixes, storing up future cost pressures.

We have worked with consultants RPS to produce a comparative scenario for SWB that excluded the communication pipe expenditure in AMP8. The overall 25-year discounted totex was 4.8% more expensive. Our full assessment is provided at SBBDD28_L5_CEAPP_Leakage.

Our WRMP already provides the optimal long-term mix of solutions for leakage reduction. Ofwat's determination does not provide funding in-line with the WRMP. In our WRMP we have assessed the full costs and benefits of leakage activities over a 25-year period. Best options are selected at a Water Resource Zone level. This means that the company-level plan does not include the absolute least-cost solutions, it reflects the solutions to solve the specific key issues in each zone. Furthermore, our leakage strategy varies for each water resource zone to meet the local requirements of "no deterioration" in water bodies, and therefore the leakage strategy cannot be developed to meet company-level targets.

For the FD, Ofwat should assess the full range of WRMP options separately. We recommend that separate benchmarks are developed for different forms of leakage reduction.

We provide an updated leakage query response in the technical appendix to aid Ofwat's determinations.

Demand Side Improvements

Table 5.18 – Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass SWB Partial Pass BRL

Representation

- We have accepted Ofwat's determination of Demand Side Improvements.
- Our response to Ofwat's Draft Determination brings the total enhancement costs for Water Efficiency schemes from **£5.32m** (Business Plan) to the value awarded in Ofwat's Draft Determination of **£14.08m.**
- We have made the decision to accept Ofwat's draft determination for Water Efficiency.
- We are not representing against the PCD for water efficiency (demand side improvements).

Table 5.19 Representation PR24-DD-W-Demand-side-Improvements (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD Response
SWB	4.00	13.56	9.56	0.00	13.56
BRL	1.32	0.52	-0.80	0.00	0.52
TOTAL	**5.32**	**14.08**	**8.78**	**0.00**	**14.08**

Overview

The total cost for Water Efficiency in the Business Plan submission was **£5.32m** (£4.00m SWB, £1.32 BRL), Ofwat have allowed through the **DD £14.08m** (£13.556m SWB, £0.522m BRL). We have made the decision to accept Ofwat's draft determination for Water Efficiency.

5.3 Drinking Water Quality

Representation

- Ofwat's Draft Determination has adjusted our allowances for Drinking Water Quality from **£215.78m** (Business Plan) to **£92.23m**.
- Our response to Ofwat's Draft Determination brings the total enhancement costs for responding to Raw Water Quality Deterioration and Improvements to Taste, Odour and Colour for drinking water quality to **£209.21m**.
- Our representations respond to Ofwat's challenges on the **need**, **best option** and **efficiency** of costs as presented below. The challenges relate to a range of issues around assurance and lack of detailed evidence.
- We provide evidence, including: DWI submissions, assurance reports, cost scoping reports and asset health surveys.
- We are claiming an increase in the Draft Determination as follows:
    - Strategic WTWs – South West Region **£6.64m** Bristol **£42.76m**
    - WTW Upgrades – South West Region **£28.13m** Bristol **£6.83m**
- We propose adjustments to Ofwat's non delivery payment rate for the raw water deterioration and taste, odour and colour PCD.

Ofwat have assessed costs for water treatment work upgrades across two feeder models. In this representation we respond to Ofwat's Draft Determination for water treatment works (WTW) upgrades and strategic WTW across both feeder models. We respond to Ofwat's determination of quality driven mains renewals separately.

Table 5.20 below provides summary of our representations directly against Ofwat's feeder models, for ease of reference.

For Bristol Water, Ofwat has challenged the Outcome Delivery Incentive (ODI) Performance Commitment Level (PCL) for water quality contacts. We have presented options for alternative PCLs for water quality contacts in the Bristol region. See our Outcomes representation document for further information. SWB's PCL for water quality contacts remains unchanged from our Business Plan.

Feeder models we are representing on:

- PR24-DD-W-Raw-water-quality-deterioration
- PR24-DD-W-Improvements-to-taste-odour-and-colour

Feeder models we are not representing on:

- PR24-DD-W-Lead: When considered as a whole programme across our Bristol and South West Region, our costs are shown to be efficient in Ofwat's modelling. We therefore do not make a representation.

Table 5.20 – SWB & BRL Drinking Water Quality Representation (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD Response	Table
PR24-DD-W-Raw-water-quality-deterioration*	133.59	61.77	-71.82	71.28	133.05	CW3.99
PR24-DD-W-Improvements-to-taste-odour-and-colour	82.20	30.46	-51.74	45.69	76.15	CW3.93
TOTAL	**215.79**	**92.23**	**-123.56**	**116.97**	**209.20**	

* The part of Strategic WTW allocated to Resilience in the draft BP, amounting to £6.548m for SWB and £30.693m for BRL, has now reallocated to Raw Water Quality, is considered in the total BP. The part of Green Recovery schemes carried over from AMP7, amounting to £5.159m, is assigned to Raw Water Quality in CW3.

Water Treatment Works Upgrades and Strategic Water Treatment Works (Raw Water Deterioration and Taste, Odour, Colour)

Our investment in water treatment work have been assessed by Ofwat in two feeder models:

- PR24-DD-W-Raw-water-quality-deterioration
- PR24-DD-W-Improvements-to-taste-odour-and-colour

Ofwat have considerably reduced our allowances for these WTW schemes across both feeder models from £172.8m to £82.12m.

We provide additional evidence to reinstate all of these costs - except for the UV treatment costs at Cheddar WTW where we are accepting of Ofwat's efficiency challenge. We summarise Ofwat's assessment for each scheme below:

Table 5.21 Summary of Ofwat's Assessment of Our Business Plan

	Scheme WTW	Details	Need	Best Option	Cost Efficiency
BRL	Cheddar	Upgraded UV treatment, pH correction and slow sand filter covering	Partial Pass	Some Concerns	Some Concerns
BRL	Secondary Chlorination	Additional chlorination points and monitoring	Partial Pass	Some Concerns	Some Concerns
BRL	Littleton	New/rebuilt WTWs	Partial Pass	Some Concerns	Some Concerns
BRL	Stowey	New/rebuilt WTWs	Pass	Some Concerns	Some Concerns
SWB	Greatwell	New contact tank to improve disinfection	Partial Pass	Some Concerns	Some Concerns
SWB	Lowermoor	New GAC treatment	Partial Pass	Some Concerns	Some Concerns
SWB	Woodgreen	Upgraded membranes and new manganese filters	Partial Pass	Some Concerns	Some Concerns
SWB	Dotton	New dedicated manganese filters	Partial Pass	Some Concerns	Some Concerns

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for Raw Water Deterioration schemes from **£133.59m** (Business Plan) to **£133.05m.**
- Our response to Ofwat's Draft Determination bring the total enhancement costs for Taste, Colour and Odour schemes from **£39.28m** (Business Plan) to **£33.46m.**
- Our representation provides additional evidence to address Ofwat's concerns, namely:
  - DWI notices and DWI endorsements for improvements;
  - Water quality and climate change data to demonstrate investment need;
  - Additional evidence of asset condition and improvements to service levels via new technologies, to clarify base-enhancement overlap;
  - Further evidence of our optioneering process, supported by scheme specific cost benefit analysis outputs, to demonstrate that we have selected the best option for customers; and
  - Third party reports to demonstrate our costs are efficient.
- We are not representing against the PCD for our WTW upgrades programme.

Table 5.22 –Representation PR24-DD-W-Raw-water-quality-deterioration (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	49.39	24.13	-25.26	24.73	48.85
BRL	84.20	37.65	-46.56	46.55	84.20
TOTAL	**133.59**	**61.77**	**-71.82**	**71.28**	**133.05**

Table 5.23 – WTW Upgrades Representation PR24-DD-W-Improvements-to-taste-odour-and-colour (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	27.88	14.51	-13.36	10.04	24.55
BRL	11.40	5.87	-5.53	3.04	8.91
TOTAL	**39.28**	**20.38**	**-18.89**	**13.08**	**33.46**

Ofwat have assessed these costs using a combination of econometric models, shallow dives and deep dives:

- Econometric models were used for the UV element of the Dotton and Cheddar schemes;
- Shallow dives were used for PFAS Research, PAC Enabling Works and Allers and Pynes Chemical Dosing Upgrades;
- All other schemes were assessed using deep dives.

The following appendices are referenced in this representation:

- SBBDD29_L5_CEAPP_Strategic_WTW_Representation
- SBBDD31_L5_CEAPP_KPMG_Review_of_DWMP_cost_methodology
- SBBDD38_L5_CEAPP_PR24_SI_Cost_Model_Benchmarking_Report
- SBBDD75_PLUS_L5_CEAPP_WTW_UPGRADES_REPRESENTATION

Base and enhancement overlap

Ofwat have introduced a challenge on need for investment for certain schemes under both feeder models focused on perceived overlaps between enhancement and base funding. This has resulted in a -20% downward adjustment to expenditure allowances for the relevant schemes.

The majority of our WTW upgrades received downward adjustments associated with Ofwat's assessment of base and enhancement overlap.

We submitted these schemes as 100% enhancement allowances. In appendix SBBDD29_L5_CEAPP_Strategic_WTW_Representation and SBBDD75_PLUS_L5_CEAPP_WTW_UPGRADES_REPRESENTATION we provide a full assessment of the need for enhancement investment for the relevant schemes. Here we provide a summary of our evidence.

These schemes deliver new and additional processes to mitigate the risk of further raw water deterioration, and improvements to taste, odour and colour. For example, at Dotton we are adding new Manganese filters and UV treatment to mitigate raw water deterioration leading to high Manganese levels.

Notwithstanding that new processes are being added for customers benefit, we provide new evidence of condition and asset health surveys to demonstrate that each site has been appropriately maintained in the past. We can therefore be confident that no existing assets, for which we would have expected future base maintenance costs in AMP8, are being replaced. Thus, supporting our WTW upgrades programme to be assessed as 100% enhancement. For these sites we ask that Ofwat re-instate the full challenge associated with base-enhancement overlap.

Woodgreen WTW is the only site requiring maintenance activity which we will complete alongside our upgrade programme. For this reason, we have not represented on this area of challenge at this site.

In our Strategic WTW submission we have included a 50% Base and 50% Enhancement split, which Ofwat support. This is because our Strategic WTW rebuild programme replaces existing assets through either a new WTW's or a substantial overhaul. Hence the base maintenance that would have been spent maintaining those assets should be considered.

One exception is Littleton WTW. We are proposing a multi-AMP rebuild at this site and we have split the total cost 50/50 between base and enhancement. However, our business case proposed that the full enhancement funding is approved for AMP8 and that the remaining costs in AMP9 would be covered by Base. Ofwat made the decision to disallow this enhancement funding through a deep dive assessment.

We ask Ofwat to consider this unique case for the following reasons:

- The requested expenditure allowance for Littleton was already subject to a stretching 17% efficiency challenge, to address the potential for base and enhancement overlap;
- Littleton is a significantly sized WTW and the rebuild costs are substantial for our Bristol region at c£100m. This is in addition to Stowey WTW at £50m;
- Phasing Littleton in this way is the only way to allow for all the necessary WTW improvements to be delivered in Bristol;
- Our proposed approach has the benefit of removing the need of submitting a Littleton Enhancement case in PR29 with the uncertainty if it will be approved, despite being mid-project. With such a need for a PR29 case this could instigate a delay in the project which invariably will introduce inefficiency in delivery, which is not in the best interest of the customer; and
- With the enhancement funding up front in AMP8 the option of accelerating scheme completion remains possible without further regulatory mechanisms.

Further evidence can be found in our supporting appendices, referenced above.

Best Option for Customers

Ofwat have made the decision to challenge a number of Strategic WTW rebuilds and WTW Upgrades on the basis of optioneering. Ofwat have asked for further evidence of cost benefit, environmental, and carbon assessments, and how these featured in decision making.

Appendices SBBDD29_L5_CEAPP_Strategic_WTW_Representation SBBDD75_PLUS_L5_CEAPP_WTW_UPGRADES_REPRESENTATION provides further evidence of our approach to optioneering for these schemes, including our third party benchmarking and our audit and assurance of these schemes. We are confident that this evidence is sufficient for Ofwat to review their adjustments for these schemes.

Cost Efficiency

Many of the cases within Strategic WTW rebuilds and WTW upgrades had challenges around cost benchmarking and assurance of cost efficiency.

Cost benchmarking was provided by ChandlersKBS. Their approach includes comparison to PR19 models, comparison to TR61 and relevant industry models. SBBDD38_L5_CEAPP_PR24_SI_Cost_Model_Benchmarking_ Report. Each of our WTW schemes underwent a detailed engineering scheme development and costing process. This consisted of feasible engineering designs and associated Bill of Quantities as an input to ChandlersKBS costing models. These costs are provided across the full scheme buildup, including Civils, Mechanical, Electrical, ICA and Land/Compensation, with an appropriate level of Optimism Bias applied.

An audit and assurance of costs was conducted by KPMG and can be found at appendix: SBBDD31_L5_CEAPP_ KPMG_Review_of_DWMP_cost_methodology.

Other Raw Water Deterioration – Poly- and perfluoroalkyl substances (PFAS) Research

PFAS research projects were proposed in across BRL and SWB of **£3.44m**. This investment allows for the increased sampling and R&D trials of PFAS removal processes. These costs were subject to a shallow dive with no details as to what justified the cut. A 20% reduction was applied reducing the total expenditure allowance to **£2.74m**.

Given the critical and emerging nature of PFAS we represent fully on these cost reductions. This investment is critical to further our understanding of PFAS and provide a foundation of knowledge prior to investment into PFAS upgrades to sites. We challenge separately the 20% company specific shallow dive efficiency at section 4.1.

Quality Driven Mains Renewal (Taste, Odour and Colour)

In our business plan we submitted an ambitious programme of quality-driven mains renewals. This investment will ensure that future generations do not unfairly carry the costs associated with quality-driven renewals, spreading investment over multiple asset management periods. This investment is essential, aligns with our long-term delivery strategy, and delivers a step-change in service levels to customers.

Representation

- Ofwat have made the decision to introduce a significant downward adjustment to our quality-driven renewals programme, totalling **£-32.85m**. Ofwat have made this adjustment on the basis that SWB should deliver its proposed quality driven renewals activity from base funding.
- Our response to Ofwat's Draft Determination bring the total enhancement costs for Taste, Colour and Odour Schemes relating to Quality Driven Mains Renewals from **£42.92m** (Business Plan) to **£42.69m.**
- We provide additional evidence to show that demonstrate the need for investment in quality driven mains renewals, and to show that our costs are efficient.
- We are not representing against the PCD for our quality driven mains renewals but re-submit our PCD set out within our original business submission.

As detailed within appendix SBBDD80_Base__Potable_Mains_Renewals, we are accepting of the need to increase our mains renewals from base maintenance. However, we provide evidence to show that the efficient level of base renewals in the SWB region is 0.18% per annum. **This evidence includes:**

- Third party analysis of Ofwat's mains renewal cost modelling.
- Historic industry trends of mains renewal.
- An overview of our whole-life asset performance models.

On the basis of this evidence, we are representing to recommend that expenditure allowances for quality driven renewals are reinstated in full and that this programme is funded in addition to our base renewals of 0.18% (168km).

In the Bristol Water region Ofwat have made a minor adjustment to quality-driven renewals allowances. We have made the decision to accept this adjustment.

The following appendices are referenced in this representation:

- SBBDD81_L5_CEAPP_Quality_Driven_Mains_Renewals

Table 5.24 – Quality Driven Mains renewals representation PR24-DD-W-Improvements-to-taste-odour-and-colour (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	32.62	0.00	-32.62	32.62	32.62
BRL	10.3	10.07	-0.23	0.00	10.07
TOTAL	**42.92**	**10.07**	**-32.85**	**32.62**	**42.69**

For SWB, our Business Plan included £32.6M of expenditure for water quality mains renewals. Unlike our Bristol region, Ofwat have rejected this proposal in full within the draft determination.

Ofwat have indicated that the SWB mains renewal rate in Base should be significantly increased above the submitted level before enhancement renewals are considered. In SBBDD80_Base__Potable_Mains_Renewals we have provided evidence to show that the efficient level of base renewals in the SWB region is 0.18% per annum.

Therefore, we ask Ofwat to reconsider the rejection of our enhancement cast iron mains programme. We ask that this programme Is re-evaluated and is considered in addition to our base renewals of 0.18% (168km). Given this investment is in addition to base maintenance, and that the need was otherwise supported by Ofwat, we ask that this considered as enhancement funded at £32.62m to replace 88.5km (0.1% of the total network).

Need

Ofwat supported the need for these schemes for our Bristol region and we ask that the same judgement is applied to our SWB region. We believe this position should be adopted if this investment is considered in addition to any base maintenance renewal rates set by Ofwat at FD.

Ofwat acknowledges that "*The company provides evidence that the proposed investment aligns with their lon- term delivery strategy (LTDS) to reduce water quality contacts. South West Water provide evidence that the number of complaints for brown, black and orange water has been decreasing significantly and is now beginning to plateau. This supports its statement that current strategies are being exhausted and additional options are required to drive this lower.*"

For this reason, we do not reinstate additional evidence to support the need, but we refer Ofwat to our original business case.

Cost efficiency

Although our costs compare reasonably well to the benchmarked unit rate, we disagree with the use of such a benchmarked for watermain renewals under the water quality driver.

As explained above, we target mains with many downstream customers to provide maximum benefit. These mains tend to be larger and as such tend to cost more per meter than the uniform rate used by Ofwat. Retaining this unit rate cost efficiency would incentivise the replacement of cheaper smaller diameter serving a lower number of customers and therefore providing lower overall benefit.

Price Control Deliverable - Mains Renewals (PCDB1)

Given that Ofwat rejected our allowance for quality driven renewals in full, they did not propose a PCD delivery profile for this area. We are therefore re-submitting our PCD outputs, as submitted in our business plan.

The delivery profiles for all companies appears to have been initially set as a linear profile, this will be a challenge to deliver, especially in year one as with both areas of the company this represents a significant increase in mains renewals. Considering the design time, and factors outside our control (e.g. Street Works permits) there is a significant risk of penalty in year one that we cannot mitigate. We therefore propose to deliver the mains renewal PCD outputs shown in Table 5.25 below, that are in line with our business plan submission.

Table 5.25 SWB Proposed Mains Renewals PCD Outputs

Proposed PCD outputs (cumulative)	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
Enhancement water quality renewals	km	10.62	28.32	48.37	68.43	88.49

5.4 Resilience and Security

The total enhancement cost for Resilience and Security in the Business Plan was **£89.35m**.

Feeder models we are representing on:

- PR24-DD-SEMD-water-waste-1
- PR24-DD-W-Resilience-Interconnectors
- PR24CA39 – Cyber- water and waste.xlsx

Feeder models we are not representing on:

- We forego the specific additional resilience allowance for water: PR24-DD-W-–-Resilience
- We forego the specific additional resilience allowance for water: PR24-DD-WW - Resilience

Table 5.26 – SWB Resilience, Security & Net Zero Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-SEMD-water-waste-1	3.47	1.87	-1.60	1.60	3.47	CW3
PR24-DD-W-Resilience-Interconnectors*	70.31	49.68	-20.62	21.29	70.98	CW3
PR24CA39 – Cyber – water and waste	10.21	8.17	-2.04	2.04	10.21	CW3
PR24-DD-W-–-Resilience	0.00	5.90	5.90	-5.90	0.00	REMOVE
TOTAL	**83.99**	**65.63**	**-18.36**	**19.03**	**84.66**	

* The part of Green Recovery schemes carried over from AMP7, amounting to £5.287m, is assigned to Resilience in CW3.

Table 5.27 – Bristol Region Resilience, Security & Net Zero Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-SEMD-water-waste-1	1.73	0.00	-1.73	1.73	1.73	CW3
PR24-DD-W-Resilience-Interconnectors	n/a	n/a	n/a	n/a	n/a	n/a
PR24CA39 – Cyber – water and waste	3.63	2.90	-0.73	0.73	3.63	CW3
PR24-DD-W-–-Resilience	0.00	2.80	2.80	-2.80	0.00	REMOVE
TOTAL	**5.36**	**5.70**	**0.34**	**-0.34**	**5.36**	

Security and Emergency Measures Directive (SEMD)

Table 5.28 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	SWB	BRL
Need for enhancement investment	Pass	Fail
Best option for customers	Some Concerns	-
Cost efficiency	Significant Concerns	-

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for SEMD from **£1.87m** (Draft Determination) back to **£5.2m** (business plan).
- Our representations responds to Ofwat's challenges on the **best option** and **efficiency** of costs as presented below.
- We provide evidence, including:
    - Defra Ministerial requests supporting the need for this investment
    - DWI notices supporting the need for this investment
    - Confirmation that the DWI section 19 notice is for both SWB and BRL
    - Exercise Marrakesh findings report
- We are claiming an increase in the Draft Determination of **£3.33m**.
- We reject the SEMD PCD as we have not been funded to deliver the PCD output in the draft determinations.

Table 5.29 Representation PR24-DD-SEMD-water-waste (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD Response
SWB	3.47	1.87	-1.60	1.60	3.47
BRL	1.73	0.00	-1.73	1.73	1.73
TOTAL	**5.2**	**1.87**	**-3.33**	**3.33**	**5.2**

The following appendices are referenced in this representation and can be SBBDDD33-36_L5_CEAPP_Zipped:

- SBBDD33_L5_CEAPP_Letter_to_SWB_BRL
- SBBDD34_L5_CEAPP_SWB01_Decision_Letter
- SBBDD35_L5_OFW-IBQ-SBB-014_Response
- SBBDD36_L5_Learnings_Report_Exercise_Marrakesh
- SBBDD131__PR24_Enhancement_Case_SEMD

Need for Investment

Our SEMD investment delivers two principle schemes:

1. Alternative Water Supply (AWS) Planning Enhancement: Amendments under Section 208 of the Water Industry Act 1991 introduced Security and Emergency Measures (Water and Sewerage Undertakers and Water Supply Licensees) Direction 2022 (SEMD, 2022). SEMD 2022 is a step change in water companies responsibilities to maintain services in the interest of national security or to mitigate the effects during a civil emergency.
2. Emergency Planning Enhancement: Heightened emergency response to an increased risk of major incidents out of our control such as national and rolling power outages

Ofwat have not challenged SWB's Alternative Water Supply scheme. Ofwat have challenged BRL on the need for investment, based on a shallow dive assessment.

Our view is that expenditure allowances are required for both companies. Reasonable worst case scenario referred to is for the licence holder South West Water, but our enhancement investment is based on activities undertaken by both companies (SBBDD35_L5_OFW-IBQ-SBB-014_Response). Concurrent events, such as a reasonable worst case scenario and other AWS required incidents, can occur at the same time and nationally. This was shown in Exercise Marrakesh (SBBDD36_L5_Learnings_Report_Exercise_Marrakesh). Both companies must be able to react quickly and efficiently to be able to respond, ensuring our customers have the best possible experience during incidents even over the large and rural geography of our region.

Emergency planning for both SWB and BRL has been based on the very real risk of energy shortages, as was seen during winters of 2022 and 2023. Quantification of this risk is still being developed by the industry. However, we are developing visualisation tools at the request of Defra Ministers (SBBDD33_L5_CEAPP_Letter_to_SWB_BRL), and now have a better understanding of the impact, scale and response needed but the plans for this investment. We now have a sound understanding what our response plans would require in terms of processes, plant and equipment.

The enhancement requested for emergency planning and site generation will decrease the risk of customer impact during an emergency, over which we do not have management control. We maintain our assets to a high standard, but power outages can be sudden and maintaining our assets is therefore not enough. We are claiming enhancement to increase our assets capability in response to this risk, as opposed to maintaining current asset resilience.

Best Option for Customers

Ofwat have applied a 20% challenge on best options for customers at SWB for both emergency planning and alternative water supplies and has failed BRL at the need for investment stage. It must be noted that the same principles, rationales, contracts, and cost efficiencies are applicable for both SWB and BRL. The SEMD enhancement case is clearly laid out in terms of the best options explored and how the company plans on providing the best and most resilient service to its customers.

Cost efficiency

Ofwat have applied a 30% challenge against SWB's funding for both emergency planning and alternative water supplies and has removed all funding for BRL on the basis of need for investment. This is on top of the stretching 17% efficiency challenge that we applied to all enhancement investment before submitting our plan.

Our view is that our enhancement business case for SEMD provides a clear rationale for need and cost efficiency. Our plans for SEMD were independently assessed and assured by a 3rd party Jacobs, which is acknowledged by Ofwat in the Draft Determination.

Price Control Deliverable - Security and Emergency Measures Directive (SEMD)

A common PCD is found in this area and is in the form of the DWI Section 19 Notice issued to the company (SBBDD34_L5_CEAPP_SWB01_Decision_Letter). The company is expected to still meet its PCD in full but whilst Ofwat agrees with the SWB and BRL overall business plan, the company is not being funded in draft determination to deliver it. We therefore reject the SEMD PCD.

Resilience - interconnectors

Table 5.30 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Partial Pass
Best option for customers	Minor Concerns
Cost efficiency	Minor Concerns

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for strategic interconnectors (resilience) from **£49.69M (Draft Determination)** back to **£70.31M**
- Our representation responds to Ofwat's challenges on the **need**, **best option** and **efficiency** of costs as presented below.
- We provide evidence, including:
  - Freeze thaw event in 2022 affecting levels of storage in the Allers zones.
  - Costing sheets including a list of interconnector schemes that were costed.
  - GIS plots of scheme routes and other routes considered showing that we have selected the best option and there is no base overlap.
- We propose a minor adjustment to the timing of the PCD output of the Mayflower WTW to Littlehempston WTW resilience interconnectors scheme.

Table 5.31 Representation PR24-DD-W-Resilience-Interconnectors (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD Response
SWB	70.31	49.69	-20.62	21.29	70.98
BRL	n/a	n/a	n/a	n/a	n/a
TOTAL	**70.31**	**49.69**	**-20.62**	**21.29**	**70.98**

Here we provide representations against Ofwat's decision to challenge the need, optioneering and efficiency of our resilience interconnectors schemes.

We provide sufficient evidence for a revised allowance of **£70.98m.**

The following appendices are referenced in this representation:

- SBBDD37-39, 77-78_L5_CEAPP_Strategic_Interconnectors

Need for Investment

Ofwat have challenged us on the need for investment in resilience interconnectors. We have reviewed our schemes and are confident that they will deliver an enhanced level of service to customers, providing resilience in supply by connecting our WRZs.

With the impacts of climate change adding increasing uncertainty to our water supplies and potentially putting at risk the quality of raw water, connectivity between zones is critical. A secure supply of water is reflected clearly in the responses from our customers when we asked them about their priorities.

The programme of schemes as planned may be called on in times of high demand. They will also provide resilience for operational events such as unplanned outage at a water treatment works. And they will enable eventual reduction of our reliance on vulnerable groundwater sources. Drinking water quality will be maintained through regular sweetening flows.

We have undertaken reviews of the activity we deliver under base maintenance and also as part of our ambitious WRMP. The benefits of the five resilience interconnector schemes do not overlap with base activities or our WRMP. As such we consider that in accordance with our assessment of Ofwat Information Notice IN 18/11 June 2018, these should be fully funded as enhancement expenditure.

Best Option for Customers

Ofwat have expressed minor concerns regarding the optioneering for our resilience interconnector schemes. We are confident in the optioneering approach taken for these schemes.

Our optioneering was developed from an unconstrained list of transfer options that itself was developed from the WRMP24 list and additional routes identified through internal workshops with operational teams. The full list of options was included in the Enhancement Case submitted with our plan.

A programme of work was developed that gathered information from several sources, including Asset Databases, GIS, Operations and Engineering teams. This work identified a total of 44 potential resilience schemes which were outlined in detail in the Enhancement Case as submitted. A process of challenge and review assessed a range of criteria, including overlaps with other planned investments, deliverability and qualitative benefits. This produced a list of viable schemes that were reviewed in more detail and went through further qualitative and quantitative analysis based on number of properties at risk of loss of supply. These were then assessed for best value and least cost on a water resource zone (WRZ) need basis to arrive at our final programme of five proposed schemes.

During the business planning process, we engaged expert consultants (Aqua and ChandlerKBS) to support our internal teams in developing asset optimisation and financial methodologies and models (SBBDD39_L5_CEAPP_SI_Cost_Model_Methodology) that aided in our assessment of an unconstrained long-list of options to propose a best value and least cost programme for strategic interconnectors.

For each proposed interconnector need we explored a range of technically feasible options to deliver a range of benefits. We were supported by external technical experts to ensure breadth and depth of options, and to ensure that scopes were accurate. An independent consultancy (Jacobs) was also used to challenge and verify the options considered by way of third-line assurance.

The peninsula is relatively long and narrow, and our river basins are relatively small and divided by our ranges of hills and moors. Weather patterns can vary dramatically across the region36 within the same season driven from an oceanic climate in the far west transitioning to a more inland climate in the east. This can lead to localised deficits of water resource, even when the region is better off.

At this stage in the planning process, we are not able to fully assess the impact these geographical challenges will have and therefore we expect to refine scheme routes and costs as the Delivery Plan is developed. We note that the South-West has several specific geographical challenges that influence our ability to meet the efficiency of companies operating in other parts of England and Wales.

Cost efficiency

Capex costs were developed by ChandlerKBS using a jointly developed PR24 estimating methodology (SBBDD39_L5_CEAPP_SI_Cost_Model_Methodology and SBBDD37_L5_CEAPP_PR24_SI_Estimating Methodology). Our unit cost models are based upon actual costs and have been updated for PR24 planning purposes. Once all the construction components have been identified for the shortlisted options for each type of link, CEDAR sheets were produced, and solution costs were developed from standard rates and design solution and were benchmarked assured via ChandlerKBS to ensure robustness (See example SBBDD77_L5_CEAPP_Strategic_Interconnectors_Costing_Sheet). These models are continually updated with outturn costs for similar schemes to ensure cost estimates are as accurate as possible. The management of our cost models is subject to third party assurance.

Benchmarking of estimates was carried out in accordance with our PR24 Cost Model Benchmarking methodology (SBBDD38_L5_CEAPP_PR24_SI_Cost_Model_Benchmarking_Report). SWB commissioned ChandlerKBS to provide an insight into how SWB PR24 cost models compared to other companies within the water industry for its PR24 review. ChandlerKBS used its industry knowledge to provide an analysis for SWB whilst maintaining commercial confidentiality for their other clients.

This report concluded that the cost models used by SWB for water infrastructure schemes had, on average, a negative variance when compared to the national models and to other comparable models. A negative variance percentage implies the SWB PR24 cost model being cheaper than the comparison cost equation, whereas a positive variance percentage implies the SWB PR24 cost model is more expensive.

Where this is not the case, the SWB PR24 cost models generally follow the trend of at least one of the comparator models, showing that the changes seen from PR19 to PR24 follow those seen at other water companies. Specifically for Water Infrastructure SWB PR24 cost models show on average a +11% variance to PR19 cost models, a -26% variance to data generated by a nationally integrated cost and carbon estimation tool (TR61 - Cost Information for Water Supply and Sewage Disposal' Technical Report 61, WRc's). The TR61 tool "is widely used to model water and wastewater assets across the UK water industry and is certified for use in Periodic Review activities".

On this basis we recommend that Ofwat provide the full enhancement allowance for our resilience interconnector schemes.

Price Control Deliverable - Resilience Interconnectors (PCD16b)

We propose adjustments to the timing of the outputs for this PCD. The ROA20 - Mayflower WTW to Littlehempston WTW scheme will be delivered over AMP8 and AMP 9. The PCD table has the whole length (37.2k) allocated for delivery by 2030. We propose that Ofwat allow for 9km of installed mains into the AMP8 PCD as a pro-rata allocation of total length to forecast AMP8 expenditure less an allowance to allow for early programme activities such as design and planning.

Resilience – Cyber Resilience and NIS

Table 5.32 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for schemes delivering Cyber Resilience from **£11.07m** (Draft Determination) to **£13.84m** (Business Plan).
- Our representations respond to Ofwat's challenges on **efficiency** of costs. We do not accept a company specific efficiency challenge is appropriate for this enhancement expenditure.
- We provide evidence, including:
  - NIS Regulation Notices for both SWB and BRL from DWI to deliver the schemes set out in the BP to support meeting the new eCAF targets
- We are claiming an increase in the Draft Determination as follows:
  - SWB **£2.04m**
  - BRL **£0.73m**

Table 5.33 Representation PR24CA39 – Cyber- water and waste (£m, pre FS and RPE, 2022/23 prices)

Company	BP	DD	Difference	Representation	DD Response
SWB	10.21	8.17	-2.04	2.04	10.21
BRL	3.63	2.90	-0.73	0.73	3.63
TOTAL	**13.84**	**11.07**	**-2.77**	**2.77**	**13.84**

The total cost for Cyber Resilience and NIS included in the Business Plan was **£13.84m**. Ofwat have assessed these costs using a shallow dive assessment due to low materiality and applied a company specific efficiency challenge of 20%.

We have provided an in-the-round response to Ofwat's shallow dive company-specific efficiency challenge at Section 4.1.

Ofwat have requested further evidence of the need for investment. In response we have provided the following directly to Ofwat.

- NIS Regulation notice for SWB
- NIS Regulation notice for Bristol Water

These documents are not publicly available due to their sensitivity.

Section 6 – Storm Overflows

6.1 Overview

Table 6.1 – South West Region Storm Overflows Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24CA55-WW-Storm Overflows	740.39	749.59	9.19	0.00	708.82	ADD20; CWW3 CWW20
PR24CA20-WW-CWQM	31.58	32.63	1.05	21.8	54.43	CWW3; CWW20
PR24CA16-WW-Event duration monitoring	1.14	1.14	0.00	0.00	1.14	CWW3; CWW20
TOTAL	**773.11**	**783.36**	**10.24**	**21.8**	**764.39**	

6.2 Introduction

In the Draft Determination Ofwat have assessed our storm overflows programme to be sector-leading in terms of efficiency, providing an uplift of £10.24 m against our submitted plan.

This representation focuses on changes in statutory requirements which have occurred since our October 2023 submission and have resulted in changes to elements of our programme. These changes have resulted in a net change of £-8.72m in our revised business plan.

In this section we:

- Explain the changes made to our storm overflow and continuous water quality monitoring programme, which are supported by the Environment Agency;
- Present further evidence against Ofwat's deep-dive assessment of three inefficient cost-outlier overflows; and
- Provide additional information for the pass forward flow and flow to full treatment schemes.

Our AMP8 Storm overflow programme will deliver improvements at storm overflows to reduce spills, and deliver against the requirements of the Environment Act, the Storm Overflow Discharge Reduction Plan (SODRP) and Bathing Water and Shellfish Water regulations.

In addition, there is a programme of continuous water quality monitors, MCert certification and permitting of event and duration monitoring at intermittent discharges and investigations associated with storm overflows.

In some cases, discharge relocation or microbiological treatment is required to meet the requirements of Bathing Water and Shellfish waters. Neither Microbiological treatment nor wastewater investigations were grouped under the Storm Overflow programme by Ofwat in its Draft Determination and are not subject to representation or discussion in this section.

We also set out representations against Ofwat's Storm Overflows Price Control Deliverable outputs and conditions.

Further detail of this representation is set out in SBBDD72_L5_CEAPP_Storm_Overflow_Representation.

Matters arising from the Draft Determination Outcome Delivery Incentives are represented in Outcomes representation document. Wider representations against Ofwat's PCD framework are presented in our Risk and Return representation document.

6.3 Changes in regulatory requirements

We have assessed the scope of our storm overflow plan against new regulatory requirements, Environment Agency feedback and the final 2023 calendar year event and duration analysis. In response we have revised our plan to incorporate the latest requirements.

6.4 Continuous Water Quality Monitoring

On 11th June 2024, we received feedback from the Environment Agency which required us to increase the scale of our continuous water quality monitor programme. This feedback was copied to Harry Armstrong, Ofwat. We also wrote to Chris Walters, Ofwat on 25th June 2024 to advise of this request from the EA. Based upon this feedback, we have increased the scale of our programme from 245 EDM monitors to 409 EDM monitors. Our unit rate is unchanged.

We are also including £1.7m to use 60 of the 409 monitors in the early part of AMP8 to allow for pilot studies at estuaries. These studies will determine how feasible it is to monitor discharges into estuaries, to inform our approach to monitoring the impact of storm overflows in estuaries from AMP9. The 60 monitors will then be redeployed in the latter years of AMP8 into their permanent location for the AMP8 inland monitoring. This is more efficient than seeking the full costs of an additional 60 monitors for pilots in AMP8 that would not be needed for permanent locations until AMP9.

This revised programme increases our continuous water quality programme from £31.6m to £54.4m.

6.5 Storm Overflow Improvements

The Environment Agency (EA) introduced new Urban Wastewater Treatment Regulations (UWWTR U_IMP4) WINEP driver in February 2024. The new driver covers overflows that have been assessed as cost beneficial under the Storm Overflow Assessment Framework (SOAF) process, resulting in a requirement for additional overflow improvements within the AMP8 programme.

This has resulted in the re-profiling of seven additional overflow improvements into the AMP8 programme.

We have also carried out spatial analysis of overflows affected by Bathing Waters newly designated in 2023 and 2024. This has resulted in the re-profiling of 17 additional overflow improvements into the AMP8 programme, to meet both customer priorities and regulatory requirements.

A further six additional overflows have been identified as requiring improvement in AMP8, as a result of our assessment of 2023 calendar year event and duration analysis (Feb 2024) against priority AMP8 WINEP drivers (shellfish waters and bathing waters).

The 30 storm overflow improvements identified are assessed to require total enhancement expenditure of £61m. These were included as potential additional unfunded obligations set out in the letter from Sarah Williams to Chris Walters, Ofwat on 12 July 2024.

We are committed to ensuring that our business plan remains affordable for customers and are required to ensure that our overall storm overflows programme meets statutory requirements and is deliverable. We have therefore made the decision to re-profile our AMP8 programme in response to these new regulatory requirements. This has resulted in the deferral of 29 lower priority overflows across our programme into AMP9, with the agreement of the Environment Agency (discussed with Local EA staff and agreed at the end of July 2024). The reduction in enhancement expenditure associated with the deferred overflows totals £89m. This has resulted in a net reduction of £-32m to the Storm overflow improvements and the overall net change including the increased continuous water quality monitor programme is £-9m.

Outside the Storm Overflow programme, but within the wider WINEP programme, we have been asked by Defra to increase the level of funding for Emergency Overflow monitoring from 25% to 50% of installations by 2030. We have done this, increasing the programme from £5.1m to £10.2m utilising the savings from the Storm Overflow programme. Whilst we have already installed EDMs at all Emergency Overflows in 2023, the U_MON6 programme also requires additional flow monitoring and reconfiguring of these sites to meet the MCERT standards.

The average spill reduction from the enhancement programme schemes by 2029/30 is 4.61, compared with 2.5 in the original business plan. However, this includes the benefit of the total schemes in the enhancement programme. In our original October 2023 business plan submission, the totex of the programme was reduced by £150m (21%) to allow for base maintenance overlap, £50m was assumed to be funded from our base maintenance funding in AMP8 and £100m was adjusted to account for past funding. The format of ADD20 has not enabled the reduction to the benefit to be proportionally allocated for that base maintenance allocation reduction.

The overall average spills per annum in 2029/30 is 16.5 compared with 17.5 in the original business plan, meeting the target set at the Draft Determination as required under the conditions for our Outstanding Status.

Our revised programme maintains compliance with those regulatory drivers which require completion by 2030 and the 38% of overflows at high priority locations target. We have agreed the changes in the programme with the Environment Agency and are in process of completing the required WINEP change documentation.

The net programme of 291 overflows has increased the total equivalent storage delivered in AMP8 from 250,791m3 to 252, 033m3. We also will deliver 409 continuous water quality monitors vs 245 in the original plan.

Our revised plan is £764.4m Totex, a £8.7m reduction from the original business plan. The breakdown of these changes is set out in Table 6.2 below.

Table 6.2 Breakdown of changes to the AMP8 programme

Changes		Nr Overflows	Nr CWQM additions	Totex £m
Additions to AMP8	Increased CWQM programme	-	164	22.9
	UWWTR SOAF overflows	7	-	13.5
	2023 new Bathing Water Designation	1	-	2.2
	2023 performance assessment	6	-	11.2
	2024 new Bathing Water designation	16	-	34.2
	Sub-total overflow additions	30	-	61.1
Deferrals to AMP9	Lower priority storage grey / grey hybrid	-22	-	-25.7
	Lower priority screen only	-5	-	-1.4
	Lower priority PFF / FFT	-2	-	-62.3
	Sub-total deferrals	-29	-	-89.4
Net total change		1	164	-8.7

Further detail of the changes and the impact upon the cost models, outputs and price control deliverables are set out in SBBDD72_L5_CEAPP_Storm_Overflow_Representation.

6.6 Additional information for pass forward flow increase.

In our business plan we had included 11 overflows at ten wastewater treatment works which required increases in pass forward flow (PFF) and flow to full treatment (FFT) to reduce storm discharges. In the Draft Determination, Ofwat requested that Companies provide additional information on these schemes as part of their representations. Ofwat subsequently provided detailed guidance on the information required via outbound query SBB-001.

Of the original 11 overflows, two have been deferred to AMP9 as part of the re-profiling of our programme to accommodate new regulatory requirements, as set out above. A further two have been reallocated to storage or hybrid solutions following a review of the proposed solutions and model confidence.

This results in a revised programme of £112m Totex in CWW3 for seven overflows, compared to £140m in the original business plan as set out in Table 6.3 below.

Table 6.3 Revised pass forward flow / flow to full treatment storm overflow programme

	Unit	BP	DD	DD Response
Totex	£m	140.76	153.52	111.92
Overflows	Nr	11	11	7
Increase PFF	l/s	838	838	658

For the remaining seven overflows, the requested additional information has been provided in SBBDD72_L5_CEAPP_Storm_Overflow_Representation, our response to query SBB-001 and ADD20 data table. In each case the reason for the PFF and FFT solution in the inability to drain down storage via the works as per Table 6.4.

Table 6.4 PFF scheme specific rationale or other changes

Scheme	Rationale for PFF / FFT
CENTRAL STW SHAFT 16 SPST_PSCSOEO_PLYMOU	Drain down - inability to drain between periods of heavy rainfall.
FALMOUTH STW_SO_FALMOUTH	
FOWEY STW_SSO_FOWEY	
MAER LANE STW_SSO_EXMOUTH	
SOUTH MOLTON STW_SO_SOUTH MOLTON	
SOUTH MOLTON STW_SSO_SOUTH MOLTON	
TIVERTON STW_SSO_TIVERTON	
CROYDE STW_SO_CROYDE	Revised - storage / hybrid
HAYLE STW_SSO_HAYLE	Revised - storage / hybrid
ST LEONARDS STW_SSO_LAUNCESTON	Deferred to AMP9
LADOCK VALLEY STW_SSO_TRESILLIAN	Deferred to AMP9

6.7 Cost Outliers

In the Draft Determination Ofwat identified three overflow improvement schemes as inefficient cost outliers according to the storage econometric model, resulting in a cost challenge of -£35m Enhancement Totex.

It was acknowledged that the Company had provided additional information to update a missing element of equivalent storage for inflow removal via the query process, which explained the discrepancy in the efficiency of these schemes. However, the timing was too late for inclusion in the Draft Determination itself. Ofwat recognised that the Company would update the information in the data table submission response to the draft determination.

Following the rebalancing of the programme, the Company has deferred one of the schemes into AMP9, as it was lower priority than the overflows newly requiring AMP8 investment as explained above.

The remaining two challenged overflows have had their total storage equivalent m3 updated in ADD20 to reflect the equivalent storage assumption for inflow removal. As such the Company has revised its plan to £17.3m enhancement totex for the two remaining AMP8 schemes. These costs are efficient based on the unit cost used in Ofwat's econometric model. These changes are summarised in Table 6.5 below.

Table 6.5 Cost outliers at DD and revised plan

Cost outliers	Totex (£m)			Total Equivalent Storage (m3)		
Scheme	**BP**	**DD**	**DD Response**	**BP**	**DD**	**DD Response**
TREVILLA SPS_PSCSOEO_FEOCK	3.03	1.27	3.03	20.46	20.46	92
HEATHFIELD STW_SSO_NEWTON ABBOT	14.31	0.84	14.31	95.93	95.93	697
FORDER VALLEY ROAD_CSO_PLYMOUTH	23.19	3.39	deferred	1235.51	1235.51	deferred
Total	40.53	5.50	17.34	1351.90	1351.90	789

6.8 Average Annual Spill Frequency

The Company has accepted the Draft Determination challenge of achieving 16.5 monitored average spills per annum by 2029/30 (2029 calendar year performance) and the annual profile. We also agree with an industry standard assumed percentage event and duration monitor uptime.

2023 and 2024 have been wet years with five out of seven months in 2024 with above average, notably high or exceptionally high rainfall. Our groundwaters are also notably to exceptionally high. As a result, our latest 2024 forecast is now 61,000 monitored spills, which is 44.

17 monitored spills per overflow. This has not been adjusted to reflect a theoretical 'typical' weather year.

We also continue to learn where it can be challenging to achieve sustainable step change in performance at overflows. The consequence is that our performance is not yet to the level we were expecting to be in 2024.

Our 2025/26 to 2029/30 forecast below represents our latest forecast based on typical year rainfall, per reporting requirement and reflect the remaining challenge we must catch up to the annual profile we have accepted in the Draft Determination target.

The latest annual profile is set out in Table 6.6 below and will be met via a combination of base maintenance spill reduction and the revised storm overflow enhancement programme. We will be continuing to better this position towards the accepted target annual profile set out in the Draft Determination.

Table 6.6 Annual Average Monitored Spill Per Overflow p.a. in AMP8

	Average spills per overflow p.a. (Monitored spills)						Data Table
Financial Year	24/25	25/26	26/27	27/28	28/29	29/30	
Calendar Year	2024	2025	2026	2027	2028	2029	
BP	20.00	19.50	19.00	18.50	18.00	17.50	N/A
DD	N/A	19.50	18.75	18.25	17.75	16.50	N/A
Company latest forecast	44.17*	25.34	22.85	19.96	18.29	16.50	OUT5

*Forecast for actual weather year, not adjusted to a 'typical' weather year

In ADD20 and therefore in OUT3, the benefit attributed to the schemes in the enhancement programme is 4.61 monitored spill reduction by 2029/30. It should be noted that this includes the benefit of the full scheme including the £150m totex that was removed from the enhancement programme costs as allocated to base maintenance. This was set out our Storm Overflow Programme Enhancement Business case as submitted October 2023, Section 12 Cost Efficiency, Page 98. In our understanding of the guidance for the new ADD20 requirements, we have presented the full scheme benefit to align the data requirements of the table, even though a large proportion is from the base maintenance element of the full programme at those 291 overflows.

6.9 Price Control Deliverables - Storm Overflows

Changes to storm overflow outputs- In line with the changes to our storm overflows plan, we have made minor changes to our Storm Overflow Price Control Deliverables outputs, as set out in Table 6.7 below.

As a result of the changes to our water quality monitoring programme, we have passed the materiality threshold and a PCD should now apply. We have included this new PCD in our technical annex SBBDD72_L5_CEAPP_Storm_Overflow_Representation.

Table 6.7 Outputs and PCDs for storm overflow improvements

Storm overflow Spill reduction and screen provision

	Number of schemes			Price Control Deliverable				Reference
Sub programme	Business plan	Draft Determination	Revised Plan	PCD Y/N	PCD DD Units	Draft Determination	Revised Plan	Ofwat data table
Storm overflow storage equivalent[1]	244	244	254	Y	m3	250791	252033	ADD20; CWW3; CWW20
Pass forward flow / FFT[2]	11	11	7	Y	l/s	838	658	
				Y	Nr	11	7	
Storm overflow screen only	28	28	23	Y	Nr	28	23	
Other overflows Falmouth (Combined scheme)	6	6	6					
Storm overflow relocation of discharge (LSO)	1	1	1	N	n/a	n/a	n/a	
Total	290	290	291					

[1] Total Storage Equivalent for Grey / hybrid schemes only and not any assessment for pass forward / FFT schemes which are covered by l/s PCD.

[2] There are 7 overflows with pass forward flow FFT solutions, 4 of which have a storage equivalent component included in the total 25,2033m3 storage

Table 6.8 Outputs and PCDs for Continuous Water Quality Monitors and EDM

Other outputs associated with Storm overflows WINEP programme

	Number of schemes			Price Control Deliverable				Reference
Sub programme	**BP**	**DD**	**DD Response**	**PCD Y/N**	**PCD DD Units**	**DD**	**DD Response**	**Table Ref**
Event and duration monitoring at intermittent discharges	558	558	558	N	n/a	n/a	n/a	CWW3; CWW20
Continuous Water Quality Monitors	245	245	409	N (DD) Y (FD)	Nr	n/a	409	CWW3; CWW20

Complexity and consistency of application - While we agree with the principles of PCDs, our view is that Ofwat's proposals for applying Storm Overflow PCDs are complex and introduce undue regulatory burden.

Ofwat has requested a range of complex evidentiary conditions including root cause evidence and base maintenance / enhancement apportionment for enhancement eligibility, optioneering to detail design and solution selection including nature-based solutions, evidence to support programme changes, reporting and site-specific assurance.

Our view is that the complexity and specificity of these conditions amount to an overreach in regulatory oversight, that could stifle innovation and efficient delivery. We consider that this the scale and variety of the conditions for the different sub-components of the storm overflow programme result in a level of complexity which is impracticable and subject to material inconsistency in application across both Companies and assurance providers.

There are eight different conditions that apply to each of the four of the storm overflow storage equivalent model subprogrammes and six different conditions that apply to each of the screen only and pass forward flow / flow to full treatment sub-programmes. As each condition is slightly different for each sub programme then this results in 44 conditions. They must all be reviewed at scheme level.

Each of the 291 overflows must have multiple hydraulic model assessments to assess not only the pre and post solution of the option delivered, but multiple options to review past WINEP investment and alternative options if wholly 'grey' options was to be theoretically delivered. All of the modelling and option assessment reports must be individually audited by an independent third-party auditor.

This method is distinct from and therefore additive to the reporting method required by the Environment Agency, which results in additional complexity in reporting via complex methods to two different regulators who have developed stand-alone conditions for reporting and programme management.

We recommend that there is a joint Ofwat, Environment Agency and Water UK review to ensure that the PCD outputs and conditions are refined, simplified, and structured to ensure consistency.

Enhancement to base - Ofwat intend to retrospectively clawback expenditure in PR29 where the company cannot evidence that all investment was eligible for an enhancement allowance. This method risks double jeopardy for companies that have already significantly reduced their enhancement costs to reflect base and enhancement apportionment.

In our October 2023 business plan, our storm overflow programme had already been reduced by £150m for capital maintenance overlap, AMP7 and operational solutions. This was set out our Storm Overflow Programme Enhancement Business case, Section 12 Cost Efficiency, Page 98. Any retrospective review of allowances therefore must take into account those reductions already made prior to setting PR24 allowances to prevent the double counting of apportionment and capital maintenance adjustments.

The risk of the above condition is that Ofwat will reduce the enhancement allowance and will not recognise base apportionment over and above PR24 allowances. The scale of this programme could result in a material shortfall in financial allowance at PR29, that would not have been funded previous in the past level of capital maintenance investment. Capital maintenance levels have historically been set based using risk-based evidence with well-defined serviceability or asset health indicators and econometric models defined by historical levels to achieve those serviceability and asset health indicators.

Section 7 – Net Zero and Environmental Gains

7.1 Water Services - Nature Priority

Table 7.1 SWB Net Zero and Environmental Gains Representation – Water Services (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-W-Drinking-Water-Protected-Areas	12.34	8.64	3.7	3.70	12.34	CW3.13
PR24-DD-W-INNS	10.24	6.15	4.09	4.10	10.24	CW3.10
PR24-DD-W-Biodiversity	1.20	0.96	0.24	0.24	1.20	CW3.1
PR24-DD-W-Eels-fish-passes	3.77	3.01	0.76	0.75	3.77	CW3.7
PR24-DD-W-Eels-fish-entrainment-screens	9.35	7.48	1.87	1.87	9.35	CW3.4
PR24-DD-W-Water Framework Directive	6.46	5.17	1.29	1.29	6.46	CW3.16
PR24-DD-W-Investigations	15.41	13.51	1.9	0	13.51	CW3.28, CW3.31, CW3.34
TOTAL	**58.77**	**44.92**	**13.85**	**11.95**	**56.87**	

Table 7.2 BRL Net Zero and Environmental Gains Representation – Water Services (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-W-Drinking-Water-Protected-Areas	0.15	0.12	-0.03	0.03	0.15	CW3.13
PR24-DD-W-INNS	0.74	0.59	-0.15	0.15	0.74	CW3.10
PR24-DD-W-Biodiversity	3.07	2.46	-0.61	0.61	3.07	CW3.1
PR24-DD-W-Eels-fish-passes	n/a	n/a	n/a	n/a	n/a	n/a
PR24-DD-W-Eels-fish-entrainment-screens	n/a	n/a	n/a	n/a	n/a	n/a
PR24-DD-W-Water Framework Directive	2.64	2.11	-0.53	0.53	2.64	CW3.16
PR24-DD-W-Investigations	1.98	6.34	4.36	0	6.34	CW3.28, CW3.31, CW3.34
TOTAL	**8.57**	**11.61**	**3.04**	**1.32**	**12.93**	

Overview: Our Nature Priority

The natural environment of the South West is under threat from climate change, development, intensive agriculture and other human pressures. The UK Government has introduced a range of legally binding targets to reverse the decline of biodiversity and tightened environmental legislation. SWB have worked closely with the environmental regulators to develop a programme of nature recovery.

Our plan included a package of investigations and implementation schemes totalling c£67m to improve water quality through catchment management schemes, deliver measurable environmental enhancements through the new Biodiversity Performance Commitment, control the spread of Invasive Non Native Species, protections for drinking water through catchment management and a range of measures to re-naturalise our waterways. It also included a proposal for a bespoke Performance Commitment for catchment management.

Our PR24 plan recognised the need for urgent action to tackle the climate and ecological crises and made commitments to additional linked activities which the company will fund using group resources, alongside our programme of WINEP investigation and implementation schemes.

As we do this, we are committed to working with natural processes and seeking to deliver wider public and environmental benefits across the region and in partnership. This approach is at the heart of our 'Green First' framework, taking a catchment approach with partners and maximising sustainable, lower carbon options for each and every intervention.

Ofwat made a number of adjustments to the nature recovery programme – whilst we had requested £67m, an allowance of £56m was allocated, a reduction of £10.5m, with some areas facing particular reductions in allocations. This is on top of the c.17% efficiency that we applied to all enhancement allowances before submitting our business plan.

The allowances allocated by Ofwat will not be sufficient to deliver the WINEP outcomes developed with the environmental regulators, informed by independent assurance, as set out in the Action Specification Forms.

For Upstream Thinking (DWPA WINEP) the cost assessment and optioneering process undertaken pointed to best value delivery through local environmental charities who live and work close to the areas we are focussing on, as opposed to delivering in-house or through external consultancy. With a lower budget we won't be able to maximise the additional Biodiversity Performance Commitment benefits and collaborate with environmental delivery partners on wider catchment management solutions (such as natural flood management benefits and nature-based solutions).

For Invasive Non Native Species, the optioneering process showed that it is the proposed combination of activities and interventions which will keep the invasives in check. The programme of testing and trialling new ways to control their presence and their potential to spread will be less rigorous and with reduced academic peer review, which will limit the ability and confidence of other water companies to replicate these techniques with certainty across the country.

For Eel Screens and Fish Passes, there will be limited scope to vary solutions which have to be designed and delivered in ways which meet specific requirements of the environmental regulator.

For the Biodiversity and Conservation schemes, these are unique projects (e.g. removal of a sluice) in environmentally sensitive habitats and reduced budget may mean that the projects cannot proceed as, without the right level of investment, taking action following the right construction methods and procedures could damage those sensitive habitats, putting SWW at potential risk of prosecution.

Below we provide representations to support the re-instatement of our business plan allowances for our nature programme.

Drinking water protected areas

Table 7.3 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	BRL Pass SWB Pass
Best option for customers	BRL Pass SWB Minor Concerns
Cost efficiency	BRL Pass SWB Some Concerns

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for Drinking Water Protected Area schemes back to the original £12.34 M and £0.15 M (SWB and BRL Business Plan values).**
- **Our representations respond to Ofwat's challenges on the best option and efficiency of costs as presented below.**
- **We provide evidence, including:**
  - **Jacobs Technical Assurance Report**
  - **Options Development and Assessment Reports**
  - **Stantec & Apem Scheme Costing Review**
  - **Ofwat Query Response**

Table 7.4 Representation PR24-DD-W-Drinking-Water-Protected-Areas (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	12.34	8.64	3.70	3.70	12.34
BRL	0.15	0.12	0.03	0.03	0.15
TOTAL	**12.49**	**8.76**	**3.73**	**3.73**	**12.49**

Here we provide evidence to support the re-instatement of our full Business Plan allowance for Drinking Water Protected Areas, of **£12.34 M** and **£0.15 M** (SWB and BRL Business Plan values).

The following appendices are referenced in this representation:

- SBBDD41_L5_CEAPP_WINEP24_Scheme_Costing_Review_(Stantec&Apem)
- SBBDD42_L5_CEAPP_WINEP24_Technical_Assurance_Jacobs
- SBBDD44_L5_CEAPP_DrWPA_OARs_&_ODRs

Best Option for Customers

We note that Ofwat have not challenged BRL's DrWPA schemes on the basis of optioneering.

Through their deep dive assessment, Ofwat has introduced a 10% efficiency challenge on DrWPA area schemes on the grounds of optioneering.

SWB considered a range of appropriate options over a range of intervention types through the independent development of Options Development Reports (ODR) for each DrWPA scheme. These were developed independently by AECOM and concluded, in every case, that the preferred option is to implement a catchment wide scheme through trusted NGO partners (SBBDD44_L5_CEAPP_DrWPA_OARs_&_ODRs).

The OAR's, developed independently by AECOM, include cost-benefit appraisals for a range of delivery options that were considered. These options included:

1. Development of a catchment wide scheme with trusted NGO's
2. Partnership with consultancy to deliver catchment wide scheme
3. Creation of internal farm advisory team to deliver catchment actions
4. List required services on auction platforms or as payments for eco-services
5. The best value for customers, communities and the environment over the long term was identified as being option 1 above (Collaboration and partnership with NGO's to deliver a catchment wide scheme).

Third-party technical assurance of the analysis has been provided by AECOM (SBBDD44_L5_CEAPP_DrWPA_OARs_&_ODRs)

The OAR's also detail other benefits the options can deliver, e.g. net-zero, natural environment, catchment resilience etc. It has relied on robustly calculated and trackable benefits when proposing best value options, to note, the preferred option is also the least cost one.

This programme of works supports entirely SWB's Biodiversity PC commitments. This delivers inherent efficiencies by ensuring both water quality and biodiversity outcomes from the same investment. Reducing this budget will directly impact on SWB's ability to deliver against this PC.

Third-party funding has been reliable in AMP6 and AMP7, enabling a ~50% match funding contribution that enables our catchment management programme to deliver more. Over £10m has been received in AMP7 to date from the National Trust, DEFRA, Duchy of Cornwall, Cornwall Council, and the EA. This third-party funding is reliant on in-kind SWB funding. Conversely, reducing this core funding doubles the impact of the OFWAT reductions in the catchments.

As part of SWB's plans for developing its work packages for AMP8, SWB are required to obtain further insight into customers' priorities for improvements to the environment. Turquoise Thinking Ltd were commissioned to conduct this research and produced a report in September 2022 with the key findings. For catchment management, the report identified that 17% of the audience say investment should remain at current levels, compared to 83% of the audience who say that investment should increase. There were no instances where customers thought investment in catchment management should decrease.

- SWB provided a response to the Ofwat query ref. OFW-OBQ-SBB-111, which questioned the consistency of the reference numbers. We answered all three questions in full to clarify, with no further actions required.
- The list of all SWB's DrWPA OAR's and ODR can be found in appendix SBBDD44_L5_CEAPP_DrWPA_OARs_&_ODRs.

Cost efficiency

Ofwat have introduced a 20% shallow-dive efficiency challenge against SWB and BRL's DrWPA schemes.

For Bristol Water, we believe the supporting information in appendix SBBDD41_L5_CEAPP_WINEP24_Scheme_Costing_Review_(Stantec&Apem), provides Ofwat with sufficient evidence of the efficiency of our business plan costs for DrWPA. The maximum 20% company specific efficiency challenge, which did not include DrWPA calculations, has not been thoroughly modelled and its application to this proven efficient programme is unreasonable.

The 20% efficiency challenge did not calculate the costs for implementing DrWPA schemes and therefore the efficiency should be removed from the programme. In our 'Biodiversity Enhancement Case' submitted as part of PR24 Business Plan we provide evidence to show that the unique capital delivery requirements for delivering and installing DrWPA improvements requires a specific approach.

Our costed scheme was presented in our 'Biodiversity Enhancement Case' as pre-efficiency costs. An internal review of the agreed final programme by SWB applied a c.17% efficiency challenge to all schemes, which resulted in the post-efficiency costs presented in our business plan ('Biodiversity Enhancement Case' p8). This efficiency challenge recognises the potential for future economies of scale for the total programme, not yet identified at this stage of PR24.

For SWB, cost estimates within OARs were developed by AECOM. AECOM developed costs totalling £12.822m for SWB DrWPA schemes. These costs are exclusive of required monitoring and investigation outcomes written into the ASF forms. When these costs are applied this sum increases to £14.373m (pre-efficiency). During SWB's efficiency challenge, these costs were reduced to the £12.339m submitted to Ofwat. The DD returned a further efficiency reduction to these values now totalling £8.637m. This equates to ~60% reduction in costs between DD and pre-efficiency costed schemes, presenting an un-manageable budget for the programme of works and monitoring outcomes.

The list of all SWB's DrWPA OAR's and ODR can be found in appendix
SBBDD44_L5_CEAPP_DrWPA_OARs_&_ODRs

AMP7 catchment scheme costs from SWB's long-standing delivery partners were submitted to AECOM during the development of OARs/ODRs in order to inform AMP8 costs. These are not for profit Non-Governmental Organisations (NGOs) and their delivery costs are considerably less than those associated with private consultancies. Overhead costs associated with these NGOs are also efficient as they are local to the area within the larger region, reducing the need for extended travel duration and cost.

Following the completion of the first drafts of ASFs for the seven WINEP DrWPA schemes (submitted to the Environment Agency in May 2024), SWB have received revised costs from our long-standing delivery partners, tailored to the ASF outcomes. These revised costs have already been efficiently reduced, by ~33%, to fit within the SWB target value for the programme of £12.34m. Therefore, a budget of £8.637m to complete these works will not be sufficient to meet these ASF outcomes and SWB will have to review the ASFs with the EA to reduce scope, in order to complete the programme of works. This will have negative consequences on the overall ability of the programme to mitigate pollutants from DrWPAs, contradictory to government priority statements for river health.

Invasive non-native species

Table 7.5 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	SWB Partial Pass BRL Pass
Best option for customers	SWB Minor Concerns BRL Water Pass
Cost efficiency	SWB Some Concerns BRL Pass

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for INNS schemes back to the original £10.2M and £0.7M (SWB and BRL Business Plan values).**
- **Our representations respond to Ofwat's challenges on the need, best option and efficiency of costs as presented below.**
- **We provide evidence, including:**
  - **Jacobs Technical Assurance Report**
  - **Costing Options Development Report**
  - **INNS Costing Review**

Table 7.6 PR24-DD-W-INNS Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	10.24	6.15	4.09	4.10	10.24
BRL	0.74	0.59	0.15	0.15	0.74
TOTAL	10.98	6.74	4.24	4.25	10.98

Here we provide evidence to support the re-instatement of our full Business Plan allowance for INNS, of **£10.98m**. Ofwat have undertaken a deep dive assessment of SWB's costs for INNS, and a shallow dive assessment for Bristol Water's costs (PR24-DD-W-INNS).

The following appendices are referenced in this representation:

- SBBDD42_L5_CEAPP_WINEP24_Technical_Assurance_Jacobs
- SBBDD45-49_L5_CEAPP
- SBBDD49a_L5_CEAPP_INNS_OARs_&_ODRs

Need for Investment

For Bristol Water we note Ofwat have not challenged the need for investment hence no further evidence is being presented in this representation.

Ofwat have introduced a 10% adjustment to SWB's expenditure allowances for INNS on the basis of need for investment.

The WISER Report 2 states that the UK has specific international and national obligations and laws to aim to limit spread, implement controls and prevent risks from INNS, which water companies are to meet through the WINEP programme. These SWB and BRL INNS Schemes propose to use enhancement investment to deliver INNS plans produced from AMP 7 WINEP Investigations to meet this obligation.

These include assessment of the future risk of INNS in our region, and biosecurity measures including washdowns and facilities to raise the profile of INNS risk. We believe activities to be justified as enhancement as they are new interventions to implement biosecurity measures in new areas.

The UK Water Industry Research (UKWIR) produced a report (SBBDD48_L5_CEAPP_INNS_Implications_on_the_water_industry) - INNS Implications on the Water Industry. There is a clear regulatory and risk management need for investment in innovative solutions to biosecurity and the control of INNS, taking into account additional threats posed by climate change. The company has provided an efficient cost-effective plan for delivering INNS schemes and a third-party review on the need for investment is appended (SBBDD47_L5_CEAPP_SWW_DD_responses & SBBDD45_L5_CEAPP_Costing_Options_ Development_Reporting).

Best Option for Customers

For Bristol Water we note Ofwat have not challenged that this is the best option for customers hence no further evidence is being presented in this representation.

Ofwat have introduced a 10% efficiency challenge against SWB's costs for invasive non-native species on the basis of optioneering.

Options Development Guidance sets out that, where an action is identified through the PR19 investigation, this action becomes the PR24 preferred option. In such cases the requirement for an Options Development Report is met through the reporting and evidence requirements of the PR19 investigation, as agreed. For example, through a PR19 Measure Specification Form or a Water Resources Option Appraisal Report. Therefore, where an INNS action was identified through PR19 that action becomes the PR24 preferred option and ODRs were not required, but OARs were developed alongside detailed Action Specification Forms (see SBBDD49a_L5_CEAPP_ INNS_OARs_&_ODRs).

Many of our proposals are for trials to seek effective methods where none are known, as encouraged by GB INNS Strategy and supported by EA and NE.

ODRs were produced for two new schemes. SWB is the only company attempting to address marine INNS through its Christchurch scheme (08MU102857) INNS ND. We reviewed seven options, and a final eighth option was identified by combining three approaches to be trialled.

Given the complexities of the trials we do not believe that this justifies a further 10% efficiency reduction across all projects. Further comment is appended (SBBDD49_L5_CEAPP_DD_support_INNS & SBBDD47_L5_CEAPP_ SWW_DD_responses).

The Creedy Crayfish scheme (08SW102874) INNS_ND ODR identifies one option for third party specialists to deliver a detailed Action Specification Form. This requires all options identified to be delivered for a successful INNS and protected species programme. Further commentary is appended (SBBDD49_L5_CEAPP_DD_ support_INNS & SBBDD47_L5_CEAPP_SWW_DD_responses).

The Ofwat deep dive did not take into account the pioneering work, trials and collaboration required as supported by the GB INNS Strategy. Jacobs Assurance Audit (SBBDD42_L5_CEAPP_WINEP24_Technical_ Assurance_Jacobs) states: "Evidence seen and discussed during the audit gives confidence that the environmental risks and issues are understood and agreed with regulators/stakeholders" & "We recognise this is a challenging and ambitious program to a scale not delivered before".

Cost Efficiency

Ofwat have introduced a 20% efficiency challenge against our INNS schemes on the basis of cost efficiency.

BRL and SWB set out in the OARs the options and identified which provided the most value to customers, communities, and the environment over the long term. OARs were developed in collaboration with the Environment Agency and Natural England, and utilising technical input from third parties (Stantec for Bristol Water and AECOM for South West Water). Third party consultancy Jacobs (SBBDD42_L5_CEAPP_WINEP24_ Technical_Assurance_Jacobs) provided analysis and assurance that the Options Development Reports (ODRs) were correctly followed and verified in the OAR development.

A SWB internal review of the submitted programme applied a c.17% efficiency challenge to all schemes, which resulted in the post-efficiency costs presented in our business plan. This efficiency challenge is recognising the potential for future economies of scale for the total programme, not yet identified at this stage of PR24.

The Ofwat deep dive review on SWB's options appraisal, did not take into account that WINEP is developing innovative measures, with options developed via the AMP7 investigations. No benchmarking data is available, given the relative novelty of these schemes.

For example, SWB is the only UK water company delivering measures to manage marine INNS, there are no other schemes to benchmark against. Similarly, when developing innovative screening of INNS fish and invertebrates, it is not possible to benchmark costs as this work has not been delivered before. Best practise, where known, was considered but for many schemes we are carrying out trials to identify the most effective methods. A third-party review was used pre determination to estimate and inform costings for delivery of selected number of schemes (SBBDD46_L5_CEAPP_INNS_Costings_Review). The Environment Agency and Natural England are also supportive of these novel approaches.

Ofwat's approach does not take into account the cost of INNS delivery and therefore the efficiency should be removed from these programmes. The unique capital delivery requirements for delivering INNS schemes requires a specific approach. We believe the Biodiversity Enhancement Business Case supporting information provides Ofwat with sufficient evidence of the efficiency of our business plan. The 20% company specific efficiency challenge, which did not include INNS delivery calculations, has not been thoroughly modelled and its application to proven efficient programmes is unreasonable.

We believe that this evidence justifies the full re-instatement of costs for these schemes.

Biodiversity Conservation

Table 7.7 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for schemes delivering Biodiversity back to the original £4.28 M (Business Plan).**
- **Our representations respond to Ofwat's challenges on efficiency of costs.**
- **We provide evidence, including:**
  - **Costings Audit of WINEP schemes by Stantec and Apem**
  - **Bleadon Sluice Removal Costing Estimate by Chandlers KBS**
- **We are claiming an increase in the Draft Determination as follows:**
  - **SWB £0.24M**
  - **BRL £0.61 M**

Table 7.8 Representation PR24-DD-W-Biodiversity (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	1.20	0.96	0.24	0.24	1.20
BRL	3.07	2.46	0.61	0.61	3.07
TOTAL	4.27	3.42	0.85	0.85	4.27

Here we provide evidence to support the re-instatement of our full Business Plan allowance for biodiversity and conservation, of £4.27 M.

The following appendices are referenced in this representation:

- SBBDD50_L5_CEAPP_Bleadon_Sluice_Removal
- SBBDD41_L5_CEAPP_WINEP24_Scheme_Costing_Review_(Stantec&Apem)

Cost efficiency

The total cost for biodiversity and conservation schemes included in our Business Plan was £4.27 M. Ofwat have assessed these costs using a shallow dive assessment and have determined expenditure allowances of £3.42 M in their Draft Determination.

Ofwat have assessed these costs using a shallow dive model (PR24-DD-W-Biodiversity). A 20% company specific efficiency challenge has been applied by Ofwat to all SWB and BRL cost allowances, assessed using a shallow dive.

The costs for Biodiversity in our business plan have been developed from the ground up and costed individually at the scheme level. Detailed costings were undertaken of individual schemes because the design, environmental context and outcomes of each varied.

For the BRL Bleadon Sluice Removal scheme, costs were assessed by Chandlers KBS (SBBDD50_L5_CEAPP_Bleadon_Sluice_Removal), an independent consultant specialising in infrastructure costing services.

The costs for SWB biodiversity and conservation schemes were assured via a detailed third-party costings audit. This assurance audit is appended SBBDD41_L5_CEAPP_WINEP24_Scheme_Costing_Review_(Stantec&Apem).

It is important to note for our Biodiversity and Conservation schemes, that these are specific and targeted projects (e.g. removal of a sluice) often delivered in environmentally sensitive habitats and that reduced budget may mean that the projects cannot proceed as, without the right level of investment, taking action following the right construction methods and procedures could damage those sensitive habitats, putting SWB at potential risk of prosecution.

Our schemes were presented in our Biodiversity Enhancement Business Case as pre-efficiency costs. An internal review of the agreed final programme by SWB applied a c.17% efficiency challenge to all schemes, recognising the potential for future economies of scale for the total programme (Biodiversity Enhancement Case p8). Our post internal efficiency scheme costs were presented in our Biodiversity Enhancement Case to Ofwat and totalled £4.28m.

The shallow dive 20% company specific efficiency challenge (Clean Water) was derived from a restrictive list of models (Ofwat, 2024), which is summarised in Table 7.9 below. It is counterintuitive that the shallow dive efficiency challenge has been applied to costs that were not used to derive the shallow-dive company-specific challenge.

Table 7.9 Ofwat's Company-Specific Efficiency Challenge

Clean Water benchmarking models used to derive 20% shallow dive efficiency	Clean Water models NOT used to derive 20% shallow dive efficiency
Supply-Interconnectors	Biodiversity & conservation
Supply	Eels & fish entrainment screens
Demand	Eels & fish passes
Metering	Invasive non-native species
Lead	Drinking water protected areas
Leakage	Water framework directive
Raw water deterioration	25-year environment plan
Investigations	Wetland creation

The maximum 20% company specific efficiency challenge by Ofwat did not include biodiversity and conservation improvement calculations, and therefore has not been thoroughly modelled. Its application to already well evidenced and efficient programmes is unreasonable, and the additional 20% efficiency requirement should be removed from these programmes.

Eels and Fish Passes and Screens

Table 7.10 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	**Pass**
Best option for customers	**Pass**
Cost efficiency	**Pass**

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for schemes delivering Eels and Fish Entrainment Screens and Passes back to the original £9.35M and £3.77M (Business Plan values) respectively.**
- **Our representations respond to Ofwat's challenges on efficiency of costs**
- **We provide evidence, including:**
  - **AECOM Eels & Fish Costing Data**
  - **Options Assessment Reports for Eels & Fish Screens and Passes**
- **We are claiming an increase in the Draft Determination as follows:**
  - **Eels & Fish Entrainment Screens £1.87 M**
  - **Eels & Fish Passes £0.75 M**

Table 7.11 Representation PR24-DD-W-Eels-fish-passes (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	3.77	3.01	0.76	0.75	3.77
BRL	n/a	n/a	n/a	n/a	n/a
TOTAL	**3.77**	**3.01**	**0.76**	**0.75**	**3.77**

Table 7. 12 Representation PR24-DD-W-Eels-fish-screens (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	9.35	7.48	1.87	1.87	9.35
BRL	n/a	n/a	n/a	n/a	n/a
TOTAL	9.35	7.48	1.87	1.87	9.35

Here we provide evidence to support the re-instatement of our full Business Plan allowance for Eel/Fish screens and passes, of £13.12 M.

The following appendices are referenced in this representation:

- SBBDD51_L5_CEAPP_AECOM_Eels_&_Fish_Costing_Data_24
- SBBDD52_L5_CEAPP_OARs_Eels_&_Fish

Cost efficiency

Ofwat have assessed these costs for eel and fish screens and passes schemes using a shallow dive assessment.

Our Business plan included £9.35 M for Eels & Fish Screens schemes to deliver our clean water related WINEP obligation. Ofwat have allowed £7.48 M in the draft determination.

Our Business plan included £3.77 M for Eels & Fish Passes schemes to deliver our clean water related WINEP obligation. Ofwat have allowed £3.01 M in the draft determination.

Ofwat have assessed both screen and passes costs using a shallow dive efficiency. A 20% company specific efficiency challenge has been applied by Ofwat to all SWB and BRL cost allowances, assessed using a shallow dive.

Our third-party costed schemes were presented in our 'Biodiversity Enhancement Case' as pre-efficiency costs. A SWB internal review of the agreed final programme applied a c.17% efficiency challenge to all schemes, which resulted in the post-efficiency costs presented in our business plan. This efficiency challenge is recognising the potential for future economies of scale for the total programme, not yet identified at this stage of PR24.

SWB have specific applicable experience from AMP6 and AMP7 delivery in the project management of eel and fish passes and entrainment screens. This includes delivery of 7 eel passes, 3 screening solutions for compliance with the Eels (England and Wales) Regulations 2009, a further suite of fish exclusion screening across SWW sites, and continued development and delivery in AMP7 of a further 1 Eel Regulations screening solution and 1 large technical fish pass designed for internationally important designated species. The costings presented in our 'Biodiversity Enhancement Case' reflect this experience and include consideration of the specific design challenges likely to be encountered at each site.

Analysing Ofwat's unit cost per action industry benchmarking in the PR24-DD-W-Eels-fish-passes and PR24-DD-W-Eels-fish-entrainment-screens enhancement allocation models demonstrates the efficiency of our business plan. Our unit cost per action in our business plan is 30% below the industry median benchmark for entrainment screens and 13% below the industry median benchmark for passes. Applying a further 20% Ofwat efficiency challenge puts both of these Eels (England and Wales) Regulations 2009 compliance programmes at significant risk of non-delivery.

We believe the industry unit cost per action median model, and the supporting information provided in our 'Biodiversity Enhancement Case', provides Ofwat with sufficient evidence of the efficiency of our business plan. The maximum 20% company specific efficiency challenge, which did not include entrainment screens and passes models has not been thoroughly calculated and its application to these proven efficient programmes in our view is unreasonable and therefore should be removed.

The shallow dive 20% company specific efficiency challenge (Clean Water) was derived from a restrictive list of models (Ofwat, 2024), which is summarised in Table 7.13 below. It is counterintuitive that the shallow dive efficiency challenge has been applied to costs that were not used to derive the shallow-dive company-specific challenge.

Table 7.13 Ofwat's Company-Specific Efficiency Challenge

Clean Water benchmarking models used to derive 20% shallow dive efficiency	Clean Water models NOT used to derive 20% shallow dive efficiency
Supply-Interconnectors	Biodiversity & conservation
Supply	Eels & fish entrainment screens
Demand	Eels & fish passes
Metering	Invasive non-native species
Lead	Drinking water protected areas
Leakage	Water framework directive
Raw water deterioration	25-year environment plan
Investigations	Wetland creation

We believe this supporting information provides Ofwat with sufficient evidence of the efficiency of our business plan. The maximum 20% company specific efficiency challenge by Ofwat did not include Eels and Fish passes and screens improvement calculations, and therefore has not been thoroughly modelled. Its application to already well evidenced and efficient programmes is unreasonable, and the additional 20% efficiency requirement should be removed from these programmes. See (Tab 3) appendix SBBDD51_L5_CEAPP_AECOM_Eels_&_Fish_Costing_Data_24.

Water Framework Directive

Table 7.14 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass (20% shallow dive applied)

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for responding to the PR24-DD-W-Water-Framework-Directive challenge back to the business plan values of £6.46 M for SWB and £2.64 M for BRL.**
- **Our representations respond to Ofwat's 20% company specific efficiency challenge.**
- **We provide evidence, including detail of our approach to costing these WFD schemes and our concerns regarding the approach taken by Ofwat to model allowances for our WFD schemes.**
- **We are claiming an increase in the Draft Determination as follows:**
  - **£1.291 M South West Region**
  - **£0.527 M Bristol.**

Table 7.15 Representation Water PR24-DD-W-Water-Framework-Directive (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	6.46	5.17	-1.29	1.29	6.46
BRL	2.64	2.11	-0.53	0.53	2.64
TOTAL	**9.1**	**7.28**	**-1.82**	**1.82**	**9.10**

Here we provide evidence to support the re-instatement of our full Business Plan allowance for WFD schemes, of **£6.46 M** for SWB and **£2.64 M** for BRL.

The following appendices are referenced in this representation:

- SBBDD53-54_L5_CEAPP_Zipped.

Cost efficiency

Ofwat have introduced a 20% shallow-dive efficiency challenge against our cost allowances for WFD schemes.

Here we provide evidence that we believe is sufficient for Ofwat to re-instate our full business plan allowance for WFD schemes.

Our cost allowances for WFD schemes have been developed based on scheme specific information. Our approach to costing is described in detail in our Water Resources WINEP business case and in Ofwat query OFW-OBQ-SBB-117.

Our costing is typically based on investigation work delivered at the same sites in AMP7, taking into consideration the specific requirements for further work at each site in AMP8. These costs were assured by consultants KBS Chandlers, an independent consultant specialising in infrastructure costing services (Water Resources WINEP Business Case, p21). Further independent assurance was delivered by Jacobs as part of business plan development.

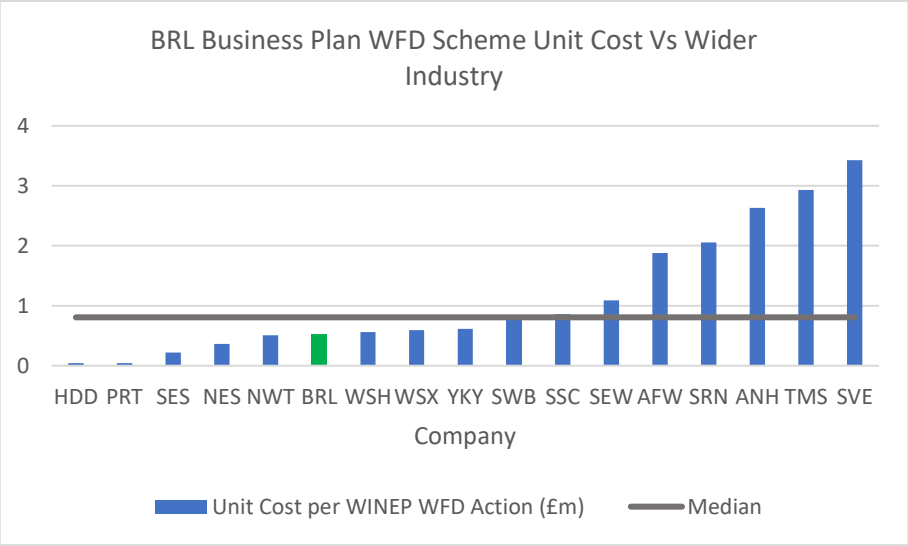
Our schemes were presented in our Water Resources WINEP business case as pre-efficiency costs. An internal review of the agreed final programme by SWB applied a 15% efficiency challenge to all enhancement costs, recognising the potential for future economies of scale for the total programme (Water Resources WINEP Business Case, p21).

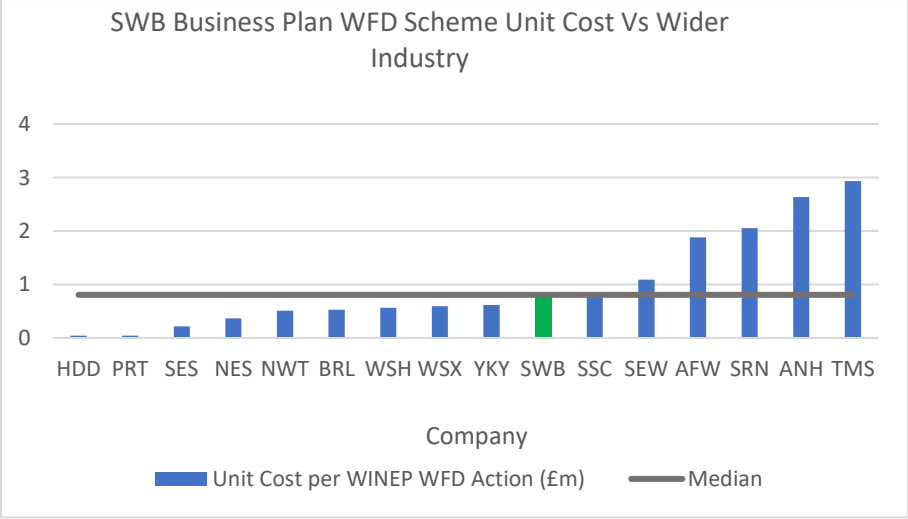
Analysing Ofwat's unit cost per action industry benchmarking in the feeder model demonstrates the efficiency of our business plan. Below at figures A4 and A5 we present a comparison of Ofwat's unit cost data by company, showing that our business plan costs are already efficient when benchmarked with unit costs for similar schemes from the wider industry.

We note an error in the Ofwat model which assumes that there are two WFD schemes in our Bristol Water area. Our previous response to Ofwat query OFW-OBQ-SBB-029 confirmed the number of WFD schemes in Bristol Water as 5, meaning that the unit cost reported in the PR24-DD-W-Water-Framework-Directive model for Bristol Water is currently incorrect. **Our recalculation shows the unit cost of the 5 schemes as £0.527 M, lower than the unit cost value of £1.318 M reported in the Ofwat feeder model.**

We believe that we have demonstrated existing efficiency within our business plan values for the WFD schemes, highlighted by contrasting our unit costs with the wider industry and detail of our internal efficiency challenge. Our business plan costing was assured and scheme specific, and we have demonstrated concerns with the enhancement model utilised for WFD schemes. Our representation provides evidence to support Ofwat returning allowances for WFD schemes back to our original business plan values during final determination.

Figure A4 and A5 Summary of Ofwat's unit cost per action benchmarking





Water WINEP Investigations

Table 7.16 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass

Representation

- **For SWB, we are accepting the Draft Determination value of £13.51 M, whilst highlighting specific anomalies in the way the OFWAT WFD Investigations feeder model has been applied.**
- **For Bristol Water we are accepting the Draft Determination value of £6.337M, whilst highlighting the significant reduction of 37% in one complex Investigation.**
- **Our representations respond to Ofwat's challenges on the efficiency of costs.**
- **We provide evidence for the potential uplift, including confirmation of the total number of discrete investigations prior to Draft Determination; and a re-estimation of costs using Ofwat's unit cost model.**
- **We are not making a representation on the water WINEP investigations PCD.**

Table 7.17 Representation PR24-DD-W-Investigation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	15.41	13.51	-1.90	0.00	13.51
BRL	1.98	6.34	4.36	0.00	6.34
TOTAL	**17.39**	**19.85**	**2.46**	**0.00**	**19.85**

Here we provide representations against Ofwat's decision to challenge the efficiency of costs for our water investigations.

The following appendices were provided at Business Plan Submission and should be referenced:

- SBBDD57_L5_CEAPP_SWW_Revised_PR24_DD_W-Investigations_Ofwat_Model
- SBBDD58_L5_CEAPP_Impact_to_BRL_Investigation_08M100152
- SBBDD40_L5_CEAPP_WR_WINEP_Investigations_impacted_by_aggregation

Cost efficiency

Ofwat have introduced a 12% efficiency challenge against SWB's Water Resources Investigations expenditure allowances. Ofwat have awarded a 210% increase in allowances for BRL.

For SWB, Ofwat's Investigations feeder model only provides allocation for the completion of 37 separate Investigations, whilst the SWB regulatory commitment requires the delivery of 74 separate Investigations. The South West region WINEP Investigations programme structure was requested by, and subsequently agreed with the Environment Agency. Concerns about the number of OAR (Options Assessment Reports) required for PR24 led to agreement that multiple standalone investigations with similar drivers and outcomes would be 'bundled' onto singular Action IDs and segregated by Action Components (a, b, c, d,...etc).

The SWB response to OFWAT Query OFW-OBQ-SBB-166 confirmed the structure of SWB's Investigation programme. Our query response clearly states i) the total number of standalone Investigations as 74, and ii) the SWB RES1 tab represents the numbers noted in the response to i). There is no scope for further efficiencies across these investigations, they are all standalone workstreams and as such each component should be treated as an individual investigation.

The aggregation of Investigations in the OFWAT feeder model outlined above has resulted in:

- £4.16m reduction (81%) for 16 Environmental Destination Investigations
- £1.59m reduction (55%) for 17 WFD Investigations

A full breakdown of the aggregation of Action Components into Actions is provided in SBBDD40_L5_CEAPP_WR_WINEP_Investigations_impacted_by_aggregation.

As each individual Action Component represents a separate Investigation, the aggregation of Action Components within the OFWAT Investigations feeder model is not appropriate.

The SWB reductions outlined above are all significantly higher than the standard ~20% reduction in allowance seen across the wider programme and are not comparable with the allocations applied to other water companies with similar Investigation programmes. For example, SWB have been awarded the lowest average allocation per Environmental Destination Investigation (£0.061m) despite having to deliver the second highest total number of ED Investigations (17no.), due to the high number of discrete catchments in the South West area. Further details are provided in SBBDD40_L5_CEAPP_WR_WINEP_Investigations_disproportionately_impacted.

The Draft Determination position will mean that our Investigations programme is undeliverable, either in its entirety or to the standard required to meet company and regulator ambition.

We have completed detailed analysis of the PR24-DD-W-Investigations feeder model, revised the investigation numbers from 37 to 74 and subsequently applied the OFWAT median average unit cost adjustment to the revised figures (SBBDD57_L5_CEAPP_SWW_Revised_PR24_DD_W-Investigations_Ofwat_Model). For the SWB Investigation programme, this would result in an allocation uplift from **£13.51 M** (DD Allocation) to **£29.37 M,** bringing us in line with the industry average allocation adjustment applied to other companies.

We have agreed the removal of two Water Resources Investigations from the WINEP programme with the Environment Agency, Action ID 08SW100050 components c and d. These components had a total business plan value of 0.323 M. Due to the aggregation of these investigation components into a single Action ID within the investigations feeder model we have assumed no change to the final representation value following removal of the two components; our final representation value is £13.513 M. Note that whilst there is a strong case for representation bringing the total allocation for the Investigations programme to **£29.37 M**, in line with the allocations awarded to other companies via the industry median average adjustment and based on our total number of investigations, we have elected to accept the Draft Determination value of **£13.51 M**.

For Bristol Water, our approach to costing investigations for inclusion in the enhancement business case considered in detail specific requirements for each investigation. Averaging investigations of varying complexity and ambition across the industry does not allow for especially complex workstreams. Specifically, WINEP Investigation 08MU100152a (Bristol Water) which has been subject to a 37% reduction from £0.78m to £0.49m. Further detail is provided in SBBDD58_L5_CEAPP_Impact_to_BRL_Investigation_08M100152.

Despite the multifaceted and complex nature of the work required for this investigation, including complex model development and requirement for joint delivery and sign off with Wessex Water, we have chosen to accept the Draft Determination allocation for the Water Framework Directive Groundwater Investigation (08MU100152a). .

7.2 Wastewater Services

Table 7.18 SWB Net Zero and Environmental Gains Representation – Wastewater Services (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-WW-p-removal	119.03	108.66	-10.37	10.37	119.03	CWW3.64 CWW3.65 CWW3.67 CWW3.68
PR24-DD-WW-Nutrients-or-sanitary-dets-NbS	41.66	29.16	-12.50	12.50	41.66	CWW3.70 CWW3.71
PR24-DD-WW-Sanitary-parameters	40.36	22.70	-17.66	17.66	40.36	CWW3.73 CWW3.74
PR24-DD-WW-Septic-tank-replacements-treatment-solutions-and-flow-diversion	14.40	19.97	+5.57	-5.57	14.40	CWW3.91 CWW3.92 CWW3.94 CWW3.95
PR24-DD-WW-Growth at STW	34.40	28.11	-6.29	6.29	34.40	CWW3.153 CWW3.154
PR24-DD-WW-First-time-sewerage	33.58	12.18	-21.40	21.40	33.58	CWW3.159 CWW3.160
TOTAL	283.42	220.78	-62.65	62.65	283.43	

Overview: Wastewater Services

Our business plan set out the actions we will take to improve the health of rivers and coasts across our region. Most of our investment is focused on reducing the levels of phosphorus discharged to rivers at 34 wastewater treatment works. We are also delivering improvements at wastewater treatment works to accommodate population growth and delivering sewerage services to the Isles of Scilly.

As we do this, we are committed to working with nature and not against it. This is at the heart of our 'Green First' approach of always considering a sustainable, low carbon option for each and every intervention.

For nutrient reduction schemes, Ofwat said our plans were slightly inefficient when compared to other companies' plans. They propose to reduce the funding allowed for our phosphorus reduction schemes by 9% for conventional treatment, and by 30% for those to be delivered by nature-based solutions. Ofwat has challenged the need for investment in first time sewerage for the Isles of Scilly.

Below we provide representations to support the reinstatement of our business plan allowances for our wastewater services programme.

Phosphorus Removal

Table 7. 19 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Modelled challenge

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for grey phosphorus removal schemes from** £108.66 M **back to the original £119.03 M (business plan).**
- **Our representations respond to Ofwat's challenges on the efficiency of costs.**
- **We provide evidence, including commentary on Ofwat's approach to weighting and triangulation in their econometric model; and evidence of shortcomings in model application.**
- **We propose minor adjustments to the profile of outputs for the phosphorus removal PCD.**

Table 7.20 Representation PR24-DD-WW-p-removal (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	119.03	108.66	-10.37	10.37	119.03
TOTAL	119.03	108.66	-10.37	10.37	119.03

Here we provide representations against Ofwat's decision to challenge the efficiency of costs for Phosphorus Removal (P-Removal).

The following appendix is referenced in this representation:

- SBBDD59_L5_P_Schemes_Grey

Cost & Efficiency

Ofwat have assessed the costs for 'conventional' phosphorus schemes using econometric models set out in Feeder Model PR24-DD-WW-p-removal.

Ofwat's modelled allowance is based upon a 'triangulation' of four separate models. These models, based either on a scheme-level econometric assessment, are applied to both an historic data set (for previously approved P-removal schemes) and the AMP8 forecast dataset.

Ofwat apply equal weighting to the results of each model. This gives equal influence to each model and to each dataset used for the assessment. We consider this is inappropriate, as schemes in historic programmes of work are not representative of those comprising the AMP8 programme. Historic P-removal schemes have typically targeted larger sewage treatment works (as evidenced in APR tables, e.g.: 7F), and the achievement target concentrations have been less stringent than those proposed for the AMP8 WINEP. This is implicitly acknowledged by Ofwat, who have applied an adjustment to this approach and model to account for this, but we consider this has not appropriately reflected the modelling distortion.

We recommend that Ofwat reconsider their approach to the equal weighting of the model outputs to generate the totex allowance. Because of the shortcomings inherent in the approach, we contend that less emphasis should be placed on the historic model allowances. The differences in the outputs of the models used highlight the lack of accuracy evident when applied to the historic dataset, as shown by the wider efficiency ranges and lower R-squared values when compared to the forecast outputs. We suggest a 2:1 weighting in favour of the models constructed using forecast data would be more appropriate.

Our supporting evidence, outlined in document SBBDD59_L5_P_Schemes_Grey details our concerns and explains how an alternative calibration of the model would be more suitable. The impact of revising the weightings as suggested would be to lift our totex allowance (pre FS and RPE adjustments) from £108.66m to £119.03m. This takes into account a necessary correction to the Reconciliation Adjustment Factor.

Should Ofwat be unable to support our resubmission of the original costs, we have proposed an adjustment to the weighting of the model which, has the potential to overcome some of the concerns that we have regarding the tightening of permit limits and the increasingly complex nature of interventions.

Price Control Deliverable - Phosphorus removal (PCDWW10)

We are representing to correct an inappropriate double count in the outputs Ofwat has included against the Phosphorus Removal PCD for SWB. The number of phosphorus removal schemes have been double counted across Ofwat's AMP8 and Accelerated Delivery PCDs. We recommend that this double counting is corrected.

We note with some concern that the draft determination profile contains outputs from five sites which are covered by the Accelerated programme PCD (Accelerated infrastructure delivery project – Accelerated infrastructure delivery project: draft decisions - Ofwat Appendix 2 price control deliverables p.31). Further, two of these sites where alternatives to treatment are proposed (pump away or relocation of outfall) are excluded from this PCD (presumably since they are not 'treatment' solutions). Excluding those schemes which are covered by a separate PCD, this allows a total population equivalent served of 69,554, rather than the 112,350 included within the PCD spreadsheet. This shown in table 7.21 below.

Table 7.21 Population equivalent delivery profile

	Unit	2025-26	2026-27	2027-28	2028-29	2029-30
Cumulative % of PE delivered	%	0	5	35	65	100
Original DD pe profile	000 pe	0.0	5.62	39.92	73.03	112.35
Revised DD pe profile	000 pe	0.0	3.477	23.344	45.210	69.554

We are also concerned by the restrictions placed which discourage the flexibility required upon detailed design of the final solutions. We would welcome clarity of the process by which alternative solutions could be delivered to achieve the desired outcome without risking the penalties which appear to be associated with a change of solution.

We consider it appropriate for the design and incentives within the PCDs to recognise the continuing development of solutions throughout the delivery process. Thus, allowing for solutions which deliver greater value through greater benefits and wider asset solutions (such as rationalisation and development of sustainable nature-based solutions). Such benefits will only occur through the further development of the schemes which will establish the viability and deliverability of nature-based solutions. Such Innovations and development should be encouraged through the PCDs not dis-incentivised. We consider that in their current form that the design of the current PCDs creates an economic distortion which dis-incentivises nature-based solutions.

Nutrients or Sanitary Determinands Nature Based Solutions

Table 7.22 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Minor Concerns
Cost efficiency	Some Concerns

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for nature-based solutions for nutrient removal and sanitary determinands schemes back to our original business plan value of £41.66M.**
- **Our representations respond to Ofwat's challenges on the optioneering, and the efficiency of costs.**
- **We provide evidence, including an explanation of differential of costs for sanitary schemes versus the nutrient reduction schemes; and our assessment of the costs and benefits of different solutions.**
- **We are not representing against the nature-based solutions for nutrients and sanitary determinands PCD, but we do share some recommendations for the PCD.**

Table 7.23 Representation PR24-DD-WW-Nutrients-or-sanitary-dets-NbS (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	41.66	29.16	-12.50	12.50	41.66
TOTAL	41.66	29.16	-12.50	12.50	41.66

Here we provide representations against Ofwat's decision to challenge SWB's nutrients or sanitary determinands nature based solutions schemes on the basis of optioneering and efficiency. Ofwat have assessed these costs using a deep dive assessment.

The following appendix is referenced in this representation:

- SBBDD60_L5_CEAPP_Nutrients_&_Sanitary_(NBS)

Best Option for Customers

Ofwat state that they have minor concerns with our approach to selecting the best option for customers. Ofwat acknowledge that a number of options were costed and subject to comparison, and that there is a willingness to pay by customers for nature-based solutions. However, they express concerns that insufficient evidence was presented to show that the preferred options are the most cost-beneficial.

In our supporting evidence document SBBDD60_L5_CEAPP_Nutrients_&_Sanitary_(NBS) we provide further evidence of our approach to optioneering, including our appraisal of cost-benefit for these schemes.

The cost-benefit comparisons undertaken for the WINEP submission reflect the greater benefits of nature-based solutions and were used to encourage their inclusion in the enhancement business case. We believe our plans offer better cost-benefit outcomes than conventional treatment solutions. For the instances chosen, they also offer the lowest cost solution.

Nutrient reduction schemes, had they been included for a conventional solution, would have been awarded higher costs allowances. Nature-based solutions offer a considerable cost efficiency and should be promoted where suitable to be in the best interest of both customers and the environment. We present evidence for both the cost beneficial nature of these proposals, as well as the monetised environmental benefits.

Cost & Efficiency

Ofwat express some concern regarding the cost efficiency of our nature-based solutions for nutrients and sanitary determinands. On this basis, expenditure allowances have been assessed at £29.16M, compared to the value of £41.66M submitted in our Business Plan. The adjustments applied by Ofwat through the deep dive reflects the level of cost uncertainty associated with nature based solutions and has been applied as an asymmetric downwards adjustment. Clearly the risk is symmetric and may be higher than those assessed by the company. Companies are already carrying the risk of overspending and uncertainty and so a further cost adjustment from Ofwat is a further disincentive for companies to apply nature based solutions. This does not align with the stated objectives in the WINEP from Defra, EA and earlier in the price review process, Ofwat.

Ofwat have requested additional evidence to support our approach to cost benchmarking for these schemes. They cite discrepancies between the costs of sanitary and nutrients schemes at similarly sized sites.

Our representation challenges the approach Ofwat has taken to management of the risk of providing nature-based solutions for nutrient and for sanitary treatment. Our view is that Ofwat's decision to use a subjective (deep dive) assessment, which relies upon a relative assessment of both quality and quantity of data, is somewhat disappointing, and we would have preferred to have had a modelled assessment.

Ofwat's analysis of our costs is based on a comparison of a wide range of outputs, from nutrient reduction to suspended solids or BOD removal, and applied across a diverse asset base. Costs associated with adding a tertiary reed bed to maintain lower levels of phosphorus in the effluent from a relatively efficient small-scale Sewage Treatment Works (STW) are not necessarily comparable to the costs of a reed bed. This is particularly the case where the reed bed supports an ageing descriptive STW to enable a step-change in treatment resilience for suspended solids and for BOD.

Price Control Deliverable - Nature based solutions for nutrients and sanitary determinands (PCDWW11)

We accept Ofwat's PCD for nature-based solutions for nutrient reduction and sanitary determinands.

However, we observe that the 'justification case' condition for this PCD, covering swaps of schemes and scope, creates a risk that we are unduly penalised via non-delivery payments. Swaps need to be agreed with the regulator. For example, a swap could occur where the Environment Agency and/or Natural England decide that the timing of a scheme (e.g. bringing forward from AMP9 to AMP8) should be changed due to new information. In such events, we are concerned that the undelivered scheme would be subject to a non-delivery payment, despite the change in timing being outside of our control.

We recommend that Ofwat provide guidance on how it would treat these types of changes in the end of period reconciliation.

Sanitary Parameters

Table 7.24 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Modelled challenge

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for schemes addressing sanitary parameters back to the original £40.36 M.**
- **Our representation responds to Ofwat's challenges on the efficiency of costs.**
- **We provide to support changes to Ofwat's econometric model for Sanitary Parameters.**
- **We are claiming an increase in the Draft Determination for the South West Region of £17.66 M.**
- **We are not representing against the treatment for tightening sanitary parameters PCD, but we do share some recommendations for the PCD.**

Table 7.25 Representation PR24-DD-WW-Sanitary-parameters (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	40.36	22.70	-17.66	17.66	40.36
TOTAL	40.36	22.70	-17.66	17.66	40.36

Here we provide evidence against Ofwat's decision to challenge the efficiency of our Sanitary Parameters schemes.

The following appendices are referenced in this representation:

- SBBDD61_L5_CEAPP_Sanitary_Determinands

Cost & Efficiency

Although Ofwat undertook comparative modelling at both a Company-Level and at a Scheme-Level, and despite their own stated preference to use Scheme-Level data, in this instance, Ofwat have chosen to proceed with Company-Level assessments.

We challenge the assumptions of this approach, which runs counter to Ofwat's own implicit preference, and does not follow the approach taken for similar interventions (for example, nutrient reduction), where a scheme-based assessment has been followed.

SWB are further disadvantaged by having a disproportionately smaller asset base (as evidenced in the feeder model) in this round of assessment. The regression 'curve' analysis is disproportionately skewed by companies with investment plans at larger facilities. Unable to take advantage of the economies of scale afforded to these other companies, SWB are unfairly penalised by the inherent uncertainties at the lower end of the regression. Our appendix document SBBDD61_L5_CEAPP_Sanitary_Determinands outlines in further detail the extent to which this has overlooked our position.

We recommend that Ofwat consider its own alternative model, which takes into account some of the scale and regionality issues which have been compounded in the company-level comparison.

Ofwat's preferred approach to the application of modelled allowances is to use scheme-level data wherever possible as this accounts for the differences in scale and the economies of scale associated. A Company-level model does not take these into account. Ofwat's approach to using scheme-level data is accepted as the most appropriate for the nutrients schemes, however this approach has not been considered by Ofwat as appropriate for the sanitary schemes, despite both models displaying similar R-squared values.

We believe that Ofwat should abandon the company-level model which they have applied in favour of the scheme-level model. We note that, following similar problems with modelling of sanitary parameters at the draft determination stage in PR19, company-level econometric modelling was abandoned in the final determinations (Ofwat, 2019) and companies were granted their requested totex in full (prior to the application of an 'in-the-round' challenge on WINEP schemes).

Our view is that the supporting evidence presented in SBBDD61_L5_CEAPP_Sanitary_Determinands is sufficient to justify the re-instatement of our full business plan allowance for sanitary parameters, of £40.36 M.

Price Control Deliverable – Treatment for tightening sanitary parameters (PCDWW12)

We Accept Ofwat's PCD for treatment of tightening sanitary parameters.

We have some concerns, however, about the ability for the programme as a whole to flex as a result of changing priorities or requirements. The ability to react to changing demands, whether in the type of solution most appropriate, or in the most beneficial location of the investment has been shown in previous investment periods to be invaluable.

We recommend that Ofwat provide further guidance on whether a net change from conventional solution to nature-based solution would be acceptable, or whether the balance between 'grey' and 'green' needs to be maintained.

Septic Tanks

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for responding to Septic Tank schemes back to the business plan value of £14.40 M.**
- **We have made the decision to forego the extra £5.57 M offered by Ofwat.**
- **We propose that Ofwat adjusts the non-delivery penalty rate for the septic tanks replacements PCD schemes so that they match expenditure.**

Table 7.26 Representation PR24-DD-WW-Septic-tank-replacements-treatment-solutions-and-flow-diversion (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	14.40	19.97	5.57	-5.57	14.40
TOTAL	14.40	19.97	5.57	-5.57	14.40

We asked for £14.4m for the improvements required to meet new UWWTWE regulations regarding the discharge of septic tank effluent to freshwaters.

Ofwat have modelled this and have adjusted our allowance to £19.97m. This allowance is £5.57m greater than the funding requested in our plan.

We have made the decision to reject this adjustment. We consider that our original plan was well costed and offers the best value for customers in our area. Ofwat's econometric model may have overestimated the costs associated with this for our programme. Ofwat's model, a linear regression based upon the population affected, has a low r-squared value (0.3365) which suggests that it is not adequately accurate. We are confident that we can deliver for the original amount.

Price Control Deliverable – Septic tanks replacements or flow diversions (PCDWW15)

We are proposing an adjustment to Ofwat's PCD non-delivery payment rate for Septic Tanks. Ofwat's non-delivery penalty of £1.7637m per scheme creates a total potential penalty of £19.4007m, which is in exceedance of our forecast costs for the programme. We request Ofwat to re-set the non-delivery penalty for these to £1.2727m per scheme to maintain the balance of risk for these schemes.

Growth at Sewage Treatment Works

Overview

Table 7.27 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass

We are representing against this feeder model:

- PR24-DD-WW-Growth-at-STWs.xls.

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for Growth at STWs from £28.12 M (Draft Determination) to £34.4 M (Business Plan).**
- **Our representations respond to Ofwat's challenges on the best option and efficiency of costs.**
- **We provide evidence, including:**
  - **Specific costed growth schemes with detailed solutions**
  - **Specific evidence of moving costs for new Saltash to AMP8**
  - **Past non delivery can be attributable to events beyond the control of water company**
- **We propose a minor adjustment to the 'added process capacity in population equivalent' data used by Ofwat to calculate the non-delivery payment rate for the growth at STW PCD.**

Table 7.28 Representation PR24-DD-WW-Growth-at-STWs (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	34.40	28.12	-6.28	6.28	34.40
TOTAL	**34.40**	**28.12**	**-6.28**	**6.28**	**34.40**

Here we provide representations against Ofwat's decision to challenge the efficiency of our proposed expenditure on growth at sewage treatment works.

Past Delivery Adjustment

Ofwat have reduced our expenditure allowance for growth at sewage treatment works on the basis of past non delivery. Here we provide information to support £6.28 M of enhancement funding, bringing our total enhancement expenditure for growth at sewage treatment works to £34.40 M, our business plan level.

Ofwat has calculated that we invested only 44% of the funding allowed in AMP6 and AMP7, this places us ninth out of ten WASCs. A 50% adjustment on the value of the calculated underspend was applied to our modelled allowance. Ofwat have advised that there is an error in this calculation which will be revised at Final Determination. Recalculating with the correct value for PR14 requested funding the adjustment would be -£8.58M not -£16.44M. We believe that when the calculation is revised it will show that SWB have invested c60% of funding allowed and are seventh out of ten WASCs.

Our representation is that our PR24 plan for growth at STWs is focussed in only three areas, Cullompton, New Saltash and Countess Wear where the need, the options and the costs and solutions are clear and well understood. This will ensure minimal difference between PR24 funding and investment in AMP8. We have moved away from generic non specified funding for Growth at STWs, where site needs and solutions are defined in AMP. This greater transparency can allow Ofwat and other stakeholders such as Local Authority Planning Teams to understand the detail of our plans for Growth at STWs. This transparency is possible through our Drainage and Wastewater Management Plan (DWMP) processes and outputs.

We proposed expanding the treatment capacity at Ernesettle STW in AMP7 to manage growth, however, this solution was not technically achievable, so we developed a new solution to split the Ernesettle catchment and build the new Saltash STW instead. Investment began in AMP7 on the land acquisition and planning for the new site, but the property development did not progress at the rate anticipated. We now propose to utilise the remaining funding from AMP7 (£9.3M) in AMP8, to supplement the funding requested at PR24 for new Saltash (£13.467M), thereby ensuring that customers are not being asked to support elements of this investment in PR24, that have already been funded through the PR19 and AMP7 process.

Price Control Deliverable - Growth at Sewage Treatment Works (PCDWW27)

We are proposing a minor adjustment to the 'added process capacity in population equivalent' data used by Ofwat to calculate the non-delivery payment for this PCD. We have identified a double count of "Added process capacity in PE" for the modelled schemes in the draft determination PCD model for growth at STWs. We have updated this data in data table ADD19 in our Draft Determination representation. Therefore, we ask that the PCD for modelled schemes, particularly the "Added process capacity in PE", is updated to reflect this change.

First Time Sewerage

Overview

Table 7.29 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Some Concerns
Best option for customers	Some Concerns
Cost efficiency	Some Concerns

Representation

- **Our response to Ofwat's Draft Determination brings the total enhancement costs for responding to FTS schemes back to the business plan value of £33.58 M.**
- **Our representations respond to Ofwat's challenges on the need for investment, optioneering, and efficiency of costs.**
- **We provide evidence, that:**
  - **The assumption of uptake by residents is robust and is based on the applications received from the Duchy of Cornwall,**
  - **The first time sewerage proposals are best value for customers based on the optioneering undertaken and cost breakdown provided,**
  - **The econometric model does not account for scale and complexity of works required in the Isles of Scilly,**
  - **The econometric model does not account for the cost of delivery in an island environment.**
- **We are not making a representation against the first time sewerage PCD.**

Table 7.30 Representation PR24-DD-WW-First-time-sewerage (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	33.58	12.18	-21.40	21.40	33.58
TOTAL	**33.58**	**12.18**	**-21.40**	**21.40**	**33.58**

The following supporting appendices are referenced in this section:

- SBBDD67,85-88_L5_CEAPP_ First Time Sewerage

Need for Investment

Ofwat have challenged our expenditure allowances on the basis of need for investment. Here we provide evidence of the need for investment.

Our first-time sewerage investment includes funding for first time sewerage (FTS) in Isles of Scilly and Devon and Cornwall. The development needs in Devon and Cornwall are valued at £0.976 M totex, aligning with previous FTS investment in the SWB operational area in AMP5 and AMP6.

The significant uplift in our investment in first time sewerage is a consequence of the variation in SWB's license to operate on the Isles of Scilly.

Ofwat have stated that their detailed engineering assessment raised concerns over the assumption on uptake of the schemes from residents on the Isles of Scilly. Ofwat has not shared their detailed engineering assessment, so we are unable to assess how Ofwat reached their conclusion on likely uptake. On the mainland, the s101A duty on sewerage companies has been in place since 1996 and we note that uptake was strongest in the early years (AMP3 and AMP4). Since then, there has been a gradual reduction in the number of applications and schemes as long-standing environmental and amenity problems associated with deteriorating or unsatisfactory private drainage systems have been addressed. We believe that any assessment of the likely rate of uptake on the Isles of Scilly is not comparable to current rates of uptake on the mainland, rather on rates that were seen in England when the duty was relatively new. This is because s101A duty is a completely new opportunity for island residents, becoming available for the first time on 1 April 2025 under the conditions of the The Isles of Scilly (Application of Water Legislation) Order 2019.

The islands thrive on tourism and the attraction of the Area of Outstanding Natural Beauty (AONB) and the unspoilt environment is at the heart of the island's economy.

Of the five inhabited islands, Bryher, St Agnes and St Martins have no common wastewater network, and St Marys (the largest island) has a wastewater network covering a large proportion of the population, but only covering a small geographic area of the island. Tresco is the exception, where almost all properties on the island are connected to the wastewater network. There is considerable pent-up demand for wastewater services on the three off-islands and parts of St Marys in order that the islands operate to modern day standards.

The need for investment is evidenced by the FTS requests already received from the Duchy of Cornwall shown at appendix SBBDD67,85-88_L5_CEAPP_ First Time Sewerage. The Duchy are the sole property and landowner on the off-islands. The Duchy provided sound reasoning for the application for FTS for their properties on behalf of their long- and short-term tenants. The applications have been shared with Ofwat as part of our response to Query 263 and are appended to this document. We understand that the Duchy intends to make their own representations on this matter directly to Ofwat.

The Duchy recognise that some of the existing infrastructure (septic tanks etc.) are in a poor state of repair and they are supporting their tenants with this to protect the environment and groundwater quality in the short term. Investigations into groundwater quality on two islands, carried out by EA in 2016-17, provide evidence of groundwater contamination from these failing septic tanks and other wastewater infrastructure. While the lack of an appropriate driver category meant that the Environment Agency could not accept this investment in the WINEP, local EA colleagues in the Integrated Environment Planning team for Devon, Cornwall and The Isles of Scilly, are extremely supportive of the principle of first-time sewerage schemes on these islands.

Areas of the main island, St Marys, outside of the settlements of Old Town and Hugh Town, rely on private treatment. General Binding Rules define the standards required for small sewage discharges (SSDs). Many tenants and homeowners are now encountering issues with compliance with General Binding Rules, now that they apply and are being enforced on the islands. This has resulted in further interest in connecting to the existing network on St Marys from April 2025.

We have already received expressions of interest in first time sewerage from residents on St Marys, and their planning consultants. We expect to receive considerably more interest in the future as new connections start to be made and compliance with General Binding Rules is required across the islands.

The legislation enacted for the islands in 2019 placed a time limited restriction on FTS (Section 101A) and other new connections until 01 April 2025. Requests for FTS and new connections will therefore increase from April 2025 when the restriction on new connections is lifted.

The principles of significant First Time Sewerage on the Islands were Identified and set out in the original ten year plan for the islands between 2020-30. The legislation for the islands supported the application of FTS schemes beyond 2025 and so this is explicitly expected. Ofwat as well as Defra and the EA were closely involved in the development of this plan prior to transfer. We had hoped that Ofwat would be more supportive of this requirement in PR24.

South West Water is required to deliver FTS schemes on the islands, as defined by the legislation, for the applications already received from the Duchy of Cornwall and those still to come from individual homeowners and businesses on St Marys. The need for the Investment is clear and defined and should be appropriately funded so that the company can finance its function to deliver First time Sewerage on the Islands.

Best Option for Customers

The option presented is the best for residents and future customers on the Isles of Scilly.

Our Enhancement Business Case for FTS listed the four options considered and how these options were assessed. Our preferred option is designed to provide a sustainable and reliable wastewater service, to ensure full compliance with the Urban Wastewater Treatment Regulations 1994 (UWWTR) and meet the requirements of Government Policy on small sewage treatment discharges (SSDs) to surface waters.

Ofwat have challenged our expenditure allowance with concerns expressed of our approach to optioneering for these schemes. These are addressed below.

The first step in our optioneering process was to assess the need and options, the outputs of that process are shared below:

Table 7.31 First stage of optioneering for FTS: Option assessment

Description	Assessment	Decision
Do Nothing	Increased environmental risk, groundwater risks,	Reject
Renew existing septic tanks	Environmental and groundwater risks remain	Reject
New network and SPS, with screening or septic tank discharge to surface waters	Septic tank discharge to surface waters does not meet Government Policy or UWWTR requirements	Reject
New network and SPS, with secondary treatment and sea outfalls	Provides environmental improvement, protection of groundwater and meets Government policy and UWWTR requirements	Progress

The requirement for investment for new networks and sewage pumping stations, with appropriate treatment (secondary) and sea outfalls was progressed to investigate technology and treatment options.

Table 7.32 Second Stage of optioneering for FTS: Appropriate treatment option feasibility assessment

Description	Assessment	Decision
Bio-bubble package plant	Small foot print, resilient, consistent operation with other WWTW at St Mary's, low sludge production	Proceed
Rotating biological contactor	Unfamiliar to local teams, less resilient, does not perform well with saline intrusion	Reject
Reedbeds	Large footprint, not suitable for rocky locations	Reject
Submerged aeration filter	Large foot print, higher sludge production, high power due to high aeration	Reject

Improvements under the FTS programme are designed to provide a reliable wastewater service and to ensure compliance with the Urban Waste Water Treatment Regulations 1994 (UWWTR). The proposed solution will also need to satisfy the requirements of Government Policy on small sewage treatment discharges (SSD) to surface waters.

We concluded that to fulfil this requirement, it will be necessary to install secondary treatment on Bryher; St Agnes and St Martins and to connect properties to a suitable wastewater treatment facility, with sufficient treatment capacity on St Mary's. Construction of sea outfalls to discharge treated final effluent will also be needed to convey the treated wastewater to an appropriate location.

Cost Efficiency

Ofwat have reduced our expenditure allowances for first time sewerage from £33.58m to **£12.18 M** on the basis of cost efficiency.

Ofwat used an econometric model to assess the efficiency of costs for first time sewerage (PR24-DD-WW-First-time-sewerage.xls). The model used is reliant on three cost drivers; number of properties, number of schemes, and number of properties squared. The number of properties is the only variable that has a material impact on the model outputs for the majority of WASCs.

Ofwat has not excluded WASCs from the analysis on the basis that they did not request funding for first time sewerage. Excluding WASCs that did not make a request for FTS would have reduced the current wide range of efficiency scores (-100% for YKY to +171% for SWB), which makes our request appear inefficient when compared to other WASCs. Ofwat acknowledges that a wide range of efficiency scores can be indicative that the modelling ignores unique cost drivers. We are of the view that examples of unique factors include higher individual scheme costs and additional costs associated with the challenge of working in an island environment.

At PR19 (see appendix SBBDD67_L5_CEAPP_IoS_Business_Plan_PR19), SWB committed to delivering a step change in compliance and resilience over a ten-year period, of which this is part. A cost adjustment claim (special cost factor) was agreed with Ofwat for the Isles of Scilly at PR19 to reflect the high unit costs of investing for compliance and resilience, an extract of which is provided at appendix SBBDD88_L5_CEAPP_SWW cost adjustment claim. However, no acknowledgment of these additional costs of working on the islands has been reflected in the PR24 draft determination. Ofwat have paradoxically indicated that for PR24, costs should be aligned with mainland costs. We respectfully submit that none of the issues which Ofwat supported In PR19 have changed. Additional costs associated with working with island communities have not been overcome, and shipment and trans-shipment costs both to the island group, and between the islands is still a complicated and fundamentally unresolvable problem, heavily influenced by seasonality, weather, tides and resource availability. The full claim value of £41.3M (price base date 2017/18) was fully accepted by Ofwat in the PR19 Final Determination. As Ofwat accepted, at PR19, that there were additional costs for investment and operation on the Isles of Scilly in AMP7, it seems an inconsistency in Ofwat's thinking that this is not the case at PR24.

Investment in FTS on the Isles of Scilly will require an atypical large, one-off investment to provide a service previously unavailable to residents. These costs would not be included in our modelled baseline as such modelling only project a 'business as usual' baseline. The provision of FTS on the Isles of Scilly is also not currently part of SWB's undertaking under the The Isles of Scilly (Application of Water Legislation) Order 2019 and thus has never been incorporated into SWB's historical cost base. Econometric models are only designed to capture a 'business as usual' level of expenditure. We contend, therefore that the standard econometric model is not applicable in this circumstance.

At present, the expenditure we would expect for FTS in Devon and Cornwall would not be adequate to deliver the new FTS assets on the Isles of Scilly. FTS on the mainland in Devon and Cornwall usually comprises laying new sewerage networks with pumping stations to convey wastewater to the existing network and then treatment facilities. This is not the case on three off-islands where new treatment facilities and marine outfalls are also required, which significantly increases the TOTEX for each scheme compared to the equivalent sized scheme on the mainland where connection would be to an existing treatment facility.

Our cost breakdown for the preferred solutions, by island, is shown in Table 7.33 below:

Table 7.33 AMP8 preferred option by island

WWTW catchment	Design Population Equivalent	2030 permit conditions (assumed)	Description	Post-efficiency Capex £m	Opex £m p.a. AMP8
Bryher	435 2040 horizon	TSS 60 mg/l BOD 40 mg/l Daily flow 87.06 m3/d	3.2km gravity, 1.8km rising main 5 SPS 1 bio-bubble package plant WWTW 0.3km sea outfall	7.533	0.056
St Agnes	336 2040 horizon	TSS 60 mg/l BOD 40 mg/l Daily flow 67.2 m3/d	2.9km gravity, 1.7km rising main 5 SPS 1 bio-bubble package plant WWTW 0.3km sea outfall	7.093	0.052
St Martins	471 2040 horizon	TSS 60 mg/l BOD 40 mg/l Daily flow 94.2 m3/d	3.85km gravity, 2.15km rising main 6 SPS 1 bio-bubble package plant WWTW 0.4km sea outfall	8.983	0.067
St Mary's	Accommodated within AMP7 investment at St Marys WWTW	Based on AMP7 permit process (ongoing)	13.80km gravity, 4.10km rising main 9 SPS 2.0 km long sea outfall	8.767	0.065

This shows that the scale of investment required goes beyond simply laying gravity sewers and rising mains but encompasses treatment options and outfall construction, all of which is deliverable within existing communities with significant population variation (summer/winter) due to tourism.

The Isles of Scilly's remote location means that costs associated with materials, equipment, and personnel are significantly higher.

The main challenges arise from the following:

- Access: All plant, equipment, materials and personnel must be transported firstly to the main island (St Marys) and, when required, shipped from St Marys on to the more remote off islands by boat. This is further complicated as transportation of workforce, materials etc. is dependent on tides, weather conditions and the availability of local transport by small boat.
- Timing: The islands are home to an established community and businesses. Introducing first time sewerage systems will be acutely disruptive in the constrained island environment, with construction work, road closures, and quality checks all having a direct impact on residents and businesses across the islands. The importance of summer tourism on the island means that most activities would need to be completed during the winter period when weather conditions will be at their worst for travel and transportation. Delivery will also be constrained to shorter time and weather windows, incurring additional costs of repeated mobilisation.
- Resources: There are also limited support resources, as the small communities do not warrant investment in large plant and machinery which could be hired, e.g. crane hire is not available and therefore any such equipment must be transported to and from the mainland. There are also few indigenous supplies of building materials, and Aggregate, cement and almost all other materials must also be shipped to St Marys and then onward to each individual island;
- Geology: The islands are comprised predominantly of granite, with very thin or non-existent soil layers; excavation for sewer and manhole laying is disproportionately difficult and costly;
- Sensitivity: The islands are considered an Area of Outstanding Natural Beauty and there are many sites with site of special scientific interest (SSSI) status. This is not atypical for our region, but in the confined island setting it can make land acquisition and access rights significantly more costly and time consuming.

An example of the cost differences on the islands, is the ongoing project to lay 1360m of a dual trench, for 50mm and 110mm diameter potable water pipe between Middle Town and Higher Town on St. Martins. The cost for the scheme is £1.3M, which equates to £987.67 per metre, which has been tendered across three of our framework delivery partners. The equivalent cost for the same scheme on the mainland would be £0.701M, which is equivalent to £515.57 per metre. The cost differential on the islands therefore, being a 92% increase on mainland costs.

These costs disproportionately high due the need for separate accommodation, travel to the islands, transport of materials to the island, increase in fuel costs as well as the need to hire landing craft to the off islands from Penzance. Additional costs are also incurred on the islands with regards to land entry. On the mainland, we can utilise our statutory powers for land entry, but these powers are not available on the islands which can lead to further time and cost delays beyond what would typically be seen on the mainland.

Similarly on operating costs, we continue to see a disproportionate cost differential on the Isles of Scilly where the annual cost of operations is c.8 times more per customer than in Devon, Cornwall and Bournemouth, and separately within Bristol. We have not provided a special base cost claim for in this regulatory period, however as the operations expand with more customers connecting to the network, greater investment (across water and wastewater) and increased demand from tourism, this may be reviewed at PR29 when the costs of the expanded operations are fully known.

We recommend that Ofwat revise the modelled approach taken to this first time sewerage request and acknowledge the unique nature of the need and the additional costs this requires for PR24 Final Determination.

Wastewater Investigations (WINEP)

Table 7.34 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass

Representation

- **We accept the Draft Determination for Wastewater Investigations.**
- **We propose adjustments to Ofwat's non-delivery payment rate for the wastewater investigations PCD.**

Table 7.35 Representation PR24-DD-WW-Investigations (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
WINEP investigations (Nutrients)	2.53	2.53	0	0	2.53
Other investigations	0.37	0.37	0	0	0.37
Total	**2.90**	**2.90**	**0**	**0**	**2.90**

Price Control Deliverable – Wastewater Investigations (PCDWW18)

We propose adjustment to Ofwat's non-delivery payment rate for this PCD. Ofwat have taken the total cost of the investigations and divided by the total number of investigations and come up with an 'average' penalty. We recommend that payments are tied to the value of each scheme, rather than the average scheme value. This will ensure companies have strong incentives to deliver both large and small schemes.

We are making a representation against the WINEP regulator sign-off condition applied to this PCD. This condition ties in the PCD to the investigations being signed off within the same year as the proposed delivery of these investigations to the regulator. This is a problem as there are significant concerns surrounding resource availability and prioritisation from both the Environment Agency and Natural England, and their ability / willingness to effect such sign-off potentially within a short window of the investigation being completed. We therefore propose that some form of grace period, or an acceptance of the limitations of third-party involvement could be included in the mechanism for assessment to prevent us from being unduly penalised for late sign-off due to lack of third-party resource.

The current proposals for the Delivery Monitoring Framework (DMF) with the Environment Agency have indicated that the EA may only review 10% of schemes in detail. As such, not all schemes will individually be reviewed by the EA. It is therefore important that the PCD framework aligns with the DMF process at Final Determination.

7.3 Bioresources

Currently, the majority of bioresources produced by water and sewerage companies is recycled to agricultural land, a process regulated under the Farming Rules for Water and the Biosolids Assurance Scheme.

A significant benefit of bioresources is the opportunity for energy recovery from the anaerobic digestion of this organic material. We already extract energy from around 20% of our bioresources with the biomethane produced in this process being used to generate green energy in the form of electricity, which can be used to offset the energy that we use on our operational sites.

Our preferred strategy for 2025-2030 was to build on this position by moving to a new, more efficient treatment process - Advanced Anaerobic Digestion (AAD). We could utilise this process for 100% of our bioresources, maximising the potential energy recovery, with a significant reduction in our carbon emissions (11,905 tCO_2 e) achieved by our transition to AAD with its greater biomethane yields.

Further benefits of AAD included the more complete breakdown of the volatile matter in the bioresources which generates more biomethane and significantly reduces the volume of waste product left at the end of the process. This in turn reduces the onward transportation costs.

The AAD process changes the nature of solids produced making a higher quality, more manageable, more consistent and stackable product that can be used for a wider range of crops than our current treatment processes.

We were conservative around placing the full strategy in our original business plan submission as some of the costs associated with Farming Rules for Water and Appropriate Measures were not clear at the time and there was also a lack of clarity around the overlap between enhancement and capital maintenance investment.

Our business plan sought **£271M (£128M enhancement and £143M maintenance)** to deliver our "maintain and comply" strategy covering maintenance costs, growth and enhancement associated with IED and WINEP Storage+ options.

Ofwat have stated in their industry wide approach that AAD solutions would not be supported from Enhancement within the PR24 methodology. The DD also states that there is a sharing mechanism for Bioresources such that where companies spend exceeds their allowance, this is recoverable from customers on a 50/50 basis.

In our Business Plan we submitted *enhancement* expenditure of **£128.04M** for Bioresources. Ofwat's Draft Determination adjusted our allowance to **£59.30M**. This adjustment will mean the costs of achieving IED are not fully funded, nor are we able to support growth in the region for bioresources. Our representations provide evidence to support total expenditure allowances of **£107M**. This will ensure that we will be able to deliver on our commitments to customers and to the environment.

Our PR24 Business Plan submitted *base cost* allowances of **£143M** for Bioresources (CWW2.14 & CWW2.17).

Challenges have been made to our plan based upon the following:

- No funding has been allowed for Landbank mitigation and ATC trials (£-36M);
- IED costs at Hayle and Countess Wear have been reduced (-£13M);
- Growth costs have been removed from Enhancement and modelled alongside Maintenance (net £-7M);
- Our Cost Adjustment Claim for Liming has not been funded (£-48M); and
- Our enhancement business case has been reduced by -£56m and there has been no recognition of the Cost Adjustment Claim (-£48M).

Ofwat have challenged our approach to the cost adjustment case citing a lack of compelling evidence. Ofwat's base maintenance allowance increases from £143M to £155M however this also incorporates the £19M growth costs resulting in a net £7m reduction in net terms. We have made the decision to accept Ofwat's modelling adjustments for base costs. We are also representing on Ofwat's treatment of growth expenditure for bioresources.

Table 7.36 Bioresources Cost Allowances

Feeder Model	BP	DD	Difference	Representation	DD Response	Table Ref
PR24-DD-WW-Freeform	36.41	0.00	-36.41	0.00	0.00	CWW3.181 CWW3.182
PR24-DD-WW-IED-enhancement	47.14	33.99	-13.15	13.15	47.14	CWW3.183 CWW3.184
PR24-DD-WW-sludge-treatment-thickening	25.32	25.32	0.00	10.77	36.09	CWW3.145
Growth	19.17	0	-19.17	19.17	19.17	CWW3.164
Sludge storage – Cake pads/bays/other	0	0	0	4.60	4.60	CWW3.139
TOTAL	**128.04**	**59.30**	**-68.74**	**43.1**	**107.00**	

In our Business Plan we submitted a base cost adjustment claim for Bioresources Liming. We have made the decision to re-instate this claim and provide representations against Ofwat's decision at section 2.4 Base Cost Adjustment Claims.

Bioresources Growth

Representation

- **Our response to Ofwat's Draft Determination for Bioresources growth reinstates our original business plan position with £19.17m being separately assessed as enhancement and not modelled alongside base maintenance. This would bring the total enhancement expenditure for Sludge Growth to £19.17M.**
- **Our representations respond to Ofwat's challenges on the efficiency of costs.**
- We are requesting that Ofwat re-instate our requested enhancement allowances for bioresources growth.
- **We provide evidence to support our representations, including:**
  - **Explanation of the serious limitations of the modelled approach**
  - **SWB previous growth funding and sludge production**

Table 7.37 Representation (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	19.17	0.00	-19.17	19.17	19.17
TOTAL	19.17	0.00	-19.17	19.17	19.17

We submitted costs for bioresources growth of £19.17M in our PR24 Business Plan, through our Bioresource Enhancement Business Case (CWW3.164). Ofwat rejected this enhancement cost allowance on the basis that this was included in the Base allowance.

Ofwat have made the decision to include the investment required to meet the needs of growth as part of the econometric base models. This marks a distinct departure from decisions made in previous Price Review assessments and from their treatment in the Wastewater Network+ price control, where growth costs have been modelled separately from base maintenance at PR24 having previously been modelled together at PR19.

We recognise that the modelled approach accounts for the predicted increase in sludge yield and allocates an increased level of funding as a result. This approach, however, does not effectively and accurately support the requirements for investment needed to manage the growth in sludge within our region.

We submit a representation on the limitations in Ofwat's base cost modelling premise and provide additional evidence on the constraints in our current asset base' headroom to receive growth in sludge output.

Model Limitations

The model used by Ofwat does not account for the current levels of headroom which exist in the bioresources treatment capacity of WaSC assets, and the capacity that could have been funded in previous AMP periods.

The model assumes a linear investment need for the provision of sludge treatment capacity. In reality WaSCs will build additional treatment capacity when required, creating 'headroom' and this new headroom will then be eaten into over time, sometimes over several AMP periods. Sludge treatment assets are long term assets lasting generally 25 years+, and so the decisions are made periodically over multiple AMP periods as headroom is created and used up. Sludge treatment capacity may be installed at a regional level with sludge moved between local locations. The optimisation of the capacity is a regional process which balances supply demand on a weekly, monthly, yearly and five yearly planning basis.

Creating this capacity or headroom requires periodic step change investments to account for the capital investment for new assets/processes etc. New assets will only be required when this headroom has again been taken up by increased sludge production.

Investment for this growth investment will be intermittent and companies will therefore have AMP periods do not require growth CAPEX investment, and others where CAPEX funding is required. This is corroborated by a comparison between historical growth expenditure and planned growth expenditure for AMP8. It can be shown that companies which incurred growth costs over the last five years have no or limited growth plans for AMP8 while those that did not (or incurred relatively small costs), like SWB, need to invest in treatment capacity in WaSC assets as the current level of capacity has been reached.

Table 7.38 2018/19-2022/23 growth expenditure compared to AMP8 needs (£m)

Company	2018/19-2022/23	AMP8
WSX	7.0	39.6
SVE	1.4	47.2*
UUW	0.0	0.0
TMS	16.5	0.0
ANH	0.2	36.9
YKY	0.1	0.0
WSH	13.4	22.3
NES	0.0	0.0
SWB	0.0	19.2
SRN	16.6	0.0

*Post re-allocations to enhancement

A review of the draft determination modelled outputs appear to demonstrate that the model fails to account for this treatment of headroom and the episodic nature of investment, with five companies without a specific bioresources growth request (UUW, TMS, YKY, NES & SRN) appearing to receive additional funding of £87 M, yet companies that specified a need for growth investment (WSX, SVE, ANH, WSH & SWB) have been funded less than 17% of their needs.

We consider that the modelling does not align well with the real-life decision processes across multi-AMP criteria, and this results in rewards for companies are not seeking them and penalties where companies have done the right thing and deferred investment in previous prices controls. This model is acting as an economic distortion mechanism and disincentivises the economic and efficient management of the asset base.

Table 7.39 AMP8 requested expenditure compared to Ofwat's base cost allowances for growth (£m)

Company	AMP8 allowance for growth	Requested expenditure for AMP8
WSX	3.7	39.6
SVE	20.6	47.2
UUW	18.1	0.0
TMS	44.9	0.0
ANH	4.5	36.9
YKY	10.3	0.0
WSH	0.2	22.3
NES	4.2	0.0
SWB	-0.8	19.2
SRN	9.2	0.0

This anomaly appears to be caused by the econometric model taking past investment in growth as an indicator for future investment in growth, and the absence of growth as a driver in the past as an indicator that growth is not needed in the future. However, as explained above, the "lumpy" nature of investment in growth for bioresources would require the econometric model to operate in a very different way.

Need for Investment

SWB did not receive funding for bioresources growth schemes in AMP7 and instead has made the decision to maximise the throughput of its existing asset base. This has been the most economic option for customers historically.

During AMP7, we have seen an increase in sludge yield of 11% (APR data 19/20 to 22/23). Between 22/23 and 29/30 we forecast an increase of 21% in sludge production, and a 34% increase above 19/20 levels.

We forecast a continued increase in population growth within our region as a result of internal migration across regions. Our Business Plan submission provides forecasts for a 9.9% increase in connected properties between 22/23 and 29/30.

Ofwat have modelled growth in its base cost modelling, using the volume of sludge produced as a cost driver. While Ofwat's approach could be justified when companies' historical growth costs are broadly aligned with future growth costs, their approach is not necessarily appropriate for our AMP8 investments, which represent one of the periodic step-changes in investment. Ofwat's approach does not account for the 'on-off' nature of past growth investment in sludge treatment capacity. Besides the scale variable (the amount of sludge produced), there are no specific cost drivers in Ofwat's model which can directly capture the required level of growth expenditure required at any one time.

We have found that the performance of all models improves when growth expenditure is excluded from the analysis, which is quite intuitive as we remove the lumpy nature of these costs that remain unexplained by any of the cost drivers. Indeed, the R^2 improves, and the three density variables become statistically significant at the 1% level. This further justifies the exclusion of growth costs from the modelling.

The unevenly distributed nature of growth costs at sewage treatment works and the inability of any of the cost drivers to capture these requirements in the base cost modelling, has motivated Ofwat to undertake a separate assessment of these costs and to deviate from the approach taken in PR19. This was confirmed in the PR24 final methodology, and, ultimately reflected in the draft determinations (Ofwat, 2022).

> *We will consider separate assessment of wholesale network plus growth expenditure at PR24, which was supported by several companies in response to our draft methodology as they do not think the base cost models can accurately explain growth related costs.*

The situation is the same for bioresources growth costs, and even more pronounced as the volatility is greater than for growth at sewage treatment works. We request that Ofwat corrects this inconsistency at the Final Determinations and fund companies appropriately based on their expected growth expenditure over the course of AMP8.

We challenge Ofwat's approach to setting unit costs on the basis that growth expenditure across the industry has been asymmetrical and historical growth expenditure cannot necessarily be used as a good indicator of future requirements.

Landbank mitigation

Table 7.40 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Significant Concerns
Best option for customers	Some Concerns
Cost efficiency	Some Concerns

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for Landbank mitigation from **£36.41 M** (Business Plan) to **£4.60 M** but reallocates this funding to Sludge storage - Cake pads / bays / other; (WINEP/NEP) expenditure.
- Our representation responds to Ofwat's challenges on the **need** for investment.
- We accept the removal of the Advanced Thermal Conversion trial allowance of £31.82 M.

Table 7.41 Representation PR24-DD-WW-Freeform (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	36.41	0.00	-36.41	0.00	0.00
TOTAL	36.41	0.00	-36.41	0.00	0.00

We submit a representation against Ofwat's decision to challenge the need for investment in contingency arrangements to mitigate against the impacts of the proposed loss of the landbank available for sludge disposal.

Our representation accepts Ofwat's decision to remove funding for Advanced Thermal Conversion and re-allocates funding for strategic storage to data table lines CWW3.137-139.Ofwat's 'sludge storage' feeder model.

The following supporting appendices are referenced in this section:

- SBBDD89-91_L5_CEAPP_Bioresources
- SBBDD92-93_L5_CEAPP_ Bioresources

Need for Investment

Our PR24 Business Plan proposed two separate investment needs under the "Landbank Mitigation" category:

- Advanced Thermal Conversion (ATC) (10,000 tds/yr) for the risk of loss of landbank - £31.82m
- Strategic storage, i.e., the procurement of additional storage for treated bioresources linked to meeting requirements under the Farming Rules for Water- £4.60m

Ofwat have stated that the proposed investment in ATC at two sludge treatment centres was not approved by the Environment Agency through the WINEP.

We accept that this element of our PR24 Business Plan is not funded and that this risk will be adequately covered by Ofwat's proposed Landbank Uncertainty Mechanism Notified item.

The strategic storage element of this investment is linked to a different investment need, to provide additional storage for treated bioresources. This requirement is due to the implications of the Environment Agency's Farming Rules for Water, and the constraints in our region which apply to the application of treated bioresources to agricultural land. This investment need is supported by the EA (and Ofwat) as evidenced by the support of our Sludge storage - Cake pads / bays / other enhancement investment in the Draft Determination.

At SBBDD92_L5_CEAPP_STC Storage in Days, we show that we have very limited post treatment storage capacity, and this investment will provide the capacity for effective management of treated bioresources with additional new regional storage hubs. This will enhance our ability to store treated biosolids during adverse weather and will reduce the likelihood of this resource becoming non-compliant with the new regulations.

Ofwat did not provide any feedback on this element of the proposed investment.

Best Option for Customers

Ofwat's concerns were expressed solely in relation to the investment in ATC. We have accepted their assessment and the decision to not proceed with this investment.

The strategic storage element is linked to the EA WINEP Storage+ approach. We note that Ofwat have not expressed any concerns over this being the best option for customers. We have reviewed our current available storage and looked for pinch points in storage regionally. Our proposed solution is to increase storage at two sites with the addition of bioresources cake barns at Falmouth (1,800m^2) and Radford (800m^2) STCs. This will increase our storage time at these sites to nine months (or circa 270 days) each at their projected throughput by 2030. Further information is provided in SBBDD89-91_L5_CEAPP_Bioresources. These bioresources storage facilities will also act as strategic regional storage hubs, as required.

Sludge treatment - Thickening and/or dewatering; /WINEP Storage +

Table 7.42 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass
Best option for customers	Pass
Cost efficiency	Pass

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for Sludge Thickening/Dewatering schemes from **£25.32M** (Business Plan) to **£36.09M**.
- Our representation responds to Ofwat's challenges on the **need** for investment.
- We provide evidence, including:
    - Operating costs for the additional dewatering assets required to meet the Farming Rules for Water (FRfW) which have been supported by Ofwat in the Draft Determination in terms of CAPEX
- We are not making a representation against the sludge thickening and dewatering PCD.

Table 7.43 Representations PR24-DD-sludge treatment thickening (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	25.32	25.32	0.00	10.77	36.09
TOTAL	25.32	25.32	0.00	10.77	36.09

We provide representations against Ofwat's decision to challenge the need for investment in advanced anaerobic digestion treatment of sewage sludge in the South West region.

The following supporting appendices are referenced in this section:

- SBBDD69-70_L5_CEAPP
- SBBDD69_L5_CEAPP_Bioresources_Summary_Sheet_OPEX

In our Business Plan we included the CAPEX costs associated with this investment (additional dewatering equipment) but the associated OPEX costs were not included.

At the time of the PR24 submission, we shared our strategy to transition to Advanced Anaerobic Digestion (AAD), in AMP8. Ofwat did not support this transition under Enhancement Investment but advised that this transition should be managed through base funding. We recognise this position and are considering the delivery of our plans on this basis.

However, there is still a requirement for sludge dewatering which has associated operational expenditure. Had Ofwat supported our transition to AAD, the OPEX costs savings enabled through that transition would have meant that the additional OPEX for the sludge treatment thickening and/or dewatering investment driven by the WINEP would not be required. We did not include OPEX for Sludge treatment thickening and/or dewatering for this reason. We now request the additional OPEX for sludge treatment thickening and/or dewatering, as part of this representation.

With the Ofwat view that AAD would not be considered under an enhancement element we are now including the operational expenditure for Sludge treatment thickening and/or dewatering. The total OPEX requirement for the period 2027-28 to 2029-30 is £10.77 M, as described at appendix SBBDD69_L5_CEAPP_Bioresources_ Summary_Sheet_OPEX.

Industrial Emissions Directive (IED)

Table 7.44 Summary of Ofwat's Assessment of Our Business Plan

Assessment Criteria	Challenge
Need for enhancement investment	Pass/Minor Concerns/Some Concerns/Significant Concerns
Best option for customers	Pass/Minor Concerns/Some Concerns/Significant Concerns
Cost efficiency	Some Concerns

Representation

- Our response to Ofwat's Draft Determination brings the total enhancement costs for IED schemes from the Ofwat Draft Determination allowance of **33.99M** to **£47.14M (**Business Plan).
- Our representation responds to Ofwat's challenges on the **cost efficiency** of investment.
- We provide evidence, including:
  - Ofwat query and response 250 regarding secondary containment costs at Countess Wear STC
  - Revised secondary containment wall length for Hayle STC based on permit application of Jan 2024
- We recommend that treated dry solid throughput is a better metric for the IED PCD output rather than using number of sites.

Table 7.45 Representations PR24-DD-WW-IED (£m, pre FS and RPE, 2022/23 prices)

Feeder Model	BP	DD	Difference	Representation	DD Response
SWB	47.14	33.99	-13.15	13.16	47.14
TOTAL	47.14	33.99	-13.15	13.16	47.14

We submit representations against Ofwat's decision to challenge the efficiency of our investments in delivering against Industrial Emissions Directive requirements.

The supporting appendices referenced here are:

- SBBDD69-70_L5_CEAPP
- SBBDD92-93_L5_CEAPP_ Bioresources
- SBBDD89-91_L5_CEAPP_Bioresources

Need for Investment

We note that Ofwat have challenged the need for investment related to the provision of IED for Hayle through the modelled costing process and consider Countess Wear as an outlier site. Both sites operate above the regulatory limit for IED (100 Tonnes/day digester feed) and both sites have a design capacity greater than the regulatory limit for IED. We have engaged and continue to engage with Environment Agency regarding appropriate permit applications for both sites. The need for investment is therefore clear.

Cost & Efficiency

Hayle STC

Ofwat have developed and used an econometric model to determine the efficient costs for delivering the improvements required to meet requirements under the IED.

The most significant cost driver in the IED model is secondary containment. Ofwat have used the total length of secondary containment wall for modelled sites as the key explanatory variable in their model. Secondary containment volumes are based on the capacity of the tank they protect, therefore any changes in wall height will impact wall length to preserve the same volume of secondary containment.

Having reviewed the model for secondary containment and the allowances granted across the industry we believe that the model does not adequately reflect the complexity of this work and therefore the funding need across the industry. Evidence in our Appendix SBBDD93_L5_CEAPP_SWW IED Secondary containment cost - site specifics compared to modelled allowance demonstrates the disparity between funding requests and modelled allowances. Specifically, the modelled allowance for secondary containment at Hayle is only 16% of the funding requested, SBBDD91_L5_CEAPP_CET v3.026 Eng Hayle IED CEDAR v4 PR24 Submission ISSUED.

Table 7.46 Hayle Secondary Containment Requested funding and Modelled Allowance

Site	Funding request (BP) £m	Modelled Allowance (DD) £m	Difference
Hayle	9.352	1.542	-84%

The modelling approach, based on containment wall length, appears overly simplistic and does not consider site layout, volume of containment and nature of that containment. Our detailed engineering scoping and costing approach reflects the complexity and site-specific nature of IED investment. We believe that a detailed engineering assessment (deep dive) is the best approach for all IED cost assessments and that this approach should be applied for the Final Determination, SBBDD93_L5_CEAPP_SWW IED Secondary containment cost - site specifics compared to modelled allowance.

As the IED permit application is an ongoing process for SWB, we submitted a revised permit application for Hayle in January 2024. As part of the resubmission, the length of secondary containment wall was updated from 300m (as previously stated in our IED data submission of 20 December 2023) to 426m. This change was brought about by refinements to scope and greater clarity on the requirements of secondary containment through the regular meetings of the water industry IED Task and Finish Group, such as the maximum wall height of 1.5m for secondary containment under CIRIA 736.

We therefore request that, if Ofwat persist with the econometric modelling of the secondary containment, then we use the most up to date value for Hayle, and recalculate the modelled allowance on this basis, (updated cost driver details are included in ADD14).

Countess Wear STC

Ofwat consider that Countess Wear STC is an outlier for secondary containment within IED investment (linked to Ofwat Query 250). In essence, Ofwat's approach for outliers is to assign the secondary containment modelled value, plus 50% of the difference between the modelled value and the value requested in the business planning process. For Countess Wear this results in a reduction in expenditure allowances of -£9.965 M. We believe this simplistic approach does not adequately assess the complexities of outlier sites. Countess Wear has higher than anticipated costs due to a number of unique site peculiarities. Please see SBBDD70_L5_CEAPP_Countess_Wear_ investment_query_response in the appendices for more detailed information of the unique circumstances.

We note that there appear to be five sites across the industry that Ofwat have recognised as being outliers in terms of the costs of secondary containment. In these cases, Ofwat have reduced any costs over and above their modelled allowances by 50%, which results in a reduction of £9.965m for Countess Wear.

This approach doesn't appear to take any site-specific drivers for the outlier costs into account. In relation to Countess Wear this results in a level of funding that is insufficient to deliver the improvements required, SBBDD90_L5_CEAPP_CET v3.026 Eng Countess Wear STW IED Cedar TAP update Rev2 PR24 Submission ISSUED.xls.

This unique circumstance results in the outlier costs that formed part of our Appendix A submission. Ofwat's approach to outliers does not recognise these unique circumstances. We therefore request that Ofwat reconsider the approach taken to the Countess Wear funding in the FD and re-instate the full expenditure allowance requested for this scheme.

Price Control Deliverable - Industrials Emissions Directive (PCDWW30)

We note that other Bioresources PDCs are not site specific and instead reflect the area of storage provided (m^2) or the throughput for enhanced thickening or dewatering in thousands of tonnes of dry solids (TTDS). We strongly suggest that throughput in TTDS is a better metric for the IED PCD and that we can more easily commit to delivering IED compliant treatment for a set throughput of bioresources, regardless of the number of sites this is located on. The solutions would still require us to deliver the requirements of Best Available Techniques (BAT) and BREF 2018 and be fully compliant with IED by Ofwat's deadline of 31 March 2030.

Using throughput as the metric for the PCD would not limit us to one or two sites, instead it would allow for any site rationalisation that could take place under other drivers. This flexibility grants us the opportunity to rationalise sites if there are multiple other benefits to be realised, making this better value for customers also. It is important that PCD design does not restrict the solution and options which can be delivered (i.e., it should not create an economic distortion). In this case, particularly as the management of bio-resources headroom is a regional planning objective, it is important to ensure that the option for site rationalisation is maintained within the toolbox of choices. A PCD design which only allows delivery of solutions on a specific site does not allow this flexibility and is counter intuitive to the economic and efficient duties of Regulator and Company.