

Drainage and Wastewater Management Plan Alignment Cost Adjustment Claim

PR24 Draft Determination Representations – August 24



Document reference	ANH_DD_012		
Title of cost adjustment claim	Drainage and Wastewater Management Plan alignment		
Price control	Wastewater Network Plus	Symmetrical?	No
Basis of claim	<p>This claim focuses on enhancement 'plus' part of the botex plus models on water recycling networks and sewer flooding.</p> <p>It seeks to bring in line allowances to the adopted Drainage and Wastewater Management Plan (DWMP). It proposes an adjustment to the components to account for high risk of growth and climate change that the models to not currently account for.</p>		
Gross value (£m five years)	£200.2 million		
Implicit allowance (£m five years)	£122.6 million		
Net value of claim (£m five years)	£77.6 million		
How efficiency of costs are demonstrated	We set out in the claim how we apply the same cost efficiency principles to this expenditure as the rest of our enhancement totex.		
Materiality (as % of totex for price control)	This claim is material, since the net value of the claim is 1.6% of the gross Wastewater Network Plus totex in our DD Representations (£4,948m)		
How customers are protected	For this claim, customers include domestic and developer customers. Protections are set out in the document.		
Supporting document references	<p>ANH01 Our plan 2025-2030 anh01-our-plan-2025-2030.pdf (anglianwater.co.uk)</p> <p>ANH_DD_018 Resilient to flood PR24 DD Representation enhancement strategy</p> <p>Final Drainage and Wastewater Management Plan (DWMP) Final DWMP (anglianwater.co.uk)</p>		

1. Initial points to note

Aligning to our Drainage and Wastewater Management Plan: Network reinforcement and sewer flooding

The Strategic policy statement (SPS) identifies resilient drainage and wastewater systems as a key theme under the strategic priority 'resilient water sector'. The Drainage and Wastewater Management Plan (DWMP) provides the evidence base to inform this priority, as recognised in Ofwat's PR24 methodology '*company business plans should reflect their final DWMP. If they do not match, companies should provide compelling evidence to explain why.*'¹

As Ofwat has noted in the DD, we reduced the costs between the final DWMP and the October submission business plan to re-profile and balance competing pressures for investment. We sought to achieve this by:

- a) Reviewing how AMP8 investment would be different if we aligned our plan to Office of National Statistics 2018 (ONS) household projections as suggested by Ofwat's base models. Representing a lower level of growth than that in the DWMP, which instead uses a refined forecast using spatially site-based data, by using ONS2018 we deferred some of our proposed investment into AMP9.
- b) We also considered the likelihood of climate change impacting our networks within AMP8. Our final DWMP sets out the enhancement required to mitigate the impacts of long-term challenges on network capacity. By testing our final DWMP against our final LTDS Technology scenario, we identified opportunities to deliver against our ambition more efficiently by using digital technologies and partnership approaches to the management of surface water. As a result, we proposed to delay investment while we deploy emerging digital technologies, develop our partnership approach (through our Advanced WINEP) and increase our understanding of long-term climate change impacts.

We no longer consider it will be possible to tolerate the risk presented by this position because we have new evidence that suggests growth and climate change will more significantly impact our networks in AMP8, including:

- Government changes to national planning policy to create mandatory housing targets, alongside interventions to speed up the planning system.
- Our experience over the winter of 2023-24 leading to the period between October 2022 and March 2024 was the wettest 18 months since records began - causing us to revise our expectations of the pace and scale at which climate change will impact our networks.
- A review of DWMP modelling identified a likely underestimation of climate change impact in relation to catchments sensitive to ground water, and the impact this has on storage solutions.
- Our recent evidence has confirmed the link between the significant increase in pollution and sewer flooding incidents resulting from hydraulic overload, in keeping with our initial findings through our DWMP.

¹ Ofwat, Dec 2022, Delivering UK government priorities for the English water sector through our 2024 price review final methodology, page 10

- Performance over the previous APR year (2023/24) and this APR year to date since the submission of the business plan has highlighted the growing risk exposure of the wastewater network to more adverse weather conditions.

While the Ofwat approach has come some way to addressing growth and climate risks from PR19 through, for example, a scheme by scheme assessment on water recycling centres and removing developer onsite costs from the price control, other material limitations have been revealed at DD relating to network reinforcement and sewer flooding including:

- Company forecasts have been accepted for base modelling but they are limited to an unknown threshold of not ‘considerably higher’ than historic trends or ONS Household projections (essentially restricting company forecasts to ONS)
- Our analysis shows that the models are insensitive to changes in property projections, despite this being a key driver of DWMP requirements
- Urban rainfall variable does not account for the intensity of changing weather events

In response to these limitations, alongside our improved understanding of risk, our DD representation brings AMP8 investment, that was deferred through the LTDS to AMP9, back in line with our final DWMP, in keeping with the Ofwat PR24 Final Methodology.

We propose that this could be best achieved through an adjustment, or other mechanism at Ofwat’s discretion, to botex plus models to augment the implicit allowances for network reinforcement and sewer flooding.

2. Need for adjustment

Planning for a growing region

As a fast-growing region with continued high levels of economic ambition, enabling sustainable growth is one of our key ambitions. This is particularly important in the context of Ofwat’s resilience, growth and sustainable development duties:

- Ofwat has a primary duty to: *‘further the resilience objective to secure the long-term resilience of undertakers’ water supply and wastewater systems, and to secure they take steps to enable them, in the long term, to meet the need for water supplies and wastewater services.’*
- Ofwat has a secondary duty to: *‘contribute to the achievement of sustainable development’.*
- In May 2024 the growth duty was extended to Ofwat: *‘to have regard to the desirability of promoting economic growth.’*

We are pleased to see that high level of growth across the East of England has been recognised by Ofwat in the DD narrative *“Operating in the east of England, a region with high levels of population growth, Anglian Water is expected to ensure that its network can accommodate the increases in customers².*

Analysis of total property connections within Ofwat’s data panel (2012-23) shows that we have the third highest number of average connections in the sector at approximately 22,200. However, while prospective property growth is the key driver to the need for network reinforcement, property numbers as a cost driver only appears explicitly in the properties / sewer length density measure. As a consequence, the models are quite insensitive to property growth.

² [Overview-of-Anglian-Waters-PR24-draft-determination.pdf \(ofwat.gov.uk\)](#) page 7

Ofwat's approach in PR24 has helped capture these impacts more effectively through:

- Removing onsite developer costs from the price control to allow more flexibility to meet developer needs.
- Growth at Sewage Treatment Works now being considered as enhancement and being evaluated by a separate model and supplemented by scheme specific information.
- Using scenario planning as part of the Long Term Delivery Strategy (LTDS) to extremes of demand to inform low/no regret investment decisions.

These changes have significantly improved the approach to investing in growth but the Draft Determination must go further to set an appropriate allowance for network reinforcement. Network reinforcement is important to protect existing domestic customers from increased pressure on the network and impacts on customers due to growth, keeping pace with new housing across the region, and is charged to developers through grants and contributions.

New connections, equivalent to the number of new properties connecting in year, is the key driver of water recycling network reinforcement.

A priority for government in AMP8

Accelerating growth has long been a priority of successive governments with the new incoming government no exception. Since the business plan submission, the new government have however acted to make a material change to how new homes are planned as outlined King's speech introducing the Planning and Infrastructure Bill³ to:

- introduce a target of 1.5 million homes over the next five years
- create a new formula to establish local housing need
- require local authorities to meet this need through new mandatory housing targets, and
- accelerating delivery through a range of planning and consenting interventions

Significantly the government have set out in their consultation to proposed reforms to the National Planning Policy Framework to move away from ONS Household projections as a basis for establishing housing need. In this consultation the Ministry for Housing, Communities and Local Government (MHCLG) recognise limitations, stating *"Household projections are volatile, and subject to change every few years, making it difficult for local planning authorities to plan for housing over their Plan periods (10-15 years)"*. They suggest that by projecting forward past trends, household projections have also resulted in *'artificially low projections in some places'*.

MHCLG propose that the new method that is based upon uplift in housing stock will provide stability and certainty for all stakeholders, seek to address the issues with the current approach, and support a more ambitious house building strategy.

Our initial analysis suggests that once implemented this could represent an additional uplift of approximately 40 percent more homes planned by Local Authorities across our region. This could see substantial change in previous levels of growth for example, North Norfolk and Babergh Local Authorities could have an uplift of 135 percent above their existing planned levels. This renewed focus on housing growth clearly demonstrates that lower demand scenarios represented by ONS2018, as tested in the LTDS, are less credible than at submission.

³ <https://www.gov.uk/government/news/our-plan-to-build-more-homes>

Approach to network reinforcement

Property Projections

Ofwat have retained network reinforcement in the botex plus models using future property changes used as a metric for growth.

Our DWMP investment is based upon a hybrid approach that used Edge Analytic data of the spatial locations and certainty of delivery of development in combination with ONS 2018 Household projections, known as ONSPlus. We tested these approaches through our LTDS which showed that our ONSPlus projection represents a mid-range scenario.

In translating the DWMP into the business plan we adjusted our property projections to ONS 2018 Household projections in keeping with the Ofwat guidance. Despite representing the lower demand scenario in our LTDS scenario testing we did this to provide consistency with Ofwat's data set for the botex plus model suite and manage overall affordability.

Our historic trend shows however that ONS is unlikely to be an accurate representation of actual property increase. It instead suggests a lower number of property connections that we now expect to be unlikely due to government aspirations and known committed⁴ development sites that we monitor.

In the DD it has been revealed that across the sector companies have completed a variety of approaches which has led to Ofwat reviewing company property forecast against historical trends and ONS 2018 Household projections. Where company forecasts have been deemed to be 'considerably higher' these have been aligned back to an Ofwat view based on historic trends.

Our analysis shows an inconsistency in the application of the threshold amongst companies. For example Thames Water 52 percent and Southwest Water 53 percent are deemed to be 'considerably higher' above Ofwat's forecast (and as such reverted to the Ofwat forecast), whereas United Utilities (~60 percent) is not. Ofwat has offered no definition of what constitutes the 'considerably higher' threshold, or what evidence is necessary to justify an alternative forecast.

In our case, as our forecast has been aligned with ONS, our 'company forecast' has been selected by Ofwat. **While being described as a 'company forecast' this approach effectively restricts companies to submitting a forecast aligned to ONS or in keeping with historic trend.** It therefore brings into question the value of submitting an alternative company projection.

Model sensitivity

The selection of an appropriate forecast aside, our analysis of alternative forecasts in the model suite suggests the models are in any case insensitive to property change. Ofwat have recognised that the models may not be responsive to growth in the Thames Water CAC: *"At PR19, we accepted that the base cost models may not sufficiently remunerate companies operating in high growth areas."*⁵. We also note Ofwat's invitation to companies to submit cost adjustment claim if *"it expects to experience higher population growth than most companies in the sector, and the network reinforcement costs associated with that high growth are material"*.⁶

⁴ Sites with extant planning permission either commenced or not yet started

⁵ [PR24-DD-TMS Cost-adjustment-claims.xlsx \(live.com\)](#)

⁶ PR24 draft determinations: Our approach, page 4

The combination of higher expectations of growth over the next five years plus the recognised limitations of the botex models to account for this growth has led us to seek a cost adjustment. Aligning with our DWMP approach will allow us to manage the risk of higher levels of growth and continue to meet the needs of our developer customers.

Resilient Drainage

Aligning to our DWMP on sewer flooding investment will ensure that we are not deferring investment that is required now to future price control periods in keeping with the DWMP Guiding Principles which set out government and regulatory priorities and expectations for DWMPs. Notably Principle 2 is that the DWMP should: 'Strive to deliver resilient systems - that will meet operational and other pressures and minimise system failures.'⁷

This is important to support Ofwat to meet its resilience objective which is identified as a key theme under the 'resilient water sector' strategic priority in the Strategic Policy Statement (SPS). The SPS states that *'Strategic planning for drainage and wastewater services is essential to manage increasing challenges from population growth and climate change. The industry must achieve this while meeting the needs of both current and future customers, and in a way that delivers value to customers, the environment and wider society over the long-term. ... Through DWMPs water and sewerage companies will be expected to improve resilience, reduce pollution incidents, reduce the risk of flooding in people's homes and improve the local environment'*⁸

This is further emphasised in Ofwat's third Climate Change Adaptation Report which captures that climate change impacts is one of the top three strategic risks for company performance⁹.

Our DWMP

The DWMP was developed collaboratively with significant stakeholder input: Our DWMP was co-created with over 100 stakeholder organisations, having engaged with all our county councils, district councils, Lead Local Flood Authorities (LLFAs), the Environment Agency, Internal Drainage Boards (IDBs), River and Wildlife Trusts, Natural England and Ofwat, as well as local river and environmental groups.

Using stakeholder input our DWMP BRAVA (Baseline Risk and Vulnerability Analysis) assessed how climate change, growth and urban creep would affect the risk of escapes, leading to either sewer flooding or pollution incidents.

- We used the most recent catchment model to undertake 2D hydraulic modelling.
- We applied climate change (two degree scenario), growth (ONS+ scenario) and urban creep to the model
- Where the model identified an escape, we then did further analysis to understand if the escape would result in a pollution incident (by making contact with a waterbody) or sewer flooding incident (by intersecting a property boundary or curtilage).

⁷ Defra, August 2022, Guiding principles for drainage and wastewater management plans, available at: <https://www.gov.uk/government/publications/drainage-and-wastewater-management-plans-guiding-principles-for-the-water-industry/guiding-principles-for-drainage-and-wastewater-management-plans#contents>

⁸ Defra, Feb 2022, Government's strategic priorities for Ofwat, available at: [February 2022: The government's strategic priorities for Ofwat - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/publications/february-2022-the-government-s-strategic-priorities-for-ofwat)

⁹ <https://www.ofwat.gov.uk/wp-content/uploads/2022/01/Ofwats-3rd-Climate-Change-Adaptation-Report.pdf>, page 12

The DWMP shows that, without action, the risk of sewer flooding and pollution incidents increases significantly across the period:

Figure 1 Increase in risk for external flooding from 2020 to 2050 if no action is taken

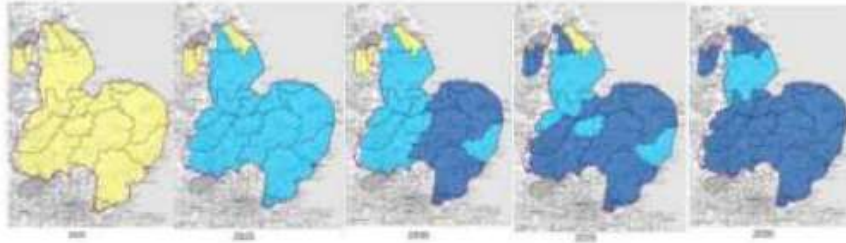


Figure 1: <https://www.anglianwater.co.uk/SysSiteAssets/household/about-us/dwmp/dwmp---technical-report-1.pdf>

As set out in further detail in the DWMP technical document Best Value modelling was then completed to find the optimal solutions which would then go on to inform our investment requirements¹⁰.

Weather patterns: increased intensity and volatility

One of the most significant risks of climate change arises from changes to rainfall patterns. Although annual mean rainfall is not expected to change significantly, UKCP18 climate change projections suggest that winters will become increasingly wetter and summers drier, and that the number of high intensity rainfall events will increase. The Met Office state that *'In the future, we project the intensity of rain will increase....In the summer, this could increase by up to 20%. In winter, it could increase by up to 25%¹¹*. The period of 2023-24 has been an extremely wet period, which evidence increasingly suggests is in line with climate change projections and indicative of the sort of weather we can expect in the future.

As part of developing our Drainage and Wastewater Management Plan and Long Term Delivery Strategy we have been actively considering the future challenges that face our asset base. Since submitting our business plan we have continued to explore the impacts of a changing climate on our water recycling networks.

We commissioned KPMG to explore and analyse our root cause and climate data to understand future performance and the impact of factors outside of management control such as extreme weather and climate change to supplement our DWMP analysis, as set out in more detail in our report [ANH_DD_064].

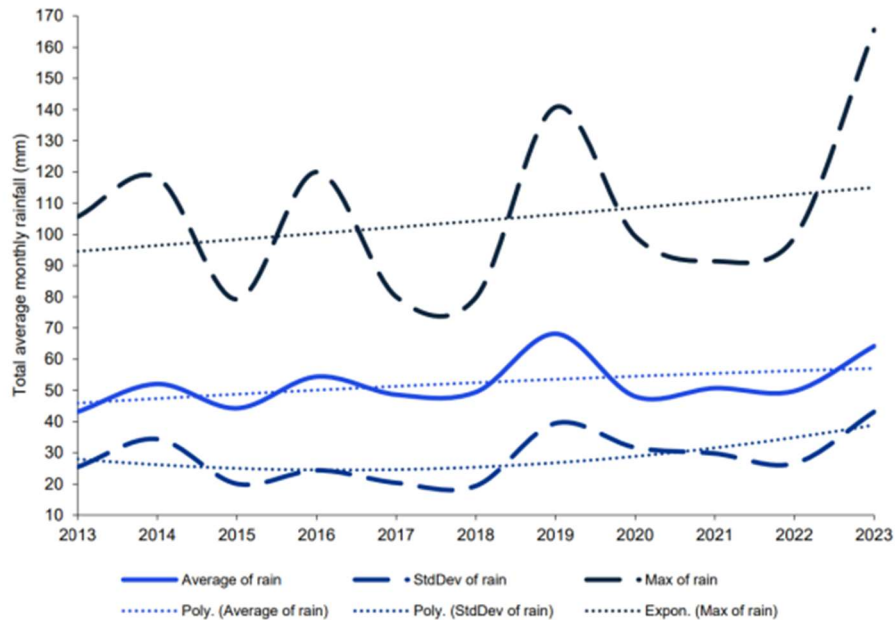
The evidence shows that there is a clear link between weather patterns and performance for flooding as well as pollutions. There is a strong correlation between rainfall peaks and surges in both total sewer flooding incidents and blockage incidents (0.56 external flooding and 0.54 internal). This pattern indicates that increased rainfall is a critical common driver of these events. The evidence also shows that changing weather patterns as observed in AMP7 are more likely in the future, with mean and maximum rainfall increasing materially since 2013.

This is shown in the figure below, which presents three key rainfall metrics:

¹⁰ <https://www.anglianwater.co.uk/SysSiteAssets/household/about-us/dwmp/dwmp---technical-report-1.pdf>, page 36

¹¹ <https://www.metoffice.gov.uk/weather/climate-change/climate-change-in-the-uk>

1. Annual average monthly rainfall: This represents the mean rainfall for each month, averaged over the year, providing insight into long-term precipitation trends.
2. Annual standard deviation of monthly rainfall: This measures the variability in monthly rainfall within each year, highlighting the unpredictability of weather patterns.
3. Annual maximum of monthly rainfall: This indicates the highest monthly rainfall recorded each year, pointing to extreme weather events.



Historical evolution of total rainfall (mm) within Anglian region

The analysis shows a material increase in the mean-expected rainfall, the maximum recorded rainfall, and the risk exposure (as measured by the standard deviation). These trends suggest that the impact of climate change has increased over the years, characterised by:

- Increased mean and maximum rainfall: These increases indicate that both average and peak rainfall levels have risen, reflecting a greater volume of water entering the sewage and drainage systems, which can lead to more frequent and severe hydraulic overloads, sewer flooding and pollution incidents.
- Higher variability in rainfall: The rise in standard deviation suggests more unpredictable rainfall patterns. This unpredictability could impact water management efforts, as it becomes harder to anticipate and prepare for extreme weather events.

Our observation is that while our region is comparatively dry, these extremes stress and overwhelm our asset base. KPMG's reported noted:

There is a strong correlation between rainfall peaks and surges in both total sewer flooding incidents and blockage incidents. This pattern indicates that increased rainfall is a critical common driver of these events. The most recent data shows a material increase in both rainfall and pollution incidents, indicating that the impact of climate change is becoming more pronounced. This rise in incidents

correlates with increased rainfall, highlighting the stress placed on the water management infrastructure and therefore deterioration in performance¹²

The analysis suggests that rather than a future challenge over the next five years some 23% of flooding external incidents and 13% of internal flooding incidents may be attributable to climate change.

The KPMG analysis is also consistent with recent findings from leading climate scientists. As published by the Met Office in May recently conducted research that has found rainfall associated with storms is becoming both more intense and more likely¹³. Their study, published by Imperial College London, suggest that that in a pre-industrial climate, rainfall from storms as intense as the 2023-24 season, had an estimated return period of 1 in 50 years. However, in today's climate, with 1.2°C of global warming, similarly intense storm rainfall is expected to occur more often, about once every five years. Climate change has also increased the amount of rainfall from these storms, making them about 20 percent more intense¹⁴.

The observed performance in AMP7 and analysis of climate change corroborates the conclusion of our DWMP that future sewer flooding performance will be under significant pressure. Further analysis will be completed in DWMP cycle 2 but the evidence is already sufficiently compelling to justify an adjustment for the next five years to meet our current DWMP estimates.

Model sensitivity

At PR24 Ofwat have introduced an urban rainfall variable to the botex plus models to reflect the volume of inflows into drainage and sewerage networks. As we stated during the base model consultation we maintain that total annual rainfall is not the driver of costs, rather it is the *intensity* of the rainfall that determines both the capex requirements (e.g in terms of the mains diameter) and the level of opex (e.g pumping costs)¹⁵. As we stated during the consultation a superior measure could be based on the number of extreme rainfall events in a year - for example, setting the threshold at storms with a rainfall intensity greater than 25mm/hr.

Ofwat suggest that *“Urban rainfall can also help account for climate change impacts where periods of extreme rainfall could become more prevalent over time¹⁶”*. However, urban rainfall met office data is based on historic trends so will not capture the changing patterns that evidence suggests are becoming more prevalent. Ofwat accept this the limitations of this approach stating *“We also recognised that forecasting urban rainfall would be challenging..”*.

We propose therefore that while such limitations remain an adjustment would be appropriate to align with the DWMP analysis of climate impacts on sewer flooding.

¹² KPMG, The impact of climate change on key operational performance measures, page 20

¹³ <https://www.metoffice.gov.uk/about-us/news-and-media/media-centre/weather-and-climate-news/2024/climate-change-drives-increase-in-storm-rainfall>

¹⁴ <https://spiral.imperial.ac.uk/bitstream/10044/1/111577/7/Scientific%20Report%20UK%20Storms.pdf>

¹⁵ <https://www.anglianwater.co.uk/SysSiteAssets/household/about-us/pr24/ANH45-Cost-adjustment-claims-Comments-on-modelling.pdf>

¹⁶ PR24-draft-determinations-Expenditure-allowances-Base-cost-modelling-decision-appendix.pdf (ofwat.gov.uk) page 42-46

3. Proposal for the FD

- We outline a DWMP aligned view of the required funding for AMP8. This is based on bottom-up evidence setting out the benefit to customers and cost-benefit analysis associated with our planned programme large network reinforcement schemes and sewer flooding.
- We net this off against an estimate of the implicit allowance associated with the suite of base models to indicate the overall value of the required expenditure uplift

4. Unique circumstances

Our final DWMP has been developed to take into account the unique circumstances of the region, including the specific characteristics of our catchments and stakeholder engagement.

We have worked closely with our consultant Capital Economics, to develop a detailed analysis of the unique circumstances faced in the Anglian Water region and summarised these into a report ‘Thriving East’¹⁷. This report assesses four pillars to derive a ‘Thriving Index’, with the Anglian Water region shown as the most challenging outside of London:

Geography	Pillar Ranking				Overall
	Climate Change	Economy and Society	Sustainable Growth	Nature and Environment	
North East	2	11	1	1	1
South East	11	2	4	2	2
North West	1	9	3	3	3
South West	7	5	7	4	4
England	4	3	10	6	5
West Midlands	5	7	9	5	6
East Midlands	6	6	8	7	7
East of England	10	4	6	9	8
Yorkshire and The Humber	3	10	2	11	9
Anglian Water region	8	8	5	10	10
London	9	1	11	8	11

Three of the four pillars are core aspects considered by the DWMP, therefore whilst we note that our claim is not symmetrical, we provide this as context of the specific nature of our region.

5. Management control

The factors described in the above chapter on unique circumstances are outside of management control as they describe exogenous factors such as climate, national growth strategy, socio-economic issues and the natural environment.

¹⁷ [thriving-east-report-final.pdf \(anglianwater.co.uk\)](https://www.anglianwater.co.uk/thriving-east-report-final.pdf)

6. Materiality

All of the proposed DWMP expenditure falls within the wholesale wastewater network plus price control. Therefore, the relevant materiality threshold to consider is 1 percent of gross Wastewater Network Plus Totex (£4,948 million), a threshold of £49.5 million. The total value of our net cost adjustment claim for additional DWMP expenditure is £77.6 million, 60 percent greater than the materiality threshold.

We note that the expenditure that forms our DWMP claim spans two of Ofwat's expenditure categories: growth network reinforcement and flood risk expenditure. However, the DWMP is a catchment-based approach to planning that considers the pressures that growth and climate change place on the water recycling network. The modelling that underpins the programme of investment set out in our DWMP does not differentiate between regulatory expenditure categories in evaluating the set of interventions that best deliver a resilient water recycling network. For example, the benefits that our DWMP delivers in mitigating the impact of future external drivers (growth and climate change) on future pollution incidents cannot be separated out to align to these expenditure categories. Moreover, we note that Ofwat's approach to funding effectively treats both areas of expenditure as collectively funded through the same set of base expenditure models.

While our claim therefore meets the materiality threshold for AMP8, we note that Ofwat's general approach to assessing materiality against a fixed percentage of network Totex is becoming an arbitrarily higher threshold as the scale of required enhancement (for example through statutory schemes such as WINEP) increase at an unprecedented rate. To illustrate this, the materiality threshold for wastewater network plus—which has remained a fixed proportion of 1 percent of Totex—is 64 percent greater at PR24, relative to PR19.¹⁸ Ofwat's approach in effect is combining the deliverability challenges that companies face in accommodating a significant step change in new investment, with an arbitrary ratchet being applied to increase the materiality threshold for Cost Adjustment Claims.

7. Adjustment to allowances

We have adjusted our PR24 plan to align to our final DWMP published last summer using higher growth and climate change forecasts. We summarise below the requested adjustment to our botex plus allowances for wastewater network+, which is also represented in business plan data table CWW18. The implicit allowance has been calculated using Ofwat's guidance (all figures in £m 22/23 prices):

	October Business Plan	DD Implicit Allowance	DD Rep	Net value of the claim
Flood risk (CWW3.158)	61.5	91.3	107.98	16.7
Network Reinforcement (ADD13.1 &2)	51.7	31.3	92.18	60.9

¹⁸ Comparing £49.5 million to £30.1 million, reported as £25.5 million in 2017-18 prices. Ofwat (2019), 'PR19 final determinations: Anglian Water final determination', December, table 3.1, p. 35.

	113.2	122.6	200.16	77.6
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8. Best option for customers

We have developed a standard options selection approach in Anglian Water that requires our teams to consider multiple approaches before settling on a best value option for inclusion in our plan. This is described in business plan document ANH01¹⁹ in chapter 7.3.3. In our business plan document ANH26²⁰ chapter 7.2.1 we then set out specifically how we developed the flooding portfolio costs following a process of option selection. In developing the build-up of costs for the DD Representations we have followed the same approaches described above and provided more evidence explaining the changes in our DD Representations document enhancement strategy ANH_DD_018 Resilient to risk of drought and flood.

9. Customer protection

As with other areas of our plan, we agree that customers should be protected from non-delivery of significant enhancement investments. In the case of this CAC we note that the protection required is for two groups of customers:

- Household and business (non-household) customers who are funding flood risk improvements to tackle climate change via base allowances. This group already has protection via the common performance commitments for internal and external sewer flooding, and to some extent via C-MeX
- Developer customers who fund network reinforcement via zonal charges, and who already have protection via developer charging mechanisms, and to some extent via D-MeX

We also note that any additional protection mechanisms beyond those existing above should ensure that in the event of non-delivery, funding is returned to the group who contributed it. Therefore a standard PCD should not be used for example to cover Network Reinforcement expenditure, since PCDs return funding by adjusting main charges, rather than developer charges.

We provide below a breakdown of the largest schemes building up to the totals in our network reinforcement plan, and expect a PCD. A PCD would need to include some change control process where we can agree variation with Ofwat in delivery phase to account for changes in developer needs similar to the proposed PCD for Growth at water recycling centres.

Scheme name	Total Capex (£k)	Total Opex (£k)	Totex (£k)
GP Fiveways Fruit Farm Stanway S98	881.5	9.2	890.7
Growth - The Pigs, Edgefield	2,770.4	19.1	2,789.5
Foxton (Leics) Network - Gartree Prison Development AMP8	2,460.8	66.0	2,526.8
St Neots - Growth - Foul Strategy Phase 2	3,068.5	680.0	3,069.2
Gt Haddon Phase 2 Growth	11,520.7	86.7	11,607.4

¹⁹ [anh01-our-plan-2025-2030.pdf \(anglianwater.co.uk\)](#)

²⁰ [ANH26-Enhancement-strategy-Resilience-to-drought-and-flood.pdf \(anglianwater.co.uk\)](#)

Northampton Growth	9,600.2	48.2	9,648.3
Stanton Cross - Growth	14,995.8	-	14,995.8
Huntingdon & Alconbury Weald Growth	13,276.0	110.4	13,386.3
Whitlingham Growth - Yare Valley Strategic Sewer Defined Scheme	16,724.9	5.8	16,730.7
Stamford Catchment - WR Network	2,614.5	35.4	2,649.9

10. How the company has arrived at its efficient cost estimate

In our business plan submission ANH01²¹ we set out in detail in chapter 7 how we developed our cost estimates using our ‘double lock’ process, a combination of out-turn costs of complete schemes with similar asset types as well as externally sourced cost intelligence benchmarks. Chapter 7.1 in particular how we changed our processes for PR24 to ensure our costs were externally benchmarked in multiple ways across all of the spend in our plan.

Specifically for the expenditure covered by this claim we provide cost efficiency evidence in ANH26²² chapter 7.3 for reducing flood risk at properties. Our principal external benchmark for this portfolio of work is the WRC TR61 cost database. For brevity we do not repeat the evidence within this claim.

11. Third party assurance

In our business plan submission we engaged Jacobs to complete external assurance of this portfolio of work, and published their findings in business plan document ANH60²³.

Although the DWMP audit had only green findings, Jacobs highlighted concerns with the flooding portfolio cost assumptions within our original business plan submission, stating concerns that the totex build up assumed significant partnership contributions: *“The programme scale is justified, however it is not clear whether the programme will deliver the expected benefits due to the reliance on external stakeholders who are as yet uncommitted.”* In the updated costs prepared for the Draft Determination Representations, we have reduced the level of partnership contributions expected to alleviate this concern.

In addition to the assurance completed for PR24, the DWMP itself was also externally assured in 2023²⁴.

²¹ [anh01-our-plan-2025-2030.pdf \(anglianwater.co.uk\)](#)

²² [ANH26-Enhancement-strategy-Resilience-to-drought-and-flood.pdf \(anglianwater.co.uk\)](#)

²³ [anh60-jacobs-assurance-report.pdf \(anglianwater.co.uk\)](#)

²⁴ [board-assurance-statement-for-draft-dwmp.pdf \(anglianwater.co.uk\)](#)

12. CAC data table CWW18

As required by the table guidance²⁵ for CWW18 (wastewater network plus CACs)²⁶, we quote the IA before the application of Frontier Shift and RPE. Please note that the gross totex for Network Reinforcement is also shown before the application of Frontier Shift and therefore align with ADD13 rather than DS3.

²⁵ PR24 business plan table guidance part 4; Costs (wholesale) - wastewater

²⁶ "The value of the implicit allowance should be calculated after the application of the catch-up efficiency challenge, but before the application of frontier shift and real price effects. Companies should clearly set out the assumption used for the catch-up efficiency challenge." 25.5 p. 84.

Appendix 1: Conformity with Ofwat’s criteria for assessing CACs

Category	#	Issue	Response
Need For Adjustment: Unique Circumstances	1	Is there compelling evidence that the company has unique circumstances that warrant a separate cost adjustment?	We have provided a detailed report and ‘Thriving Index’ demonstrating this.
	2	Is there compelling evidence that the company faces higher efficient costs in the round compared to its peers (considering, where relevant, circumstances that drive higher costs for other companies that the company does not face)?	Growth forecasts specific to our region are taken into account in the DWMP, our claim revises the PR24 plan to align to the DWMP forecasts rather than those used by Ofwat in the botex modelling at Draft Determinations.
	3	Is there compelling evidence of alternative options being considered, where relevant?	Our DWMP sets out the options development approach and method used to derive a best value plan.
Need For Adjustment: Management Control	1	Is the investment driven by factors outside of management control?	Yes as explained above the unique circumstances in our region are exogenous.
	2	Have steps been taken to control costs and have potential cost savings (eg spend to save) been accounted for?	We set out in our LTDS how we have phased costs across AMPs 8-12, deferring spend beyond 2030 where possible.
Need For Adjustment: Materiality	1	Is there compelling evidence that the factor is a material driver of expenditure with a clear engineering / economic rationale?	Yes – we have tested materiality against the 1 percent of totex threshold. The engineering rationale has been developed as an industry for DWMP using the accepted BRAVA methods.
	2	Is there compelling quantitative evidence of how the factor impacts the company's expenditure? Adjustment to allowances (including implicit allowance)	Yes – we explain how higher population growth and increasing climate change impacts of rainfall intensity increase costs.
	3	Is there compelling evidence that the cost claim is not included in our modelled baseline (or, if the models are not known, would be unlikely to be included)? Is there compelling evidence that the factor is not covered by one or more cost drivers included in the cost models?	We have calculated the implicit allowance using Ofwat’s suggested method and only submitted a claim for the increase above the implicit allowance (Net value of the claim).
	4	Is the claim material after deduction of an implicit allowance? Has the company considered a range of estimates for the implicit allowance?	Yes – we have tested materiality against the 1 percent of totex threshold. We used the Ofwat suggested method to derive the allowance.
	5	Has the company accounted for cost savings and/or benefits from offsetting circumstances, where relevant?	We are not aware of any such relevant circumstances.

Category	#	Issue	Response
	6	Is it clear the cost allowances would, in the round, be insufficient to accommodate the factor without a claim?	Without a claim, given the high likelihood of higher growth than that allowed for in base cost allowances, we would either have to overspend and ask shareholders to subsidise housing growth via cost sharing, or reduce capital maintenance within wastewater network plus.
	7	Has the company taken a long-term view of the allowance and balanced expenditure requirements between multiple regulatory periods? Has the company considered whether our long-term allowance provides sufficient funding?	As above, our LTDS and DWMP are both set out over the period 2025-50
	8	If an alternative explanatory variable is used to calculate the cost adjustment, why is it superior to the explanatory variables in our cost models?	We do not propose an alternative explanatory variable
Cost efficiency	1	Is there compelling evidence that the cost estimates are efficient (for example similar scheme outturn data, industry and/or external cost benchmarking, testing a range of cost models)?	Yes we benchmarked our costs using the industry unit costing database TR61 provided by WRC
	2	Does the company clearly explain how it arrived at the cost estimate? Can the analysis be replicated? Is there supporting evidence for any key statements or assumptions?	We provide scheme level costing data and on request can provide more detail
	3	Does the company provide third party assurance for the robustness of the cost estimates?	Yes we have engaged both third party technical assurance and independent cost benchmarks.
Need for investment	1	Is there compelling evidence that investment is required?	Yes, this spend is essential to support the new government's growth strategy
	2	Is the scale and timing of the investment fully justified?	Yes we set out how the scale and timing are defined by DWMP
	3	Does the need and/or proposed investment overlap with activities already funded at previous price reviews?	No all of the expenditure requested is for enhancement spend only
	4	Is there compelling evidence that customers support the need for investment (both scale and timing)?	We completed extensive customer engagement work as part of the strategic planning framework to test support for the chosen core pathway in DWMP
Best option for customers	1	Did the company consider an appropriate range of options to meet the need?	DWMP options appraisal is prescribed by the industry guidance which will become statutory in cycle 2 of DWMPs for PR29
	2	Has a cost-benefit analysis been undertaken to select proposed option? There should be compelling evidence that the proposed	DWMP guidance requires best value planning vs least cost

Category	#	Issue	Response
		solution represents best value for customers, communities and the environment in the long term? Is third-party technical assurance of the analysis provided?	
	3	Has the impact of the investment on performance commitments been quantified?	We set out in the DWMP and in this CAC an explanation that upwards pressure from growth and climate change mean we need to spend more to deliver the same level of performance, therefore we have not amended our PCLs.
	4	Have the uncertainties relating to costs and benefit delivery been explored and mitigated? Have flexible, lower risk and modular solutions been assessed – including where utilisation will be low?	As explained in our DWMP and WRLTP from PR19, we use low regret approaches where possible, for instance removing surface water from the catchment before investing in new grey solutions
	5	Has the company secured appropriate third-party funding (proportionate to the third party benefits) to deliver the project?	Our ambition for partnership funding remain leading in the sector via our A-WINEP, however we have (in response to feedback from our auditor) reduced our ambition for partnership funding of flood mitigation schemes.
	6	Has the company appropriately presented the scheme to be delivered as Direct Procurement for Customers (DPC) where applicable?	N/A this work is not eligible for DPC
	7	Where appropriate, have customer views informed the selection of the proposed solution, and have customers been provided sufficient information (including alternatives and its contribution to addressing the need) to have informed views	Extensive customer engagement was completed via DWMP strategic planning framework.
Customer Protection	1	Are customers protected (via a price control deliverable or performance commitment) if the investment is cancelled, delayed or reduced in scope?	We set out a chapter above explaining how customers are protected
	2	Does the protection cover all the benefits proposed to be delivered and funded (eg primary and wider benefits)?	We set out a chapter above explaining how customers are protected
	3	Does the company provide an explanation for how third-party funding or delivery arrangements will work for relevant investments, including the mechanism for securing sufficient third-party funding?	N/A