

Representations: Cost assessment

Document Reference: D003

This document sets out U UW's representations on Ofwat's Draft Determination for PR19 in relation to cost assessment.

United Utilities Water Limited



Executive summary

This document sets out UUW's representations on Ofwat's Draft Determination for PR19 in relation to cost assessment. Any issues have been raised as promptly as we were able to do so under the price review process, taking into account the information that has become progressively available over time through the IAP stage, the resubmission stage for fast track companies and the release of Ofwat's Draft Determination, alongside various other queries and correspondence between Ofwat and stakeholders during 2019.

We are pleased that Ofwat has recognised the quality of our business plan, particularly our efficient costs, facilitated by our award winning market engagement methodology and our approach to innovation, which has enabled us to put forward a highly ambitious plan that includes over £1bn of cost reductions since AMP5.

In accepting the results of the IAP 'in the round', we chose not to accept the 'early certainty principle' part of which results in cost adjustment claims remaining open to change. We still believe that there are areas of cost assessment that do not adequately reflect both the efficient expenditure required to account for our operating environment or the actual scale of the efficiency challenge that we have set ourselves. Our response to the Draft Determination on cost assessment can be divided into three broad categories:

- Changes required to gross expenditure to account for specific regional circumstances that are not adequately represented within the baseline (cost adjustment claims) and required enhancements not included within the IAP/DD - summarised within Table 1,
- Adapting the approach to determining grants and contributions to reflect changes to reporting for AMP7 and company specific issues - summarised within Table 2 and,
- Changes to the frontier shift approach adopted by Ofwat in further challenging base expenditure allowances and the potential for bias within cost assessment modelling - summarised within Table 3.

Our own modelling provided in the September submission¹ indicated an initial independent view of the efficient expenditure required that was almost £500m greater than the costs that we proposed. Following the IAP we have now been able to review and understand the approach that Ofwat has taken to determining baselines and this representation document responds to this in a constructive way. We recognise that Ofwat has not accepted a significant portion of the approach to cost assessment that we put forward in our September business plan, – in particular triangulating across a diverse suite of models covering all value chains. However, we consider that there remains scope for Ofwat to address at least some of the remaining issues by – for example – considering the evidence we are providing in the submission - for example on the approach to cost adjustment claims, diversions and grants and contributions.

Recognising that determining independent expenditure baselines is a difficult and thankless process, our proposals arrive at the appropriate outcome in the least intrusive way, making use of the existing options available within cost assessment. In particular, we have sought to avoid proposing any radical changes to the process or models at this advanced stage of the price review.

The following tables summarise the proposed changes to Ofwat's cost assessment for UUW, as evidenced in the remainder of this document, against the three categories above.

¹ As set out within 'S6002_Cost_assessment_proposal'

We structure this document as follows;

- Sections 2 and 3 describe in detail issues that have arisen within the Draft Determination because of the application of grants and contributions within the totex baselines, primarily the approach to diversions grants and contributions and the decision to cap the income offset for six companies. We provide solutions to each of these issues in an attempt to support the development of a more reflective net totex,
- Sections 4 to 8 summarise the updates that we have made to our cost adjustment claims (provided separately) from September including where we are providing further evidence or clarification, where we are no longer pursuing a specific claim and the inclusion of a new claim to reflect the atypical nature of our diversions programme not accounted for in totex allowances,
- Sections 9 and 10 set out our concerns regarding the assessment of specific enhancements programmes that we do not believe have been appropriately allowed within the draft determination as well as unexpected changes to our proposed WINEP cost adjustment mechanism that are potentially harmful,
- Finally, sections 11 to 15 contain our reflections on the approach to cost assessment, specifically whether Wholesale totex 'allowances' appear equitable across the industry, the underestimation of the required frontier shift by all companies and the approach to allocating modelled expenditures to opex and capex (PAYG). We also cover two key concerns for Retail cost assessment; the use of future forecasts in determining the efficiency challenge as well as the inclusion of transiency within industry econometric models.

Table 1 Summary of the proposed adjustments to gross expenditure

Changes to gross totex	Business plan £m	Draft Determination £m	Proposed addition to DD £m	Section
Cost adjustment claim : Drainage	£87.7m	£0.0m	+£87.7m	5
Cost adjustment claim : Diversions gross expenditure (New)	£111.6m ²	£21.5m	+£90.1m	2.2
Cost adjustment claim : Impounding reservoirs	£51.2m	£0.0m	+£51.2m	6
Cost adjustment claim : M&PR	£72.7m	£57.40m	+£9.3m	8
River Severn-River Thames Transfer (New)	£0.0m	£25.7m	+£19.6m	10.3
Lead replacements	£16.8m	£0.0m	+£15.5m	10.1
Water resilience	£12.9m	£0.0m	+£7.9m	10.2
Leakage enhancement	£40.0m	£0.0m	+£14.3m	10.4
Wastewater WINEP scheme removals (New)	£10.1m	£7.5m	(£7.5m)	9.1
Total proposed adjustment to Draft Determination baseline	£403.0m	£112.1m	+£288.1m	

Table 2 Summary of the proposed adjustments to grants and contributions

Changes to grants and contributions	Business plan £m	Draft Determination £m	Proposed addition to DD £m	Section
Operating expenditure grants & contributions error	£0.0m	(£6.3m)	+£6.3m	2.1
NRSWA recovery assumption	£8.9m	£0.0m	+£8.9m	2.2
Income offset/New development income	£125.6m	£37.3m	+£88.3m	3
Total proposed adjustment to Draft Determination baseline	£134.5m	£31.0m	+£103.5m	

Table 3 Summary of the proposed adjustments to frontier shift/RPE

Changes to the frontier shift/RPE's	Business plan £m	Draft Determination £m	Proposed addition to DD £m	Section
Frontier shift and RPE	+£24.4m	(£171.7m)	+£114.7m	12
Total proposed adjustment to Draft Determination baseline	+£24.4m	(£171.7m)	+£114.7m	

² This expenditure was included within the September plan but the need for a cost adjustment claim was not apparent until the Draft Determination.

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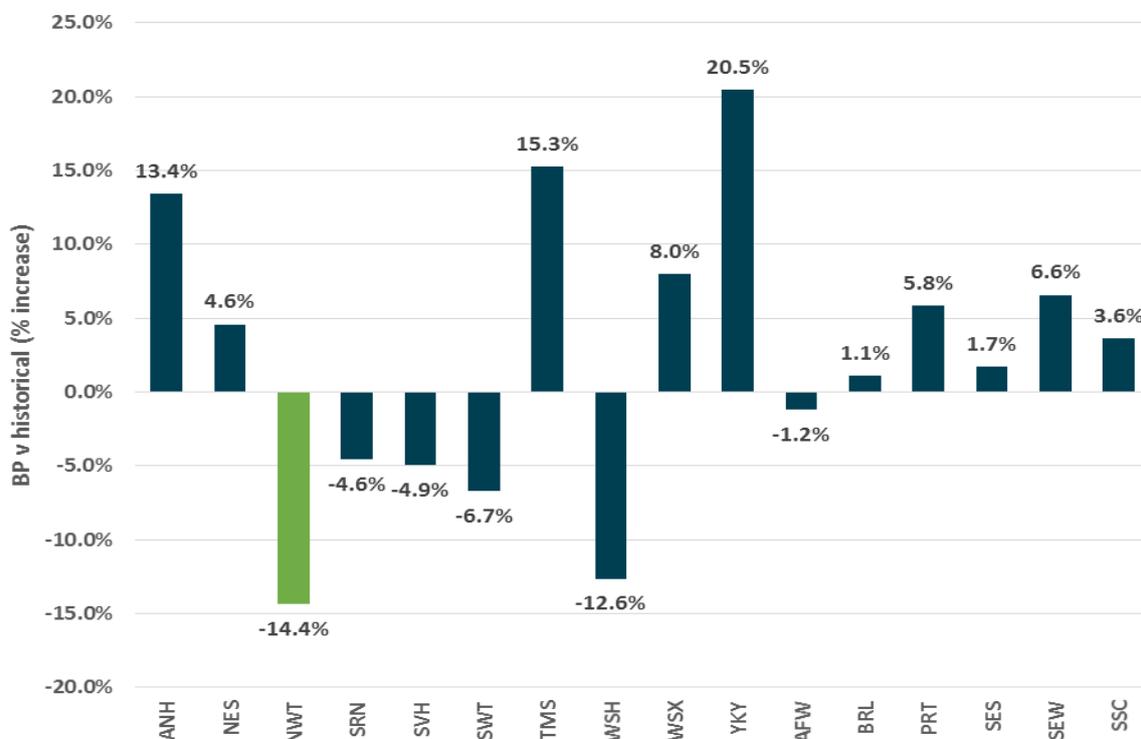
1. Introduction

As evidenced within Chapter 7 of our Business plan, we have proposed a significantly stretching business plan, with substantial cost reductions in comparison with previous AMP periods, whilst also committing to meet significant improvements in service. Our plan committed to:

- **Stretching and efficient cost targets:** Proposed wholesale totex over £1bn lower than AMP5 and residential retail costs reduced by one third (£48m p.a.) since AMP5
- **Significant customer service, operational and environmental improvements:** Delivering on cost challenge even whilst achieving stretching improvements in performance commitment targets
- **Strong focus on innovation to deliver customer service and efficiency improvements:** Savings of £445m compared to AMP5
- **Comprehensive engagement with markets, testing our whole cost base:** Savings of £359m compared to AMP5
- **Undertaken a robust cost and needs challenge, enabling lower prices for customers:** Savings of £231m compared to AMP5
- **Efficient cost base versus peers and other sectors:** Efficiency commitments greater than other industries

Ofwat’s analysis (illustrated in Figure 1³) showed that U UW has proposed one of the most stretching, whilst also credible, plans in the industry. Whilst Ofwat’s assessment of cost substantially coincides with the values included in our business plan, this its assessment of the baseline is clearly derived on a different basis from that which we set out in our business plan submission. Indeed, as we stated in our business plan, our view is that an appropriate independent benchmarked assessment of United Utilities expenditure requirements for AMP7 would predict totex of c£5.9bn.

Figure 1 Wholesale base cost and Retail: business plan vs historical percentage increase



³ [PR19 initial assessment of plans: historical expenditure, companies’ forecasts and Ofwat’s challenge](#)

We are forecasting that our underlying AMP6 base programme will outperform the PR14 Wholesale totex baselines by £100m and so the additional challenge that we have placed onto ourselves should have placed us substantially below Ofwat's benchmark.

Following our review of the information published on Ofwat's cost assessment, there are several key areas where we believe the approach embedded in draft determinations should be reviewed. These are:

- **The current proposed calculation and application of grants and contributions (and related costs)** within the Wholesale price controls, particularly diversions and the income offset;
- Absence of any adjustment to account for **the impact of drainage** on the Wastewater network plus business;
- Absence of any adjustment to account for the impact of having to **maintain a large number of reservoirs** in the Water Resources business; and the
- Approach to **assessing enhancement expenditure**, specifically within lead pipe replacements, resilience improvements and leakage (for proposals >15%).

More widely, we also note the comments made surrounding the calculation and application of the frontier shift within the Wholesale price controls, specifically the assumed level of **productivity improvements** in botex, whilst also complying with performance improvements, and accommodating the switch to CPI(H) indexation of costs.

We address the issues above as well as others in detail in this document, highlighting not only the issues caused but proposing solutions or further evidence where appropriate.

1.1. Potential econometric model changes as a result of company representations

In their responses to the IAP, the majority of slow track and significant scrutiny companies made a representation on Ofwat's approach to cost assessment. Whilst the common concerns were largely methodological in nature - for example, focussing on the assumptions made by Ofwat between expenditure and performance such as the ability to deliver 15% leakage reductions through base expenditure - a handful of companies have more directly challenged Ofwat's modelling approach.

In our view, Ofwat's approach to econometric modelling and transparency of the process at PR19 has been a marked improvement on that at PR14. It must not be forgotten that Ofwat has undertaken a great deal of collaborative work for cost assessment at PR19 and it is a challenging ask to develop independent econometric models that can properly capture the intricate and specific characteristics of what are largely heterogeneous operators.

Successful application of Ofwat's own model development and assessment criteria⁴ require that the most important (industry wide) cost drivers be represented within models. Any challenge against models would therefore imply that suddenly these cost drivers are not important, which defies logic. Criticisms from protagonists that models are too 'parsimonious' neglect the fact that companies have the ability to make representations on (omitted) variables through the submission of well-evidenced cost adjustment claims.

In the technical appendix⁵, Ofwat states, "*Our intention is to use the same models for the rest of the PR19 process (draft and final determinations), however we will make changes to our set of models if it is appropriate to do so in light of new data or evidence from company representations.*"

⁴ [Cost assessment for PR19: a consultation on econometric cost modelling](#) page 8, Ofwat.

⁵ [Supplementary technical appendix: Econometric approach](#) (Revised 13 February 2019) page 4, Ofwat.

Whilst we are confident that the inclusion of a drainage variable would enhance the predictive capability of models as it captures intra-year changes in expenditure (where other variables remain constant), **we believe that it would be best for Ofwat to retain its existing models and deal with drainage by reconsidering our cost adjustment claim** (see section 5 below). At this stage of the price review process, changes to the approach to implement the methodology e.g. the application of frontier shift efficiency adjustments, are more reasonable to consider than underlying changes to the models.

Changes to the approach will impact all companies in the same direction (either positively or negatively) and so objectivity will be preserved, but any changes to the underlying econometric models will, by very nature, result in ‘winners’ and ‘losers’, which would be more divisive. Companies have either already materially accepted the IAP ‘in the round’ (part of which is the resulting IAP cost assessment) or have based their responses to the IAP on what has been published to date. Changes to the resulting assessments will require companies to review their positions that, at the very least, will cause delays in the process.

Therefore, if companies consider that they have particular “regional operating circumstances with significant impact on costs”, then the onus should be on them to submit cost adjustment claims in order to value and capture these differences in preference to proposing changes to econometric models. If Ofwat is ultimately persuaded that there are material deficiencies within their model suite that are to the detriment of companies, it might be more appropriate to implement an adjustment to the frontier shift assumption as a solution.

However, if Ofwat is considering changes to its cost models then it must also include in that consideration all of the proposals in our September submission document on cost assessment (S6002 - Cost assessment proposal). In particular, we would be concerned that company specific representations could create large reallocations of cost assumptions between different companies. This is a particular risk for fast track companies, as Ofwat’s bifurcation of the price control process into fast and slow tracks, risks Ofwat’s consideration of slow track company representations being detrimental to fast track companies, thus undermining confidence in benefits of seeking a fast track determination. We would urge Ofwat to remember that the cost assessment proposals submitted with our September business plan (in document “S6002 - Cost_assessment_proposal”) specifically sought to address the risk of models being overly geared towards representing the circumstances of any individual companies by, for example, including the triangulation across a more diverse suite of models that encapsulate differing characteristics and value chain trade-offs, and also providing an alternative triangulation approach which minimised the potential influence of extreme outliers.

2. Ofwat approach to assessing operating expenditure grants and contributions - Diversions

In deriving the net totex baseline for each company, Ofwat has made assumptions on the appropriate recovery rates and grants and contributions resulting from activities related to diversions using business plan grants and contributions. These assumptions do not reflect the implicit allowances made within botex models and as a result, Ofwat has ‘allowed’ significantly less gross expenditure than what we expect to incur, leading to net totex ‘allowances’ being too low. The result of this is that Ofwat’s net totex baseline for UUW is approximately £105m lower than it should be (*ceteris paribus*). Three issues drive this difference within Ofwat’s assessment:

- £6.32m of additional new development grants and contributions allocated in error from table WS2;
- £90.11m of gross expenditure not implicitly allowed within the botex models; and,
- £8.91m due to NRSWA diversion grants and contributions within our plan, that are not 100% recoverable.

We understand that ahead of the Draft Determination there may have been insufficient evidence to understand the implications of the approach. However, now we are providing the evidence that should remove any obstacles preventing Ofwat from making the appropriate adjustment. If Ofwat considers that the evidence provided is not sufficient for it to apply the correction then it is essential that Ofwat engages with us to resolve these issues; not doing so could result in a materially incorrect determination when this could be easily avoided.

We address the causes of these issues and propose solutions in the following sections.

2.1. Additional new development grants and contributions allocated in error

Firstly, we note that within its model⁶ **Ofwat has included a further £6.32m⁷ of Water network plus operating expenditure grants and contributions in error (66% of £9.58m)**. As we stated within our submission table commentary, the expenditures allocated to line 50 within table WS2 are the additional operating expenditure impacts from⁸ the following two issues:

- **Marginal Cost of Water** – New Development activity is linked to population growth and assuming all other things remain equal, UUW would need to provide additional treated Water on an ongoing basis to meet an increase in the level of demand.
- **Increase in the size of the UUW’s potable network system** – As a result of New Development there is an increase in the length of the water network that UUW needs to maintain and operate, as well as an increase in the volume of obligations that UUW needs to meet in terms of providing wholesome water.

These activities are not ones that are rechargeable to a developer and therefore should not have been included within Ofwat’s calculation of operating expenditure grants and contributions. We propose that **Ofwat should remove this expenditure from its assessment when calculating the correct grants and contributions for the Final Determination.**

We detail the proposed adjustments to the baseline within section 16.1.

⁶ [‘Grants and Contributions model – United Utilities Water’](#), Ofwat

⁷ £9.58m in Water Network plus. £0.92m in Water Resources not included within Ofwat assessment.

⁸ ‘P0003_PR19_Business_plan_data_tables_commentary’, p122, United Utilities.

Sections 2.2 and 2.3 focus on the issues caused by assumptions concerning the derivation of diversions grants and contributions. We have two specific issues regarding the treatment of diversions grants and contributions within cost assessment:

- the calculation of an appropriate grants and contributions *value* for use in deriving net totex is addressed within section 2.2; and,
- the treatment of these grants and contributions within the price control revenue build up, specifically whether they are treated as ‘price control’ or ‘non-price control’ revenues, which we address in section 2.3.

2.2. Diversion expenditure within the botex baseline and associated grants and contributions

Whilst specific enhancement models cover new connection and new development activities, diversions (gross) expenditure is included within base models. These costs and activities are therefore not explicit within the baseline but an appropriate calculation of diversions grants and contributions within net totex must account for the fact that **there is only an implicit allowance within the gross botex modelled ‘allowance’**.

Rather than developing an independent assessment of the gross expenditure predicted by the botex models for diversion activities, Ofwat adopts the simple approach of equating its assessment to the forecast grants and contributions within company business plans. Ofwat’s botex assessment does not account for variations in diversion activities, therefore simply using the company forecast for grants and contributions will over or under remunerate companies if their forecast activities differ from the historic average. This is a particular issue for diversions, for two reasons:

- It is an activity demanded by a third party, and hence is not predictable or substantially within management control; and,
- It is predominantly rechargeable to the third party, so the risk of ex post variation to the company - or to customers (in general) - should be negligible.

We currently expect there to be a number of large diversion activities in AMP7 due to the construction of HS2 that will cause our diversions expenditure (and therefore grants and contributions) to be significantly higher than the historic averages of both United Utilities and the industry.

Following Ofwat’s botex models making gross cost assessments as (in effect) an implicit allowance for diversions costs, the subsequent adjustment to **“net off” the company forecast of diversions grants and contributions has a material impact on the net totex position of the company**. Whilst this assumption may be immaterial (or even advantageous) for most companies that have ‘normal’ or low levels of diversions activities, the atypical nature of our AMP7 programme significantly increases our exposure to this issue. If left uncorrected, this would mean that the totex provided in the determination would be materially misstated.

We estimate the combined implicit allowance for gross diversions expenditures in the botex models to be £21.49m⁹, whereas the allowed (opex) grants and contributions for diversions is equated to

⁹ We have calculated the implicit allowance for diversions expenditure by removing historic industry expenditure and reconstructing the efficient gross totex whereby the variance between the original allowance and revised position can be concluded to be the implied diversions gross expenditure. We provided the supporting evidence alongside this submission within ‘1014 Cost assessment approach data.zip’ in which we calculate the implicit allowance for United Utilities for gross diversions expenditure as £13.74m for Wastewater and £7.75m in

our plan value of £102.71m over AMP7. **Taken in isolation, the net totex (the gross botex prediction minus the grants and contributions) for diversions activities is therefore assuming that we are able to recover more grants and contributions than expenditure incurred. The result of this is that net totex for the price control is significantly lower than it would be if the gross cost and grants and contributions were calculated concurrently, which we do not believe was Ofwat's intention.**

Given the lack of relationship between the botex prediction and diversion activities within the business plan, it would be more reasonable to exclude these costs and revenues from Ofwat's assessment of botex, or alternatively to recognise the additional costs (such as those related to HS2) as a cost adjustment to the network plus price controls for all companies. **Ofwat should therefore either:**

- a) **deduct the implicit allowances from gross botex and assess diversions independently for all companies, or**
- b) **add the difference between the implicit allowance and business plan cost, £90.11m of gross expenditure for United Utilities, to the baselines for the network plus price controls.**

Either one of these approaches is capable of correcting the observed issues, and provided that one of them is implemented, we are indifferent between approach a or approach b. However, to help facilitate option (b) we have included an appropriate cost adjustment claim as part of this Draft Determination representation. (See supplementary document 'D003d – New cost adjustment: Diversions special factor').

Finally, it is important to note that within our region these activities are (for the greater proportion of value) not related to (normal) developer services and new connections activity. Whilst many diversions result from *developments* in a broad sense, it is often not required as part of companies' services to developers in relation to new connections. For example, diversions will result from infrastructure developments such as changes to highways and the rail network.

In the Draft Determination Ofwat states, "*Our expectation is that diversion activities are fully recoverable by companies. We will apply a 100% assumption for diversions recovery rates*"¹⁰. Whilst this assumption is appropriate for developer driven diversions, it should not apply to diversion activities that fall under the legal requirements of the New Roads and Street Works Act (NRSWA) that legislate¹¹ companies can only recover a proportion of the costs depending upon the nature of the works undertaken.

The legislation set out in The Street Works (Sharing of Costs of Works) (England) Regulations 2000, states (emphasis added)¹²:

"Diversions works executed by an undertaker because of an authority's major works

3.—(1) Where, because of major works initiated by an authority, an undertaker executes diversionary works, the authority shall pay to the undertaker—

- a) *where the major works are major transport works (other than major bridge works or section 86(3) (a) to (g) works) and payment is made in accordance with regulation 8(1), a sum equal to **92.5 per cent.** of the allowable costs of the diversionary works;*

Water. Changes to the efficiency scores result in adjustments to both the network plus and resources controls and so we have stated the total change rather than just the network plus elements (£11.25m and £6.91m respectively).

¹⁰ ['PR19 draft determinations: United Utilities - Securing cost efficiency actions and interventions'](#), p4, Ofwat

¹¹ http://www.legislation.gov.uk/ukxi/2000/3314/pdfs/ukxi_20003314_en.pdf

¹² http://www.legislation.gov.uk/ukxi/2000/3314/pdfs/ukxi_20003314_en.pdf, page 2

- b) *in other cases where payment is made in accordance with regulation 8(1), **a sum equal to 82 per cent.** of the allowable costs of the diversionary works;*
- c) *in all other cases, the allowable costs of the diversionary works.*

(2) *This regulation is subject to regulation 6.”*

NRSWA diversions fall under either category (a) or category (b) depending upon the requirement for the diversion. The overall impact of this within our plan is further set out below in Table 4, where we illustrate the expected recovery rates across the three main types of diversion activity, small developer driven diversions, large NRSWA diversions and HS2 phase 2a/2b.

Table 4 UUV gross expenditure and associated grants and contributions for AMP7 diversion activities

	Water network plus	Wastewater network plus	Wholesale
Developer driven expenditure	£7.32m	£1.84m	£9.16m
Developer driven G&C	(£7.32m)	(£1.84m)	(£9.16m)
NRSWA expenditure	£20.44m	£21.80m	£42.24m
NRSWA G&C	(14.91)	(18.43)	(£33.34m)
HS2 expenditure	£40.44m	£19.76m	£60.20m
HS2 G&C	(£40.44m)	(£19.76m)	(£60.20m)
Net totex for all diversions	£5.54m	£3.37m	£8.91m

While we expect to be able to recover 100% of developer driven diversion expenditure and 100% of diversions due to HS2 construction, NRSWA diversions are (as set out above) not fully recoverable from the third party. The result of this difference in recovery rates is a total of £8.91m net expenditure not reflected in Ofwat’s assessment.

We propose that **Ofwat should adjust the assumption of 100% recovery for all diversions to account for the legislations that prevent this. Ofwat could revise the recovery rate based on a reasonable allocation of activity between recoverable and NRSWA, which based on our typical programmes of work, would be between 90 and 95% (92% for AMP7). Alternatively, Ofwat could require companies to provide forecasts for the different types of diversion activities within the business plans in order to enable them to derive an estimation method that acknowledges this legislation. We propose a solution for the reporting of diversions activities to better differentiate between these activities and provide assurance that they will be accounted correctly at the end of section 2.3.**

We detail the proposed adjustments to the baseline within section 16.2 and 16.3.

2.3. Ofwat approach to allocating HS2/NRSWA diversions to price control grants and contributions

There has been some uncertainty as to how Ofwat intends to account for different diversions grants and contributions, i.e. whether they are treated as “price control” or “non-price control” grants & contributions. We note from the recent APR consultation that Ofwat had intended to treat all diversions income as part of price control income. However, we strongly believe that some types of diversions should be reported as non-price control income. We set out below the approach, and reasoning behind, how we expect the different diversion activities to be allocated to revenues within the Final Determination.

As mentioned in the previous section, our diversion activities and the associated grants and contributions can be broadly broken down into three distinct categories:

1. **Developer driven diversions under s185 of the Water Industry Act** – Moving our existing water/wastewater infrastructure at the request of developers - c£9m projected spend in AMP7, 100% of which is expected to be recovered from developers.
2. **New Roads and Street Works Act 1991 (NRSWA) diversion schemes** - Moving our existing water/wastewater infrastructure at the request of a third party, due to the construction of new road or rail infrastructure in accordance with NRSWA 1991 - c£42m projected spend in AMP7, a proportion of which (82% for road and 92.5% for rail) is expected to be recovered from developers.
3. **One off significant infrastructure diversions, not related to connection activity** (e.g. HS2) – Moving our existing water/wastewater infrastructure to enable the new road/rail infrastructure to be installed outside of NRSWA arrangements at the requested of HS2 Limited - c£60m projected spend in AMP7, 100% of which is expected to be recovered from HS2 Limited.

We recognise that developer driven diversions (category 1) can - but do not always - occur in the provision of new water connections and, as such, it could be argued that this effectively should form part of the wholesale price control services (along with other new connection related activities). We can therefore see why this could potentially be included as part of price control grants and contributions, aligned with the existing grants and contributions from developers.

However, for diversions under NRSWA and other major infrastructure projects (categories 2 & 3) - which form the vast majority of our forecast diversions expenditure - these activities are not being completed as part of developer services related to any new connection activity. They are solely being carried out to enable the new road/rail infrastructure to be installed, at the third party's request, with the third party recognising the requirement for it to pay for that work to be undertaken.

The requirement for these types of diversions are outside of the management control of the incumbent water company and vary significantly from year to year (and hence are difficult to forecast). The level of volatility is even more pronounced in future with regards to HS2 related diversions due to the material size of the project and uncertainty of timing.

Therefore, we strongly believe these types of grants and contributions fit into the rechargeable works category (presented in RAG 4.08 appendix 2), with this being similar in principle to existing rechargeable works such as 'Charging for building over company assets'. **If Ofwat includes these categories of diversion grants and contributions within the price control, and hence subject to the AMP7 WRFIM mechanism, this would introduce a significant degree of unnecessary volatility into price control revenues and hence customer bills.** This seems unnecessary and inappropriate given that the third parties requesting for the work to be undertaken do so with the knowledge of the liability to pay for the work.

We further note the consequential impact on D-MEX of categorising all types of diversions grants and contributions within 'price control' revenues, which we also highlighted within response to Ofwat on the 8th May ('*UU response to Information Request for CMEX and DMEX May 2019*'). The intention of D-MeX is to provide an incentive for companies to provide better customer service to developer customers. Including NRSWA and large infrastructure diversions grants and contributions within 'price control' will unnaturally increase the revenue to which D-MeX incentives would apply. However, the third parties involved in NRSWA and large infrastructure (e.g. HS2) diversions would not be party to the D-MeX survey, and it would leave developers (those engaged in new connections activity) to bear incentive values which are unduly "geared up" by revenues from non-relevant activity. This is likely an unforeseen impact but it seems unlikely that developer customers would

find this acceptable and so should preclude the inclusion of these grants and contributions within the total developer revenues used to calculate rewards/penalties.

Proposed solution

Whilst the PR19 guidance currently includes diversions grants and contributions within price control revenues, it is both desirable and feasible to exclude diversions due to NRSWA and major infrastructure projects through reporting definitions within Ofwat's Regulatory Accounting Guidance, applicable from 2020/21. We note that the current RAGs already provide a specific note to remove all diversions grants and contributions from being reported as price control income. We would support Ofwat either (a) continuing with the existing RAGs guidance into AMP7, or (b) amending the RAGs to only exclude diversions due to NRSWA and major infrastructure projects.

We also believe that there should be a high confidence in reported data which separates out these categories of diversions from others sources (e.g. in support of new property developments). That is because these diversions are required under specific legislation, rather than solely through the general provisions of s185 of the Act. Therefore we propose that the definition of "excluded non-price control diversions" could be (for APR table 2E line definitions for diversion grants and contributions (lines 5/12)):

"Non-price control diversions should be excluded from lines 5/12 and reported in lines 6/13, where they relate to contributions for local and highway authority schemes under the New Roads and Street Works Act 1991, and contributions for work required under legal instruments related to large infrastructure projects (such as HS2). Diversions that are undertaken solely under the provisions of s185 of the Act should be included in lines 5/12"

Since Table 2E is an audited table, Ofwat can require specific audit focus on the diversions grants and contributions reported on line 6/13 (i.e. NRSWA and HS2 related contributions) to ensure that this non-price control diversion grants and contributions are in relation to NRSWA driven and HS2 (or other one-off special infrastructure) schemes only. This will prevent companies from misallocating revenues.

In summary, United Utilities proposes that Ofwat:

- removes the new development operating expenditure (diversions) from its assessment of grants and contributions,
- makes allowance for our diversions cost adjustment claim (see 'D003d – New cost adjustment: Diversions special factor') of £90.11m of gross expenditure,
- aligns its assessment of recovery rates to that imposed by the New Roads and Street Works Act where applicable and,
- classifies diversions grants and contributions due to NRSWA and major infrastructure projects as non-price control grants and contributions, and adopts equivalent changes to reporting guidance to what we have suggested.

3. Ofwat approach to assessing the income offset within the infrastructure charge

3.1. Overview

In the Draft Determination (DD), Ofwat has “capped” UUW’s proposed “income offset” (by c£90m) to equal its infrastructure charge. We consider this capping to be inappropriate, and incorrect, as it does not enable the company to “maintain the balance” of its charges, in accordance with Rule 19 of the new connections charging rules and Defra’s charging guidance to Ofwat.

In this section, we will explain in more detail how we have calculated our proposed income offset value, and how we have demonstrated (and assured) that it is the correct value to maintain the balance of our charges to developers and other customers. We consider that this evidence should be sufficient to demonstrate that Ofwat should remove the cap on the income offset, and allow infrastructure charge grants and contributions to be negative, as set out in our September business plan.

3.2. Justification of UUW’s valuation of the Income Offset:

First, it is necessary to understand that not all of the financial flows to and from developers relate to income from grants & contributions – some of these financial flows are capex. Most significant is the (income offset) asset payments from incumbents to developers for self-lay providers (SLP) laid water mains, which are currently accounted for as capex (whereas income offsets for incumbent laid mains are netted off grants and contributions). These income offset asset payments are, from 2020, transferring to “net off” against infrastructure charges, and will therefore be reported as negative grants and contributions, rather than capex.

In the transition from AMP6 to AMP7, one would expect to see:

- A **reduction** in gross requisitions costs (capex) due to SLP related asset payments moving against the infrastructure charge;
- An **increase** in requisitions grants and contributions due to income offset (for incumbent laid mains) moving to the infrastructure charge; and
- A **reduction** in reported infrastructure charge grants and contributions due to income offsets and asset payments moving to the infrastructure charge.

Therefore, in the transition from AMP6 to AMP7, one would expect to see, overall:

- a reduction in gross (developer related) capex; and
- a (broadly equal) reduction in related grants and contributions.

The amount of this parallel reduction in both capex and grants and contributions depends largely on the levels of SLP activity within an incumbent’s area. SLP activity is far greater than in other regions (SLP’s already undertake around two thirds of contestable on-site connection work), and therefore UUW will have a much higher level of asset payments that currently sit in requisitions capex (i.e. not currently part of grants and contributions) than observed in other companies.

Ofwat’s Draft Determination appears to have adopted our reduced level of gross capex (observed in our proposed new developments totex), but then not accepted the corresponding reduction in grants and contributions.

It is therefore essential that Ofwat consider “maintaining the balance” on a total net expenditure basis, taking account of relevant developer gross expenditure as well as grants and contributions.

Figure 2 below explains the impact of the income offset move for AMP7. It sets out our proposed AMP7 developer costs and grants and contributions based on (a) the prior basis of income offset and asset payments within requisitions costs (for SLP activity) and requisitions income (for incumbent requisitions), and (b) income offset payments moving to the infrastructure charge, and also compares this to the Draft Determination.

The plan submitted by U UW for AMP7 shows a reduction in gross expenditure (on the requisitions line) and corresponding reduction in grants and contributions (on the infrastructure line) so that on a net totex basis there is no overall change, thus demonstrating that our proposals ensure that we have maintained the balance of our charges.

In contrast, Ofwat’s draft determination reflects the reduction in requisitions costs, but does not include corresponding reduction in grants and contributions, and it is clear that the balance of charges has not been maintained.

Figure 2 Illustrating the impact of the move in reporting the income offset for AMP7

		Submitted plan (Pre income offset move) £m			Submitted Plan (Post income offset move) £m			Draft Determination £m		
Totex	Gross Developer Totex	Requisitions: WN+	136.9	Note 1	Requisitions: WN+	54.6	Requisitions: WN+	65.3		
		Network Reinforcement	40.7		Network Reinforcement	40.7	Network Reinforcement	40.5		
		Other	114.6		Other	114.6	Other	108.8		
		Totex (A)	292.1		Totex (A)	209.8	Totex (A)	214.6		
APP 28	Grants and Contributions	Infrastructure	37.3	Note 4	Infrastructure	(88.3)	Infrastructure	0.0		
		Requisitions	25.2	Note 2	Requisitions	52.3	Requisitions	52.7		
		Other contributions	97.4	Note 3	Other contributions	113.6	Other contributions	125.5		
		Total G&C (B)	159.9		Total G&C (B)	77.6	Total G&C (B)	178.2		
Net	Net Totex (A-B)	132.2		Net Totex (A-B)	132.2	Net Totex (A-B)	36.4			

U UW maintained balance

Balance not maintained

Figure 2 sets out U UW’s basis of demonstrating that its proposals maintain the balance of charges across developers and other customers, and how that includes account taken of the income offset asset payments to developers for SLP activity, which is (currently) reported as capex.

As explained in our PR19 Business Plan data table commentary for App 28, in AMP7, the rules around how the income offset is applied are changing, and this has an impact on a number of lines of the table above. The changes impact the following:

- Totex: Requisitions expenditure (Water) – see Table 5/Note 1
- G&C: Requisition income (Water) – see Table 6/Note 2
- G&C: Other contributions (Water) – see Table 7/Note 3
- G&C: Infrastructure (Water) – see Table 8/Note 4

The key changes between the previous basis of developer charges and that being implemented in AMP7 is as set out in the following tables.

Table 5 Impact of changes to the income offset on requisition costs

Note 1 - Requisitions costs	£m	Notes
Requisitions capex (pre basis)	136.9	Pre-basis – includes income offset (asset payments) for SLP activity
Removal of asset payment for SLP activity	-96.1	X = income offset asset payments on current basis
Requisitions expenditure for SLP activity	13.8	A = UUW costs for SLP activity inspection, connection and adoption of water mains on current basis
Requisitions capex (post basis)	54.6	Within WS1 line 14. Requisition capex for UU laid mains, plus some costs for adopted SLP mains

Table 6 Impact of changes to the income offset on requisition grants and contributions (g&c)

Requisitions g&c	£m	Notes
Requisitions income (pre basis)	25.2	Pre-basis – includes income offset for incumbent activity
Removal of income offset for incumbent requisitions	29.5	Y = income offset on current basis
Removal of developer contribution for SLP activity	-2.4	B = SLP contribution on current basis
Requisitions income (post basis)	52.3	Per App28 line 9. Reflects 100% recovery of requisitions costs against incumbent laid mains

Table 7 Impact of changes to the income offset on other contributions

Note 3 - Other contributions	£m	Notes
Other contributions (pre basis)	97.4	This consists of £34.2m connections, £62.7m diversions and £0.5m other
Changes in developer charges	16.2	Sum of A and B = charges required for inspection, connection and adoption of water mains (previously recovered through requisitions)
Other contributions (post basis)	113.6	

Table 8 Impact of changes to the income offset on infrastructure income

Note 4 - Infrastructure income	£m	£m	Notes
Infrastructure income (pre basis)	37.3		Pre-basis – excludes income offset & asset payments
Income offset (to maintain balance):			
<i>from SLP asset payments</i>		-96.1	X, per Note 1 requisitions costs table above
<i>from income offset for incumbent work</i>		-29.5	Y, per Note 2 requisitions g&c table above
Total	-125.6		Per App28 line 14.
Infrastructure income (post basis)	-88.3		Per App28 line 8.

These tables set out the key movements between the various lines between the previous (AMP6) basis of accounting for income offsets, and the AMP7 “post basis” of reflecting the income offset against the infrastructure charge.

Table 9 below illustrates the amount developers pay, net of what they receive (via the income offset), has stayed the same.

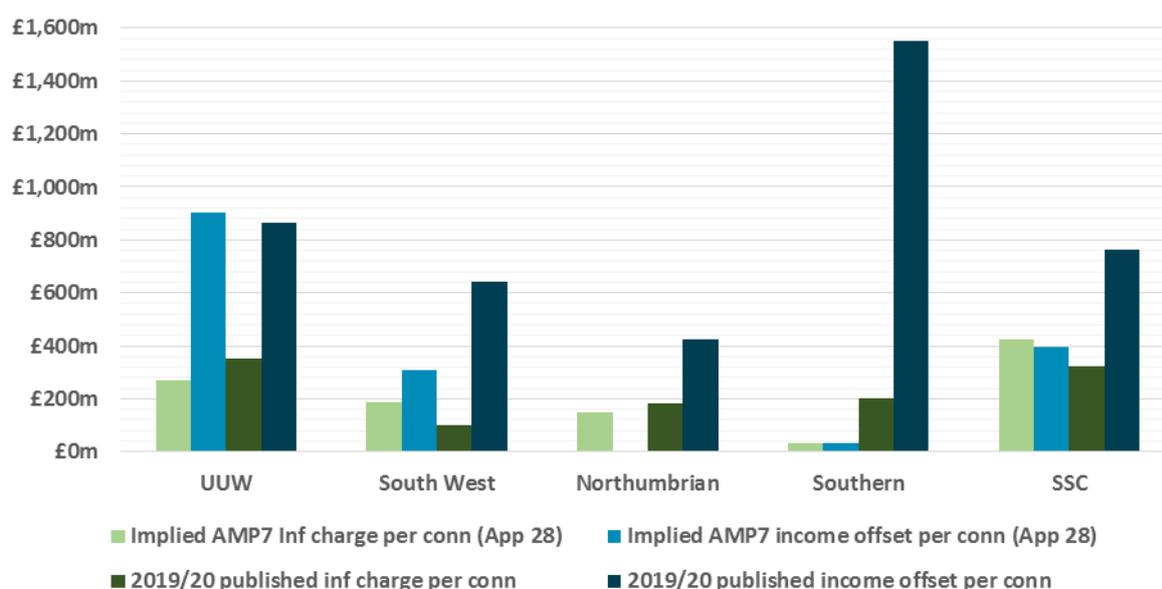
Table 9 illustrates the amount developers pay, net of what they receive (via the income offset)

Net developer payments	Pre income offset move £m	Post income offset move £m	Notes
Total Grants and Contributions	159.9	77.6	Line reference (B) in the diagram (App 28)
Asset payment for SLP activity	(82.3)		As referenced in Note 1 –Requisition costs
Total (net of income offset)	77.6	77.6	

The approach follows on from developments in our AMP6 charges, in which we have already converted our income offset payments into “per plot” value, to enable a smooth transition to being moved to the infrastructure charge (which is also, effectively, charged “per plot”). The implied level of income offset payments for U UW in AMP7 is consistent with our published income offset payments in our [new connections charges scheme](#).¹³

Figure 3 below compares the current published charges (2019/20) for infrastructure and income offset to AMP7 submissions for the 5 water companies that currently offer a fixed income offset “per plot” (NB. most water companies only offer a fixed percentage, i.e. not a “per plot” value).

Figure 3 Infrastructure charge versus Income offset -Current vs AMP7



¹³ https://www.unitedutilities.com/globalassets/documents/pdf/acc19_united-utilities-water-limited-new-connection-and-developer-services-charges-scheme-2019-2020.pdf

It is clear from this that U UW’s AMP7 plan for income offsets is consistent with its current charges, which demonstrates that our AMP7 plan maintains the balance between developers and other customers.

Whilst we are not able to comment on the approach taken by other water companies it is not clear how they have been able to demonstrate that they have maintained the balance. We also note that the pre-existing balance of company charges differs, and therefore one would not expect income offset values to be comparable between companies.

3.3. Rule 19: Maintaining the balance – assurance of U UW’s approach

This section sets out how we have tested and assured that our charges are consistent with the requirement to maintain the balance of charges in accordance with Rule 19 of the new connections charging rules.

Rule 19 states; *“the present **balance of charges** between Developers and other customers prior to the implementation of these rules is broadly maintained”*.

In line with the charging rules, connections charges, infrastructure charges and gross requisitions must relate to the costs of those activities. Therefore, the only way of maintaining the balance is through setting the value of the income offset.

In June 2017, Water UK published a report “Charging Consultation Response” which proposed three methods that could be used for assessing the balance of charges between developers and bill paying customers:

- a) Net developer contribution per property compared against average bill;
- b) Net developer contribution as a proportion of the costs attributed to newly connected properties;
- c) Net contribution for hypothetical new development scenarios.

For 2018/19 charges, we engaged external assurance (with Reckon LLP) in order to assess compliance with this charging rule, using each of the methods described above.

In their report Reckon stated:

“We agree with United Utilities’ that the determination of the income offset is the key means available to comply with Rule 19. We consider that, on the basis of the analysis it has carried out, United Utilities’ forecast level of developer contributions for new water mains (which reflect its planned income offset arrangements for water mains) is reasonable for the purpose of ensuring that the present balance of charges between developers and other customers is broadly maintained in 2018/19.”

The same approach to maintaining the balance was taken for 2019/20 charges and for the PR19 business plan submission.

Table 10 below represents the assessment of maintaining the balance of charges for 2019/20 using each of three assessment methods.

Table 10 assessment of maintaining the balance of charges for 2019/20 using each of three assessment methods proposed by Water UK

Assessment method	Target	Results
Method 1: Average developer contribution compared to average bill	In line with AMP 6 average to date ratio of 3:1	Broadly maintained at 2.8:1

Method 2: Average developer contribution compared to capital expenditure	In line with AMP 6 average to date at 55%	Broadly maintained at 57%
Method 3: Scenarios	Equal number of increases and decreases in developer contributions to new water mains based on expected dataset excluding the effect of inflation	<p>Schemes where costs have increased by > inflation – 67%</p> <p>Schemes where costs have either decreased or increased by < inflation – 33%</p>

In setting charges for 2019/20, the balance of charges for U UW between Developers and other customers is maintained through the setting of the income offset applied when determining the developer or self-lay provider contribution towards new water mains.

The approach taken in the PR19 business plan submission has not changed and broadly maintains the balance of contributions between developers and other customers based on historic U UW charges and income offsets.

Ofwat’s recent consultation on new connections charging rules states:

“As part of our ongoing monitoring of charging arrangements, in 2018 we reviewed how companies had interpreted rule 19, and how it was reflected in PR19 business plans. As part of this, we invited all 17 of the incumbent companies to receive individual feedback from us on their charging arrangements, and we spoke to most of these companies about how they had implemented rule 19.”

Following this, we note that:

- U UW had discussions with Ofwat and received feedback on its new developer charges scheme. No concerns were raised on the approach to income offset, how the numbers were derived, or our approach to maintaining the balance.
- Ofwat uses the Company Monitoring Framework to highlight good and bad practice, and assess companies’ charging information. Ofwat assessed that U UW have exceeded expectations for the first year of the new connection charging arrangements. One of only two companies to receive this assessment.

This, in addition to our independent assurance from Reckon, acts to endorse the approach we have taken to the income offset and our compliance with Rule 19.

3.4. Potential consequences of Ofwat’s capping of U UW’s income offset value

Based on the evidence presented above, we believe that Ofwat should make appropriate changes in its Final Determination to reset income Offset values back to the levels set out in our September business plan. However, it is helpful to understand the potential consequences of implementing the changes to the income offset as set out in the draft determination, in addition to our concerns about demonstrating that we are compliant with requirement to maintain the balance of charges under Rule 19 of the new connections charging rules.

Impact on other charging rules

Rule 18 states *“Relevant undertakers must determine what types of charges may or may not be imposed and the amount of any charges that may be imposed in accordance with the principle that charges covered by these rules should reflect: (a) fairness and affordability; (b) environmental protection; (c) stability and predictability; and (d) transparency and customer-focused service.”*

Ofwat's proposed capping of the income offset would be contrary to the charging principles that charges should be stable and predictable. The approach significantly changes the balance of contribution to costs between developer customers and end user customers, resulting in all developers contributing more to costs. The impact of the Draft Determination on developers and NAVs is significant – a c.60-70% reduction in income offset payments, which we estimate would translate into around 25% increase in developer charges for a typical development – this would seem contrary to parts (a) and (c) of Rule 18.

Rule 21 states '*Charges (including any Income Offsets) and any Asset Payments and arrangements for when they are each payable must be set in accordance with the principle that they should promote effective competition for Contestable Work.*' Capping the income offset to the value of the infrastructure charge, as proposed in the draft determination, may have an adverse impact on competition and developer choice. This arises as the reduced value of the income offset could affect the viability of a site for an SLP or a NAV (depending on their commercial arrangement with the developer) in tendering for work. This would reduce developer choice, potentially resulting in an increase in statutory requisitions and connections activity undertaken by UUW, as some of the benefits provided by self-lay providers to developers would have been eroded.

Impact on developer customers

UUW carries out a long-term programme of stakeholder engagement over several years (including HBF, FWC, HBA) with a commitment to sharing information and keeping stakeholders informed with upcoming changes to structure of charges, and taking their input into consideration at all stages of the process.

These customers frequently provide feedback that their members most value certainty of charges, with no cost shocks. The nature of the building industry means that developers are often making decisions on developments several years in advance, and major changes in charges over a 3-4 year period could have a material impact on the viability of those developments.

Significant changes to the approach to the method of calculating the income offset payment seems likely to lead to:

- Increased costs for developer customers
- Significant unpredictability in income offset payments for existing/upcoming developments
- Increases in the number of complaints, and impacts on D-MeX
- Future uncertainty, leading to impacts on NAV applications
- Disruption to the SLP market

If, at any point, we were required to implement significant changes to the income offset (such as that outlined in the draft determination), we would need to transition this change over a number of years. This would allow us to:

- fully engage with developer customers on the impact of the change in approach
- gradually move the balance of charges, reducing the impact on our developer customers
- support developer customers in preparing for the changes and allow them to factor in these calculations when assessing the viability of a development
- manage the impact on bills and our requirement to support bill stability.

3.5. Conclusions

In summary, we consider that we have provided Ofwat with sufficient evidence to support reinstatement of the income offset values proposed in the company's September business plan. In particular, it is essential that:

- Ofwat recognises that U UW’s requirements to “maintain the balance” requires a transfer of SLP related asset payments, which currently are reported as part of Capex – therefore maintaining the balance cannot be demonstrated solely by examining changes in grants& contributions;
- Ofwat’s accepts that this transfer of contributions from capex will be larger for U UW than other companies, due to our high level of SLP market penetration; and
- Ofwat recognises that potential impact on developer customers, NAV, and U UW’s charging compliance of implementing Ofwat’s proposal to cap the income offset at the level of the infrastructure charge.

Finally, we note that this is a highly technical area, requiring some detailed understanding of the various accounting entries and charging requirements. We would welcome further working level discussions with Ofwat, with a view to achieving satisfactory resolution of this issue.

In summary, United Utilities proposes that Ofwat:

- **Ofwat should reinstate U UW’s proposed income offset value from its September 2018 business plan for the Final Determination. The proposed developer costs and grants & contributions set out in our September plan ensures that we are able to meet our requirement to maintain the balance in accordance with Rule 19 of the new connections charging rules.**
- **Ofwat should contact U UW for further discussion if it considers our evidence insufficient, given the technical nature of the issue, its material value and its potential impact on developer customers.**

We detail the proposed adjustments to the baseline within section 16.4.

4. Update to claim: Distance to Landbank

In its draft determination, Ofwat rejects the 'Distance to Landbank' cost adjustment claim (NWT-BIO701001) for the Bioresources Price Control. The claim was based on the assumption of two drivers of expenditure not being accurately represented by the proposed explanatory factors:

- Additional costs outside of base maintenance to drive further to suitable landbank (£22.156m)
- Additional costs outside of base maintenance to maintain Industrial Emissions Directive (IED) permits required to resiliently manage landbank risk (£10.029m)

Our business plan submission included the costs associated with IED. These were also included in the cost adjustment claim due to the uncertainty around how Ofwat intended to treat costs within its botex models. Accepting that Ofwat has assessed these costs within its assessments of unmodelled costs, this component of the claim is no longer required.

The second aspect to the claim related to the additional distance that biosolids must be transported in order to reach suitable land for recycling at a higher cost than the industry average. One of the reasons for the claim being rejected is because Ofwat felt that it failed to offset benefits resulting from having perceived lower than average costs of transporting raw sludge because the population is not as dispersed as in other water company areas.

We have investigated co-location data in both the Information Platform tables (WwTW Sludge Production Sites for population served greater than 2000) and in the performance tables submitted for PR19 and as part of 2019 Annual Performance Review (APR). The definition of co-located has been updated for reporting in the 2019 APR¹⁴. The key change in reporting is from the removal of intermediate thickening sites from the scope of the calculation.

When we report against this new definition, our proportion of co-located sludge is significantly lower than previously stated and is broadly similar to Anglian Water's submission at PR19. We have a significant proportion of sludge treated at intermediate thickening sites prior to further transport to digestion sites. This approach enables us to optimise transport costs.

We recognise that further work is required to understand the relative costs of sludge movements between companies and this can be done as more and consistent market information becomes available. We will continue to use the developing markets in bioresources, including sludge trading, to drive further efficiency into our activities. We maintain that the availability of suitable agricultural landbank in the Northwest region is still a factor that drives additional cost into our activities. However, we recognise the opportunities that a more competitive market might provide and improved data quality that will result from a separated price control that will support future understanding of requirements.

Of greater importance to the Bioresources price control is the consistent reporting of liquor treatment recharges between Wastewater Network Plus and Bioresources across the industry, which we address within section 14.

In summary, we propose that Ofwat:

- **Notes that we are withdrawing our cost adjustment claim relating to the distance to landbank.**
- **We will continue to use the developing markets in bioresources, including sludge trading, to drive further efficiency into our activities.**

¹⁴ Table 4R Non-Financial Data Ww Network and Sludge – Wholesale Wastewater Part B Sludge, line 5 'Percentage of sludge produced and treated at a site of STW and STC co-location'

5. Update to claim: Combination of exogenous factors impacting surface water runoff

Within ‘D003a – Update to claim: Combination of exogenous factors impacting surface water runoff’, we provide our more comprehensive response to the short note provided in UUW.CE.A1 of “I001 - United Utilities Actions Response Document”.

This document addresses the feedback received in the assessment of the cost adjustment claim of £87.7m for the Wastewater Network+ baseline. It supplements the information previously supplied within the May and September 2018 submissions and does not seek to repeat information contained within these other than for where it directly relates to an issue raised. We address each of the failed assessment gates separately, responding to the issues raised in turn and providing clarity and further validation where necessary.

5.1. Feedback from the IAP

The results of the assessment of the claim is contained within FM_CAC_NWT_IAP under NWT-WWN801001 and summarised in Table 11 below. Overall, Ofwat assessed the claim as having a:

“lack of evidence to demonstrate the need for adjustment. Costs estimates are not robust. Although United Utilities Water demonstrates that it is an outlier regarding surface water runoff, it has not presented convincing evidence that this results in a more expensive suite of assets and thus higher costs.”

Table 11 IAP gate results for cost adjustment claim WWN801001 - Combination of exogenous factors impacting surface water runoff

Test area	Assessment
Need for investment	N/A
Need for adjustment	Fail
Management control	Pass
Best option for customers	N/A
Robustness and efficiency of costs	Fail
Customer protection	N/A
Affordability	N/A
Board assurance	N/A

We have reviewed the feedback received from Ofwat within the IAP for each of these failed gateways and believe that the additional evidence summarised below will provide Ofwat with the information required to accept the claim and include it as an addition to the baseline for the Water Resources price control.

5.2. Summary of response

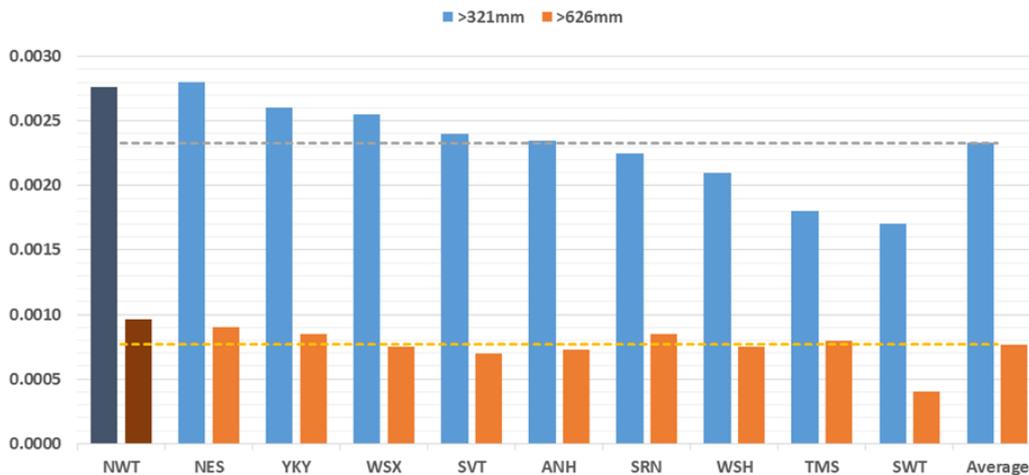
In reviewing the comments for each of the assessment gates, we believe that key pieces of information have not been fully accounted for which - when coupled with incorrect data provided by UUW at PR14 – has led Ofwat to an erroneous conclusion. We remain confident that the need for an adjustment is justified from both an econometric and engineering perspective and that there are

“regional operating circumstances with significant impact on costs” which support the need for a cost adjustment claim.

In our response to the draft determination, we provide further clarity to Ofwat that:

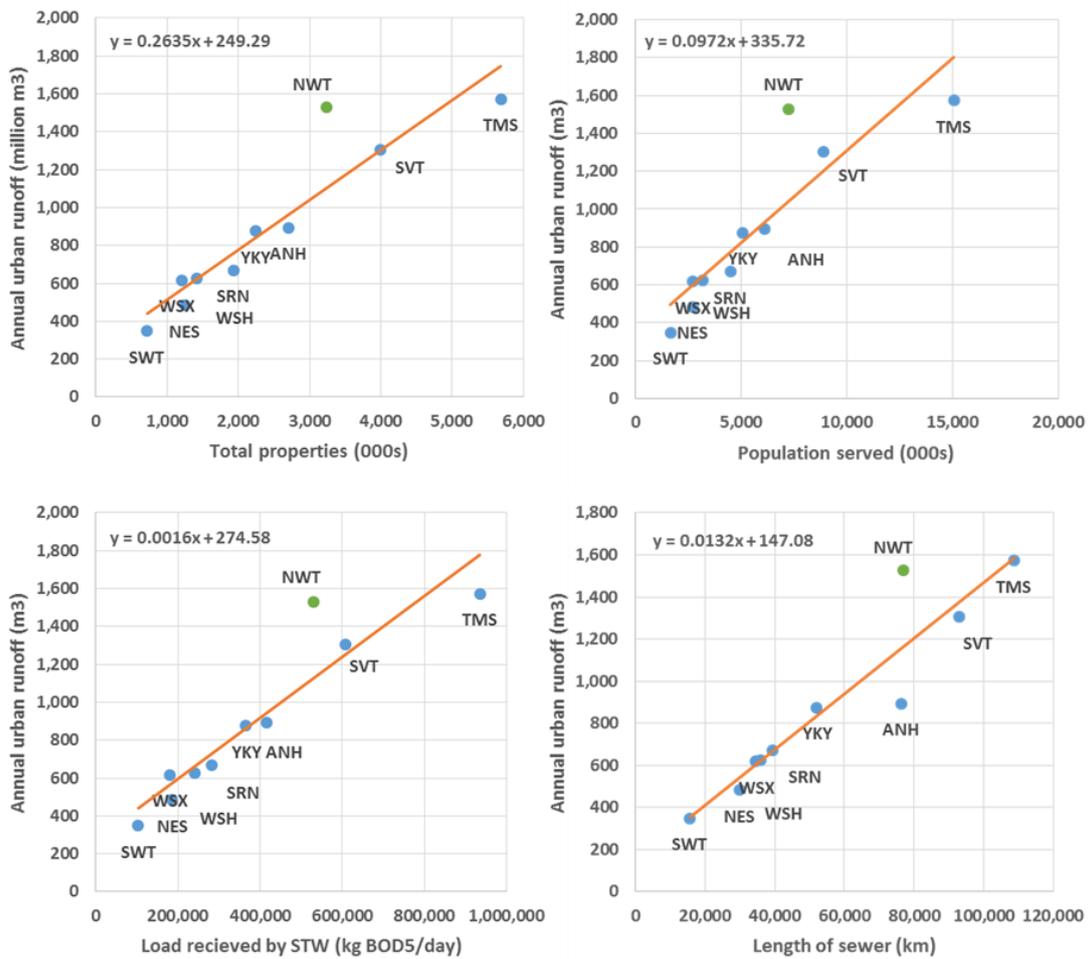
- United Utilities receives more rainfall within our urban areas than the majority of regions within England and Wales, with 17 out of the top 26 wettest cities falling within our region;
- Ofwat’s assumption that we do not operate a network of larger sewer assets was made using erroneous data and when corrected it shows that the asset base is indeed larger (Figure 4);

Figure 4 Updated asset characteristics: length per sewer connection



- Ofwat’s assumption that correlation with scale implies that models will provide adequate allowance for drainage requirements for all companies is misplaced and not supported by close analysis of the actual relationships. Whilst this assumption may hold for many companies within the industry, analysis of scale and drainage requirements illustrates that UUK are clear and significant outliers and therefore scale does not adequately allow for drainage requirements (Figure 5).

Figure 5 Company relationships between different scale variables and annual urban runoff



We are confident that the information submitted in ‘D003a - Update to claim: Combination of exogenous factors impacting surface water runoff’, taken alongside that originally supplied within our submission, provides sufficient evidence in respect of each of the issues raised within the assessment to be explained fully. This should enable Ofwat to have greater confidence in the underlying requirement and valuation of the claim and thereby be able to accept the adjustment in its entirety. We would welcome further discussion on any aspect of this claim if it were required.

In summary, we propose that:

- **Ofwat reviews the further evidence on this cost adjustment claim, contained in ‘D003a – Update to claim: Combination of exogenous factors impacting surface water runoff’, and therefore accepts our cost adjustment claim of £87.7m.**

We detail the proposed adjustments to the baseline within section 16.5.

6. Update to claim: Keeping Our Reservoirs Resilient

Within ‘D003b – Update to claim: Keeping Our Reservoirs Resilient’, we provide our more comprehensive response to the feedback received in the assessment of the cost adjustment claim of £51.2m for the Water Resources baseline. This supplements the information previously supplied within the May and September 2018 submissions and does not seek to repeat information contained within these other than for where it directly relates to an issue raised. We address each of the assessment gates separately, responding to the issues raised in turn and providing clarity and further validation where necessary.

6.1. Feedback from the IAP

In its assessment of the cost adjustment claim, Ofwat notes:

“While the claim has some merit due to regulatory requirements, the quality of the claim does not meet our expectations. United Utilities Water provides only limited evidence, particularly as regards the need for investment and robustness and efficiency of costs. It may be that United Utilities Water is going beyond what is required by the legislation from HSE (as this does not cover all of their reservoirs), and it is not clear whether customers may be willing to pay for any additional level of service. Additional evidence would be helpful to understand whether costs are efficient.”

The resulting gate results within the IAP are set out within Table 12 below.

Table 12 IAP gate results for cost adjustment claim WR801001 - Keeping Our Reservoirs Resilient

Test area	Assessment
Need for investment	Partial pass
Need for adjustment	Partial pass
Management control	Pass
Best option for customers	Fail
Robustness and efficiency of costs	Fail
Customer protection	Fail
Affordability	Partial pass
Board assurance	Pass

We have reviewed the feedback received from Ofwat within the IAP for each of these failed gateways and believe that the additional evidence summarised below will provide Ofwat with the information required to accept the claim and include it as an addition to the baseline for the Water Resources price control.

6.2. Summary of response

In reviewing the comments for each of the assessment gates, we have either further clarified our position where we feel that there has been a misunderstanding or provided further evidence to support Ofwat in its assessment. We remain confident that the need for an adjustment is justified from an econometric, engineering and safety perspective and that there are “regional operating circumstances with significant impact on costs” which support the need for a cost adjustment claim.

In our response to the draft determination, we provide further clarity to Ofwat:

- Of the robust optioneering process we undertake when a reservoir is identified as falling within an HSE defined unacceptable risk category with a summary of the options assessed for each intervention;
- Of the cost assurance undertaken by Mott MacDonald as well as the supporting evidence that each of our proposed interventions are efficient; and,
- That our 'equivalent population de-risked' performance commitment strikes the right balance between consequence and probability of failure, and will incentivise the right behaviours whilst enabling more effective communication with customers and stakeholders.

We are confident that the information submitted in '*D003b – Update to claim: Keeping Our Reservoirs Resilient*', taken alongside that originally supplied within our submission, provides the evidence required for each of the issues raised within the assessment to be explained fully. This should provide Ofwat with greater confidence in the underlying requirement and valuation of the claim and thereby be able to accept the adjustment in its entirety. We would welcome further discussion on any aspect of this claim if it were required.

In summary, we propose that:

- **Ofwat reviews the further evidence on this cost adjustment claim, contained in '*D003b – Update to claim: Keeping Our Reservoirs Resilient*', and therefore accepts our cost adjustment claim of £51.2m**

We detail the proposed adjustments to the baseline within section 16.6.

7. New cost adjustment: Diversions special factor

This new claim covers both the Water and Wastewater network plus price controls and is for the full value (less the implicit allowance) of expected gross expenditure for diversion activities of £111.6m (as set out within Table 4 on page 13).

Now that we have visibility of how Ofwat intends to calculate grants and contributions and the issues that this causes to the derivation of net totex for diversion activities described within section 2.2 of this document, we are submitting a new cost adjustment claim along with our DD representation, to enable Ofwat to adjust its view of the baseline accordingly.

We do not believe that Ofwat intended to make a detrimental adjustment in calculating grants and contributions and anticipate that it will correct this prior to the Final Determinations. In order to simplify the process, we therefore submit the cost adjustment claim '*D003d – New cost adjustment: Diversions special factor*'. We anticipate that a wider industry query will be required to make the appropriate adjustments for all companies and to calculate the implicit allowance accurately.

We have also provided a version of Ofwat's special cost factor tables Wn6 and WWn8, within document "*Cost assessment data tables – WS2, Wn6 and WWn8*".

In summary, we propose that:

- Ofwat reviews the evidence on this cost adjustment claim, contained in '*D003d – New cost adjustment: Diversions special factor*', and therefore accepts our cost adjustment claim of £90.11m of gross cost.

We detail the proposed adjustments to the baseline within section 16.1.

8. Update to claim: Manchester and Pennines Resilience

Within ‘D003c – Update to claim: Manchester and Pennines Resilience’, we provide our more comprehensive response to the feedback received in the assessment of the cost adjustment claim for the Water Network+ baseline due to the “Manchester & Pennines Resilience” scheme. In reviewing the comments for each of the assessment gates and comparing to our updated views on the programme (as it matures) we believe that the reductions to the cost for the scheme are not appropriate and would put at risk our ability to deliver the DPC in the most effective way. We remain confident that the need for an adjustment is justified from both an econometric and engineering perspective and that there are “*regional operating circumstances with significant impact on costs*” which support the need for a cost adjustment claim.

8.1. Feedback from the IAP

The results of the assessment of the claim is contained within FM_CAC_NWT_IAP under NWT-WN601001 and summarised in Table 13 below. Overall, Ofwat assessed the claim as having:

*“provided extensive documentation to support its proposed solution for the M&PR scheme and hence the need for AMP7 study and project preparation funds. However, when benchmarked against recent large and complex projects, **the value of NWT’s cost adjustment claim appears excessive. Furthermore, NWT’s claim amount includes ~9% appointee overhead cost. The overhead cost has been removed and the remaining costs trimmed so that the cost adjustment value lies within the benchmarking range.**”*

Table 13 IAP gate results for cost adjustment claim WN601001 - Manchester & Pennine resilience

Test area	Assessment
Need for investment	Pass
Need for adjustment	Partial pass
Management control	Partial pass
Best option for customers	Pass
Robustness and efficiency of costs	Partial pass
Customer protection	Pass
Affordability	Pass
Board assurance	Pass

We have reviewed the feedback received from Ofwat within the IAP and the justification for reducing the cost assumptions associated with delivering the DPC and believe that the additional evidence summarised below will provide Ofwat with the information required to accept the claim and include it as an addition to the baseline for the Water Resources price control.

8.2. Summary of response

We are pleased that Ofwat has accepted the need for the adjustment and view the majority of the costs that we have proposed as being efficient. In reviewing the comments for each of the assessment gates, we have either further clarified our position where we feel that there has been a misunderstanding or provided further evidence to support Ofwat in its assessment. We remain

confident that the need for an adjustment is justified from both an econometric and engineering perspective and that there are “*regional operating circumstances with significant impact on costs*” which support the need for a cost adjustment claim.

In our response to the draft determination, we maintain that our original submission value is still valid and so provide further clarity to Ofwat that:

- Whilst the complete removal of all overhead costs appears excessive given the requirements to deliver the DPC effectively taking into consideration the delivery requirements from past experiences, we are withdrawing this element of the claim and will instead seek to attempt to manage this ‘in the round’.
- However, the approach taken by Ofwat to assessing the required ground investigations costs is too simplistic for a project of this complexity and therefore underestimates the required expenditure to deliver the most appropriate investigations to provide a potential CAP with the necessary confidence to proceed with the project.

We are confident that the information provided in ‘*D003c – Update to claim: Manchester and Pennines Resilience*’, taken alongside that originally supplied within our submission, provides the evidence required for Ofwat to have greater certainty in the underlying requirement and valuation of the claim and thereby accept the revised adjustment in its entirety. We would welcome further discussion on any aspect if it were required.

In summary, we propose that:

- **Ofwat notes the removal of the overhead from the project in order to bring the expenditure more in line with Ofwat’s expectations.**
- **Ofwat reviews the additional evidence on this cost adjustment claim, contained in ‘*D003c – Update to claim: Manchester and Pennines Resilience*’, and increases its allowance for this cost adjustment claim from £57m to £67m.**

We detail the proposed adjustments to the baseline within section 16.7.

9. WINEP cost adjustment mechanism

In the Draft Determination appendix, Ofwat states, “Where we made an allowance for amber schemes, we use a mechanism to adjust our totex for schemes which are later confirmed as not required”¹⁵.

Given that this is envisaged as a standard mechanism across the industry, we would expect to see consistent wording within each of the corresponding determinations. However, within Severn Trent’s equivalent, Ofwat explicitly states, “we will use a unit cost mechanism to make adjustments if other schemes in the WINEP but for which no allowance has been made in our determination are subsequently confirmed as being required”. The absence of any equivalent confirmation within our determination would therefore imply that Ofwat is not accepting of the mechanism being a two-sided adjustment for United Utilities – even though it does propose to do so for Severn Trent. Whilst it may appear a trivial omission, **a one-sided mechanism will leave us exposed to greater risk than would be the case under Severn Trent’s mechanism and we do not understand the reason for the difference.**

In line with the expectations set out in the PR19 Methodology, in our submission we proposed a cost adjustment mechanism for unconfirmed WINEP schemes. Importantly, the proposal was for a **two-sided mechanism**, in other words, a mechanism that would allow for the removal as well as the addition of schemes to our programme. This was designed to ensure the expenditure required to deliver our WINEP could respond dynamically to changes in requirements thereby ensuring that customers only pay for the enhancements that we deliver on their behalf (as set out in the Environment Agency’s Water Industry National Environment Programme).

We proposed this because whilst we have worked closer than ever before with the Environment Agency to challenge and shape the content of the Water Industry National Environment Plan 3 (WINEP3) for the North West, in order to ensure it will deliver significant environmental improvements as efficiently as possible there is always a possibility that new needs arise. Some examples of emerging issues could include;

- the designation of new bathing waters where enhancement to our discharges is required to secure the bathing water classification at the minimum standard of at least sufficient,
- our Water Framework Directive interventions becoming cost beneficial in River Basin Management Plan 3 because measures required to be delivered by others become more cost effective thereby changing the outcome of the cost benefit assessment for the river catchment,
- newly identified no deterioration schemes due to changes in the projected population or trade effluent within a catchment

The potential for “red” certainty schemes turning to green within the AMP7 period was envisaged in the Environment Agency’s traffic light coding scheme for the certainty of schemes, which is shown in Table 14 below. As our business plan does not include red schemes and the WINEP uncertainty mechanism within the Draft Determination only allows for the withdrawal of schemes, there is the potential that we are not in a position to deliver the final list of schemes that the Minister signs off as requirements. It stands to reason that if a red scheme were to be included within the final WINEP that (given its previous failure of cost-benefit) the unit rates currently proposed would be lower than those expected (on average) for a new addition, and so the balance of risk is skewed towards the company (as the cost adjustment mechanism will likely not fully represent the cost of a formerly “red” scheme) and not customers.

¹⁵ [‘R19 draft determinations: United Utilities - Cost efficiency draft determination appendix’](#), p8

Table 14 Environment Agency WINEP traffic light definitions¹⁶

Traffic light	Evidence	Certainty	Status of measure	Justification
Green	Available and confirmed	High	Certain	Evidence that water company action is needed, there is clarity on the required measure, the measure is considered cost beneficial and affordable (where this assessment is applicable). Affordability is a ministerial decision.
Amber		Medium	Indicative	In the business plan 2015-2020 this was called the uncertainty programme. Evidence that water company action is needed, there is a clarity of a developing clarity on the required measure, the measure is considered cost beneficial, but awaiting ministerial decision on affordability (2021 River Basin Management Plan sign off). Schemes may move to green during the business plan period 2020-2025.
Red		Low	Unconfirmed	Evidence that water company action is needed but the measure is not yet clarified, <u>may turn amber or green during the business plan period 2020-2025.</u>
Purple	Needs gathering	Minimal	Provides a direction of travel	The Environment Agency know that the water company will need to do work in the future.

Within our proposed mechanism, we also included the ability for us to **recover efficiently incurred sunk costs** to in the event that a scheme is removed but where work has already commenced. Evidence and assurance of the sunk costs incurred if a project is removed from the programme will be fully auditable and validated by our customer challenge group to ensure that we are only able to recover efficiently incurred expenditure. This feature is important, as it is essential that we commence delivery of many of our schemes well in advance of ministerial sign off in December 2021 if we are to meet our regulatory delivery dates.

The scale of work required for the Water Framework Directive, not just in the North West but also across the whole of Europe would make it completely infeasible if we were not to take this approach, as our supply chains cannot manage such a condensed programme of work. Ofwat has not referred to this within our Determination and so we can only assume that Ofwat does not propose to reflect this within the final mechanism. **Ofwat should reconsider this and enable us to recover efficiently incurred sunk costs as we set out in our original proposal.** In the meantime, we continue to work with the Environment Agency to turn the Water Framework Directive schemes to “green” certainty status as soon as possible to manage this risk.

¹⁶ Environment Agency, PR19 Planning – Traffic light system for identifying measures for the Water Industry National Environment Programme and managing uncertainty, version 3.3

In AMP6, we have an established ‘*exchange mechanism*’ with the EA whereby if the driver for a scheme is removed or circumstances require that we cannot deliver to a certain timeline then we collectively negotiate a neutral position through either the acceleration (or additional delivery) of an alternative scheme. This mechanism ensures that both the environment and customers retain the original level of benefits committed at PR14 with no change to expenditure requirements. We believe that this is what the standardised WINEP cost adjustment mechanism should aim to achieve.

However, **in its current form, we would not be able to maintain this dynamic relationship with the EA and the cost adjustment mechanism would put an end to our ability to accept negotiations with the EA.** This is because the mechanism only accounts for the removal of schemes with no corresponding adjustment for the new scheme that we accept. This would leave the company with reduced totex to deliver the same environmental outcomes, which we do not believe is appropriate.

In summary, we propose that:

- Ofwat amends our WINEP cost adjustment mechanism for it to be a two-way mechanism, reflecting the potential for the addition as well as the removal of schemes and,
- Ofwat allows companies to recover efficiently incurred sunk costs from schemes that are subsequently removed from the WINEP.

9.1. Updates on expected deliverability of WINEP3

Upon receiving WINEP3 from the Environment Agency at the end of March 2018, we have begun the preliminary work associated with the delivery of a number of green and amber schemes. The need for us to commence delivery now is imperative, as we aim to deliver a significant number of water quality improvement schemes by 2021. Following extensive preparatory work using intelligence gained from site investigations, sampling as well as feedback from our four Construction Delivery Partners, it has become apparent there are five schemes with regulatory dates in 2021 that we do not believe are achievable. These schemes are in Table 15 below.

Table 15 WINEP schemes with unachievable regulatory dates

Project	Primary WINEP driver	Significant factors driving long delivery timeframes	WINEP3 regulatory date
Forton WwTW	WFD_IMPg	Significant population growth needs to be accommodated in the scheme. This is leading to a substantial rebuild of the WwTW and network upgrades	31/12/21
Chipping integrated catchment solution	WFD_IMPg	WwTW requires significant rebuild, land purchase, planning permission, power upgrade required. Poor ground conditions and significant flood risk. Advice from Ribble Rivers Trust is that catchment interventions will also go beyond 2021 as take up by farmers is likely to increase once the first ones are delivered.	31/12/21
Wilpshire WwTW	WFD_IMPg	WwTW requires a major rebuild which is very challenging in the constrained site. A power upgrade and planning permission are also required	31/12/21

Kingsley WwTW	WFD_IMPg	Significant scope increase due to trader loads which will significantly increase the size of the WwTW, land purchase required	31/12/21
Newbiggin WwTW	SW_ND	Investigations into whether infiltration can be addressed are required before a solution can be finalised and delivered which means we cannot achieve a 2021 regulatory date.	31/06/21

We identified ahead of our business plan submission that the scheme at Newbiggin WwTW was not deliverable by June 2021 as the root cause of the high number of overflow spills is high levels of infiltration of groundwater into the sewer network. As a result, we need to investigate and trial addressing the infiltration before we can finalise the basis upon which to upgrade the wastewater treatment works.

We are committed to sustaining the pace of delivery of environmental improvements for our customers so we have already agreed an approach with the Environment Agency to managing the issues with Newbiggin WwTW and have accelerated the phosphorus removal at Alsager in mitigation. The Environment Agency has acknowledged this issue in a letter dated 1st August 2018 and we will confirm a new regulatory date once the investigations are completed which will be ahead of the existing regulatory date of June 2021.

For the remaining four schemes, we have proposed to the Environment Agency that we accelerate the schemes listed in Table 16 below in exchange for agreeing later regulatory dates for the schemes in Table 15. Their initial verbal response to our proposal to exchange these schemes has been positive and we are now progressing the WINEP change paperwork.

Table 16 WINEP schemes proposed for acceleration in exchange for schemes requiring later regulatory dates

Project	Primary WINEP driver	Current regulatory date	Achievable regulatory date
Great Warford WwTW	WFD_IMPm	22/12/24	31/12/21
Mobberley WwTW	WFD_IMPm	22/12/24	31/12/21
Alderley Edge WwTW	WFD_IMPm, UIMP2	22/12/24	31/12/22
Gosforth WwTW	UIMP6	31/03/24	31/12/21

In addition to the above, we have recently received confirmation from Defra of the removal of Allonby South from the list of designated bathing waters. **This will result in the removal of three enhancement schemes** present within our business plan from the WINEP and therefore it would be appropriate for Ofwat to remove these costs from the baseline prior to the Final Determination rather than reconciling at the end of AMP7.

The three schemes no longer required are Allerby WwTW, Crosscanonby WwTW and Dearham WwTW and **we calculate that Ofwat should remove £7.512m from the baseline as follows:**

WINEP / NEP ~ Schemes to increase flow to full treatment

Dearham WwTW has £1.752m of expenditure allocated to this enhancement line. For the draft determination, Ofwat capped modelled allowance at United Utilities' business plan, as Ofwat's modelled allowance for the programme was higher. We summarise the updates to the assessment in Table 17 below.

Table 17 FM_E_WWW_flow-to-full-schemes_IAP resulting adjustments required because of removal of schemes

	Capex after reallocations (Company)	Modelled Allowance (Ofwat)	Capex allowed - wholesale wastewater
Draft determination	11.688	20.750	11.688
Revised expenditure	9.936	20.275	9.936
Variance	(1.752)	(0.475)	(1.752)

We remove £1.752m of expenditure from our plan as well as removing 26l/s from the flow to full treatment model. The resulting business plan value (£9.936m) remains lower than the modelled value (£20.275m). Therefore, a 1:1 removal of business plan cost from the baseline is appropriate and Ofwat should remove £1.752m from the enhancement allowance.

WINEP / NEP ~ Storage schemes at STWs to increase storm tank capacity

Ofwat included the modelled allowance for storage within the baseline, as this was lower than the business plan value. In order to calculate the required reduction to the baseline, we remove the storage volumes (150m³, 1440m³ and 1800m³ respectively) for each scheme from the model as well as removing £8.329m¹⁷ from the business plan programme of £69.384m. We summarise the changes to the assessment in Table 18 below.

Table 18 FM_E_WWW_storm-tank-capacity_IAP resulting adjustments required because of removal of schemes

	Capex after reallocations (Company)	Modelled Allowance (Ofwat)	Capex allowed - wholesale wastewater
Draft determination	69.384	66.815	66.815
Revised expenditure	61.055	61.720	61.055
Variance	(8.329)	(5.094)	(5.760)

The resulting business plan value (£61.055m) is now lower than the revised modelled value (£61.720m) and therefore the allowed capex is capped at the revised business plan value. This is a change in the total allowed capex within the baseline and Ofwat should remove £5.760m from this enhancement allowance to reflect the removal of these three schemes.

In summary, we propose that:

- Ofwat takes note of the agreements already in place with the EA for the change in pace of delivery of the above schemes and,
- Ofwat removes £7.5m from their view of enhancement cost assessment as we have now received confirmation from Defra of the removal of Allonby South from the list of designated bathing waters.

¹⁷ As specified within 'S6004_AMP7_Totex_Enhancement_Project_List'

We detail the proposed adjustments to the baseline within section 16.8.

9.2. Response to unit rate adjustments within draft determination

Section 4 of 'PR19 draft determinations: United Utilities - Cost efficiency draft determination appendix'¹⁸ sets out the unit rates, and for certain schemes, the scheme-specific costs, on which such adjustments will be made at the end of the control period. Save for the issues raised above in section 9, we are pleased that Ofwat has accepted the proposed adjustment categorisations and the majority of the unit rates that will enable the most accurate adjustment to be made should a change to the WINEP occur. We understand and agree with the premise that Ofwat should recalibrate the allowed adjustment rates to align the company view of expenditure (which derives the company unit rates) to the independent view of efficient expenditure generated in the baseline. Without any form of recalibration, this would potentially expose companies to the removal of more expenditure from their plan than what Ofwat has allowed within the original baseline or recover inefficient costs from customers should new schemes be added to WINEP (on the presumption that Ofwat accepts that this is a two way mechanism).

However, we are unable to reconcile some of the adjustments made within the draft determination. Below we illustrate our understanding of how the recalibrations should occur, if this differs from the view of Ofwat then it would be beneficial for Ofwat to detail the approach to adjusting for these differences. As drivers (and therefore expenditure) for schemes allocate to a single line within the enhancement tables, the approach to assessing enhancements taken by Ofwat makes reconciliation between schemes and allowances relatively transparent.

Taking for example, Phosphorus (P) removal schemes, we proposed a range of unit costs for different types of scheme that differentiated between both the size of the works as well as the proposed limit (permit) delivered by the intervention. For cost assessment, Ofwat assessed our business plan for P removal schemes as being more efficient than the modelled equivalent (£384.1m vs £385.0m) and therefore cap the 'allowance' at the expenditure contained within the business plan. The acknowledgment that the expenditure is already efficient means our proposed unit rates, which we derived from the costs of the schemes in the programme, must also be efficient and therefore no adjustment to the proposed rate is required. Table 19 illustrates the expected unit rates for these schemes as well as the required adjustment (0%). Given the assumptions above, we cannot understand the rationale for reducing each unit rate by c6%.

Table 19 P removal schemes (Cost drivers WFD_IMPg, WFD_IMPm, U_IMP2) using FM_E_WWW_p-removal_IAP

Scheme category/name	Company unit rate	Ofwat unit rate	Business plan	Modelled allowance	Revised rate
WwTW size band 1-3	£4,237 per p.e.	£3,973 per p.e.	£384.1m	£385.0m	£4,237 per p.e.
WwTW size band 4 (proposed limit =>1mg/l P)	£428 per p.e.	£402 per p.e.	£384.1m	£385.0m	£428 per p.e.
WwTW size band 4 (proposed limit <1mg/l P)	£814 per p.e.	£763 per p.e.	£384.1m	£385.0m	£814 per p.e.
WwTW size band 5 (proposed limit =>1mg/l P)	£159 per p.e.	£149 per p.e.	£384.1m	£385.0m	£159 per p.e.

¹⁸ <https://www.ofwat.gov.uk/wp-content/uploads/2019/04/PR19-draft-determinations-United-Utilities-Cost-efficiency-draft-determination-appendix.pdf>

WwTW size band 5 (proposed limit <1mg/l P)	£349 per p.e.	£328 per p.e.	£384.1m	£385.0m	£349 per p.e.
WwTW size band 6 (proposed limit =>1mg/l P)	£37 per p.e.	£35 per p.e.	£384.1m	£385.0m	£37 per p.e.
WwTW size band 6 (proposed limit <1mg/l P)	£108 per p.e.	£101 per p.e.	£384.1m	£385.0m	£108 per p.e.

Table 20 Network storage schemes (Cost driver WFD_IMPg) FM_E_WWW_spill-frequency_IAP

Scheme category/name	Company unit rate	Ofwat unit rate	Business plan	Modelled allowance	Revised rate
Storage requirement: 0 – 500m ³	£5,882 per m ³	£4,530 per m ³	£65.9m	£53.2m	£4,746 per m ³
Storage requirement: 501 – 1,000m ³	£3,334 per m ³	£2,567 per m ³	£65.9m	£53.2m	£2,690 per m ³
Storage requirement: 1,001 – 5,000m ³	£1,876 per m ³	£1,445 per m ³	£65.9m	£53.2m	£1,514 per m ³
Storage requirement: >5,000m ³	£965 per m ³	£743 per m ³	£65.9m	£53.2m	£779 per m ³

Table 21 Enhancing storm tank capacity schemes (Cost driver WFD_IMPg) FM_E_WWW_storm-tank-capacity_IAP

Scheme category/name	Company unit rate	Ofwat unit rate	Business plan	Modelled allowance	Revised rate
Storage requirement: 0 – 500m ³	£5,882 per m ³	£5,428 per m ³	£69.4m	£66.8m	£5,664 per m ³
Storage requirement: 501 – 1,000m ³	£3,334 per m ³	£3,076 per m ³	£69.4m	£66.8m	£3,211 per m ³
Storage requirement: 1,001 – 5,000m ³	£1,876 per m ³	£1,731 per m ³	£69.4m	£66.8m	£1,807 per m ³
Storage requirement: >5,000m ³	£965 per m ³	£890 per m ³	£69.4m	£66.8m	£929 per m ³

We note that the issues raised above will add a level of uncertainty into negotiations and our ongoing relationship with the EA to manage environmental requirements. It would be helpful for Ofwat to provide further clarity on the concerns raised as soon as possible.

10. Enhancement cost assessment

Through our analysis of business plan submissions for both cost and performance, as well as subsequent responses to the IAP, it appears that while several companies may have proposed stretching performance levels (most visibly in the common measures), this is often supplemented by significant amounts of additional expenditure to achieve these enhanced levels of service.

One of the most important challenges for the water industry is the need for us to deliver “more for less”, and not simply “more for more”. This underlying philosophy was a key principle in our business plan development but it does not appear that this has been as widely adopted in some other plans. The majority of slow track/significant scrutiny companies have significant totex gaps in their costs assessment that can, at least in part, be attributed to including additional expenditure to achieve enhanced levels of service (for both botex and enhancement).

An important difference between the assessments of cost and performance is that for cost, Ofwat utilises an independent baseline to assess the company proposal whereas often performance (for common measures) is influenced by comparative assessments between companies. This causes issues for the wider industry in that typically, this additional expenditure has not been included within the independent baseline derived by Ofwat but the improved levels of service are. **This disconnect between assessing expenditure and performance is concerning and Ofwat should take into careful consideration whether enhanced service levels that are proposed to be delivered through additional (unaccepted) expenditure are skewing comparative performance levels across the industry.**

Ofwat should also pay particular attention to the historic expenditure of companies to achieve their baseline performance and acknowledge the differences that this will legitimately cause that must not be attributed to inefficiency. Should company representations result in an increase to their cost assessment in order to deliver these enhanced levels of service, consistency and fairness would require that Ofwat must also proportionately increase the expenditure baselines for all other companies in order to deliver a fair outcome for all companies across the sector in order that customers across the sector all have access to better outcomes.

One issue raised by the slow track companies that we believe does warrant further consideration by Ofwat would be the assessment of ‘enhancement opex’ within the overall valuation of enhancement requirements. **We agree that disregarding opex from the current assessment of enhancement expenditure is not conducive to promoting a totex environment and Ofwat should seek adjustments to its process to better account for opex interventions** (such as our Lead pipe replacement enhancement detailed below).

Given that the Information Request did not collect any data on opex enhancements, we appreciate that developing totex enhancement models in line with the current approach is not possible (other than for models that utilise forward looking data) and so Ofwat would likely need to adopt a different approach. The most likely approach would seemingly be a deep dive on each company submission, but we would caution the consistency with which companies have populated the tables before any definitive assessment is made.

In response to query U UW-DD-CE-002, we reaffirmed that:

“we have only captured in tables WS2 and WWS2 forecast expenditure (capex and opex) associated with delivering enhancements i.e. quality enhancements (driven by statutory obligations relating to drinking water or environmental requirements), enhanced levels of service or work to maintain and improve the supply/demand balance. We have not included costs solely associated with delivering our performance commitments”.

Given the significant difference between the operating expenditures allocated to enhancement by companies, it appears likely that all companies might not have adopted a consistent

methodology when it comes to populating this information. We believe that Ofwat should first ensure the information they have is consistent before undertaking any deep dives in order to confirm parity across the sector when making any necessary adjustments.

In addition to the methodological concerns raised above, below we reiterate the three specific issues to United Utilities assessment of enhancement expenditure raised at the IAP that Ofwat has not addressed within the draft determination.

10.1. Lead pipe replacement enhancement

In our IAP response document '1001 – Response to Actions', we highlighted the issue caused by Ofwat capping the baseline enhancement expenditure for lead replacements at zero without appropriate consideration of our accounting principles that we have previously highlighted. Ofwat does not appear to have addressed this issue in the Draft Determination and so we wish to reaffirm our position, particularly in relation to the (accepted) performance commitment that has financial incentives derived from our business plan expenditure forecast.

Responding to a CA2017 query received from Kevin Ridout on the 31st January 2018, we highlighted how (and why) we account for expenditure on lead replacements as either capital enhancement or maintenance. This is opposed to allocating all to capital enhancement, which we understand to be commonplace amongst the rest of the industry given the expenditure and activity levels seen within other business plans). Currently, we only classify work as capital enhancement when performed under a Section 19 undertaking with the DWI. We account for lead replacements as maintenance where sampling at the tap has identified an infringement or supply side replacement following customer replacement of their own supply pipe. Both of these programmes, although accounted for as maintenance, replace pipes for reasons of water quality.

For AMP7, whilst the DWI support our proposed activities, our planned lead pipe replacement programme is for these 'quality reasons' rather than a formal Section 19 undertaking (as quality standards have not changed). As a result, we account for this expenditure as 'maintenance' and do not allocate any expenditure to table WS2 line six 'Meeting lead standards' (W3006TWD), ensuring that the total (capital) enhancement expenditure reported within WS1 equates to the total reported within WS2. Instead, and in line with our accounting principles, we allocate our base replacement programme to the operating expenditure line 45 (WS2014TWD) but in response to guidance from Ofwat, do not include the additional operating expenditure required to achieve our performance commitment as stated in our table commentaries and reaffirmed in query response U UW-DD-CE-002. Our proposed replacements programme and the associated (operating) expenditure is set out in Table 22 below.

Table 22 U UW AMP7 lead pipe replacements and associated investment programmes

	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Total number of lead communication pipes	516,895	511,931	506,667	501,453	496,239	
Number of lead communication pipes replaced for water quality	4,464	4,964	5,264	5,214	5,214	25,120
Base LCSP replacement programme	4,464	4,464	4,464	4,464	4,464	22,320
Performance commitment replacements	0	500	800	750	750	2,800
LCSP replacement programme	£2.8m	£2.8m	£2.8m	£2.8m	£2.8m	£14.0m
ODI related improvements	£0.1m	£0.5m	£0.8m	£0.7m	£0.7m	£2.8m
Total lead pipe replacement expenditure	£2.9m	£3.3m	£3.6m	£3.5m	£3.5m	£16.8m

We recognise the process that Ofwat follows in assessing lead enhancements and so to support the assessment within the model rather than requiring an ex-post adjustment, we have also provided a revised version of table WS2, within document “*Cost assessment data tables – WS2, Wn6 and WWn8*”, in which we have reallocated lead expenditure to line 6, in line with reporting for other companies. This is also now inclusive of the expenditure required to deliver the performance commitment, as this must also be included within the assessment as Ofwat has accepted the performance commitment and the number of replacements used within the model includes the additional 2,800 replacements. **Given these changes and that it is lower than the modelled value, it would be appropriate for Ofwat to include our business plan lead expenditure within the Water network plus baseline.**

We detail the proposed adjustments to the baseline within section 16.9.

10.2. Water resilience enhancements

In our IAP response document ‘*1001 – Response to Actions*’, we highlighted the inconsistent approach adopted by Ofwat by removing some of our proposed enhancement expenditures from their deep dive. Ofwat does not appear to have addressed this issue in the Draft Determination and so we wish to reaffirm our position.

In the assessment of efficient expenditure requirements for water resilience, Ofwat removes £12.95m from the deep dive with the justification being that all the activities should be “funded under base”. The investment programme, described within supplementary chapter S6025_Enhancement_water_network_5, consists of three investment areas:

Pressure surge detection and alleviation: £5.00m

The provision of pressure surge detection can mitigate the chance of a mains failure leading supply interruptions and leakage. Where we provide the surge protection to enhance the capability of a main this can directly improve the level of credible contingency available in the event of an incident, enabling the transfer of larger volumes of water as required.

Strategic valves and cross connections: £4.95m

The provision of additional strategic valves and cross connections will enable critical parts of our trunk main network to be reconfigured to protect customer supplies in the event of a trunk main failure, or potentially in the event of a major incident affecting a source or treatment asset. We have a number of locations within our network where multiple, strategic mains are in close physical proximity, but that normally operate in isolation due to various operational constraints, such as pressure or velocity differentials or to help us track and monitor flow balances and potential leakage within our strategic network. Enabling these assets to operate together can be a cost effective way of improving operational resilience of our water network, through either the response and recovery or redundancy approaches to resilience. These enhancements to our water network infrastructure have the potential to significantly improve our risk of service failures for low likelihood, high impact events.

Fast fill network valves: £3.00m

The provision of fast fill network valves will enable us to make enhanced use of our fleet of water tankers established during AMP6. These assets will greatly improve both our response times to incidents and the effective capability of our fleet as the cycle time for a typical tanker will be reduced substantially with more targeted locations suitable for both filling tankers and injecting potable water back into our network, protecting customers from service failures from low likelihood, high impact events.

We recognise that Ofwat consistently reallocates new investment into additional telemetry (our pressure surge detection and alleviation investment) to base for all companies and, whilst we do not agree that these activities are maintenance rather than enhancement, the application has at least been consistent. However, we do not believe that our 'cross connection' and 'fast fill network valves' installations should also have been assessed as base. These are specific interventions into alternate supplies that provides increased resilience to minimise the impact of low likelihood, but high consequence risks. This provides an improved level of service to customers and is therefore by definition, an enhancement.

We note that in several instances, other water companies seek to resolve a resilience need similar to those we are planning to address, particularly for strategic valves and cross connections and fast fill network valves, are included within their enhancement assessments, namely:

- Anglian Water's activities to mitigate a single source of supply risk connecting isolated communities to a second source of water supply.
- Northumbrian Water's Batch 1a: Cross connections into C60/60a for Darlington.
- Sutton & East Surrey's removing risks of single supplies with the aim of having 100% of properties being able to be supplied by more than one treatment works.
- Severn Trent's strategic supply asset investment and network response to a treatment work failure.

Whilst the physical activities underpinning each of these investments may differ in some cases, each of these investments are seeking to address the same need by proposing alternate supply options in much the same way that our resilience investments aim to achieve.

Therefore, while we maintain that all aspects of the claim are valid, at the very least the full value of both elements of the programme (£7.95m) should have been included within Ofwat's deep dive assessment. These activities provide an enhanced service and improved resilience to redundancy and response & recovery that is clearly in addition to the base service provision.

We detail the proposed adjustments to the baseline within section 16.10.

10.3. New enhancement: Strategic Regional Solution Development

In the IAP, Ofwat put forward a proposal to facilitate the development of strategic water resources options for the South and South East of England. This included a national transfer of water from the North West to the South East of England: the Severn Thames transfer (STT), involving United Utilities, Severn Trent and Thames Water.

We responded to the IAP action submitting detailed evidence. However, due to the timing of this it would not have been possible to reflect this in the Draft Determination. We did not previously include any expenditure within our plan for the development of this scheme and IAP allowances were in addition to our incumbent requirements. We have highlighted from the start of discussions that we expect to incur additional costs relating to both development of water resources to support the transfer and the interconnecting pipeline. These costs are integral to the STT proposal but the IAP assessment was not sufficient to include the full scope needed. The total AMP7 expenditure requirement for United Utilities is £45.3m comprising one-third share of joint expenditure on the interconnection (£23.4m) and individual company expenditure on water resources (£21.9m), however only the former of these has been reflected in Ofwat's cost assessment.

The individual company expenditure is necessary for the development of water resources options and enabling works in the North West to make up to 180 MI/d available for transfer to Thames

Water. Without this, the resilience of supplies in the North West would be at risk and the transfer scheme would therefore not be viable. If appropriate ‘allowances’ are not included in our totex baseline, United Utilities will not be able to participate in the work to develop the Severn Thames transfer. We are therefore presenting the evidence for this enhancement expenditure in supplementary document ‘D003e – New enhancement: Strategic Regional Solution Development’, in the same form that we used in the September business plans to evidence enhancement expenditure. We have also provided a version of Ofwat’s enhancement cost table WS2, within document “Cost assessment data tables – WS2, Wn6 and WWn8”, with costs reported on line 25.

We detail the proposed adjustments to the baseline within section 16.11.

10.4. 20% Leakage reduction enhancement assessment

In our IAP response document ‘I001 – Response to Actions’, we highlighted that Ofwat had not made an additional expenditure allowance in line with its methodology for having a proposed leakage reduction greater than 20%. Ofwat does not appear to have addressed this issue in the Draft Determination and so we wish to reaffirm our position and the justification for including this within the independent baseline.

For test A of the leakage enhancement assessment, “companies proposing a reduction of greater than 15% are awarded an allowance for reductions beyond 15% based on the minimum of the industry median or company-proposed unit costs.” Within this assessment - applied across the sector - the value for United Utilities’ leakage performance in 2024-2025 reflects the original business plan target of a 15% reduction, resulting in a final year performance of 381.0MI/d. **In accepting the IAP categorisation of ‘fast track’, action UUW.OC.A6 specified a requirement to deliver a 20% reduction in leakage**, stating, “the company should bring forward the proposed annual reduction in leakage by a year but deliver a 30MI/d reduction in 2023-24 and 2024-25.” The result of accepting this action is a revised leakage performance as shown in Table 23 below.

Table 23 United Utilities revised leakage performance for AMP7

	Unit	2020-21	2021-22	2022-23	2023-24	2024-25
Leakage (annual)	MI/d	439.3	430.3	416.9	386.9	356.9
Leakage (3 year average)	MI/d	445.2	439.3	428.8	411.4	386.9

Accepting this more stretching performance target results in leakage of 356.9 MI/d in the final year meaning United Utilities exceeds the performance threshold to qualify for additional allowance for more stretching performance (i.e. above 15% reduction) by 5.38%. Applying the standard calculation within this test, the additional leakage reduction beyond the 15% threshold (24.1 MI/d) is multiplied by the lesser of the company-proposed (£0.60m/MI/d) or triangulated industry median unit cost (£1.60m/MI/d) **resulting in an expenditure allowance of £14.34m above that assumed within the initial IAP assessment**. As we have not proposed performance levels within the industry upper quartile, test B does not apply to our derivation of the efficient expenditure for leakage reduction.

The methodology for assessing leakage expenditure is prescriptive and we do not agree that there should be one rule for the industry and a separate rule for United Utilities; particularly given that we are one of only three companies that Ofwat have deemed to be ‘fast track’ and having submitted a high quality plan. Additionally, those companies that do have a lower level of leakage have not (solely) done so through productivity improvements, they have recovered those costs from customers (noting the inclusion of leakage within the PR14 models).

Whilst we may have higher levels of leakage, we have always acted in a responsible manner and aimed to deliver the most cost efficient service for customers, particularly during times of crisis (e.g. freeze thaw, dry weather events). Simply requiring that United Utilities must deliver more than the rest of the industry because of a perception of poor historic performance, when the level of performance has actually been at or above targets for over a decade and based on the efficiently incurred expenditure on this area, appears to represent inconsistent treatment between companies and over time.

In summary, we propose that:

- **Ofwat reassesses lead replacements using the revised table provided where we have reported expenditure in line with other companies**
- **Ofwat assesses the requirements for strategic/fast-fill valves as being enhancements rather than base**
- **Ofwat assesses the additional company specific costs required to facilitate the Severn-Thames transfer**
- **Ofwat allows for 20% reduction leakage within the enhancement model**

We detail the proposed adjustments to the baseline within section 16.12.

11. Allowing sufficient maintenance expenditure against models with an omitted variable bias

It is natural to be concerned that making additional allowances – as we propose in this representation – might act to overcompensate the company. However, the bulk of the evidence of the cost assessment as a whole suggests this would not be the case. Furthermore, the PR19 methodology actually incentivised companies to submit ambitious business plans in an attempt to obtain more favourable totex incentive rates - so higher totex baselines may be more appropriate in some instances. In their current form, we find that Ofwat's totex baselines are significantly lower than what we would expect as a prediction for totex that is required for a company with UUK's characteristics and operating environment. This is further supported by our own development of an independent baseline as part of our September business plan submission which predicted an efficient expenditure requirement that was more than £500m higher than our business plan submission value.

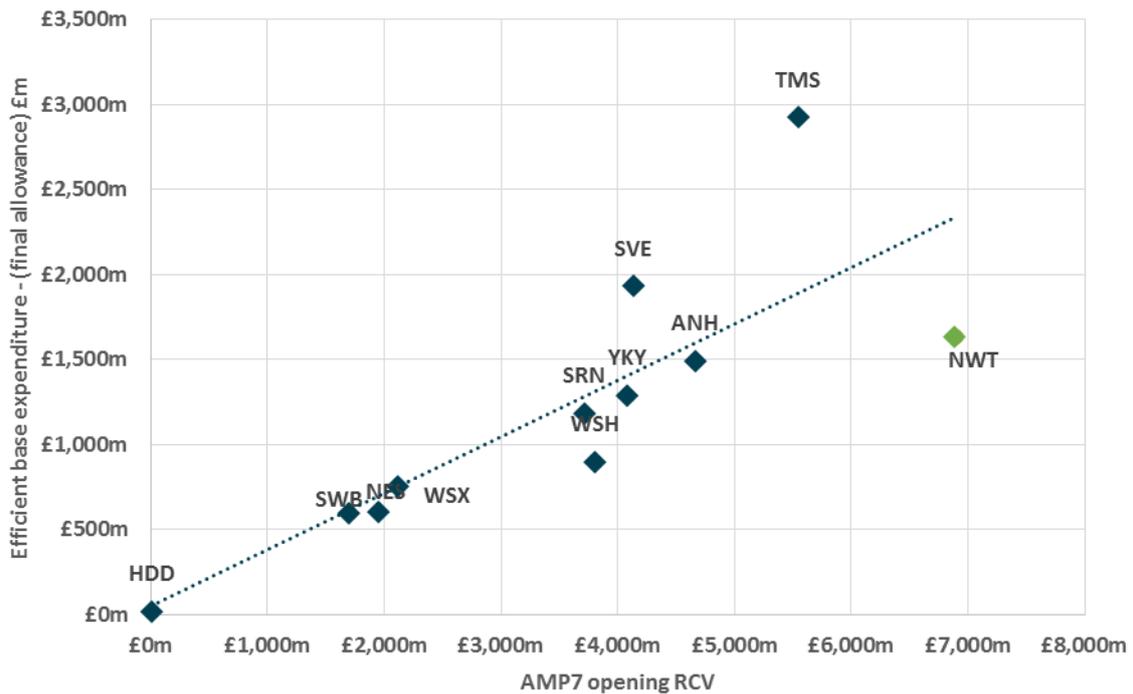
It appears that there has been an unintentional but inherent skew within cost assessment, causing over remuneration for some companies to deliver their base programmes. This over remuneration has been to the detriment of other companies, notably United Utilities. Whilst modelling attempts to capture as many of the drivers of cost as possible (given the limitations of small sample sizes), Ofwat should not place an over reliance on the results whilst accepting that it cannot perfectly reflect (what are increasingly becoming) heterogeneous operators delivering the different preferred services of their customers. Instead, Ofwat should proactively take into consideration factors that are not controlled for within its benchmarked assessment in making its final assessment of whether a proposed business plan is efficient and sufficiently stretching.

Comparisons of the relative efficient base expenditure baselines assessed by Ofwat at PR19 to the size of the asset base for each company (as indicated by the RCV) provide quick sense checks as to whether the outcome has been equitable to all companies or whether there is a bias present within the assessment.

Figure 6 below illustrates the totex 'allowances' across the Wastewater network plus price control relative to the RCV for each company. It makes sense that efficiently incurred historic expenditure (as allowed at each previous Price Review) has resulted in the relative size of the asset bases for each company. Clearly, companies need to maintain the assets that they have invested in to deliver their respective performance. An effective cost assessment therefore needs to take into consideration the relative requirements of each company to maintain the resilience of its asset base and thus its base service provision. There is a clear correlation between the expenditure predictions and the RCV¹⁹, as you would expect given a company's asset base will to a significant degree correlate with factors included within the models such as scale or the number of a specific asset. Whilst the majority of companies are on or close to the line, a handful of companies are significant outliers either positively or negatively. In our view, this is an indicator that cost assessment has not been equitable to all companies and that issues such as the presence of an omitted variable bias are in part leading to a misallocation of expenditure across the industry.

¹⁹ This relationship also holds if the natural RCV run-off is used instead of the aggregate RCV.

Figure 6 AMP7 Wastewater network plus opening RCV in relation to efficient modelled base expenditure allowances



We reflect some of the need to maintain a larger asset base within our cost adjustment claims for drainage and maintaining impounding reservoirs above. Ofwat should take into consideration the inability of modelled allowances to reflect these issues when assessing whether their view of cost assessment has been unintentionally biased against those companies that are required to spend more on maintenance because of efficiently incurred historic investment into a larger asset base.

12. Frontier shift and Real Price Effects

One of the highly contested components in the derivations of botex baselines has been the estimate of the rate of frontier shift that Ofwat has applied to their model predictions. Ofwat states²⁰:

“There appears to be scope for water companies to improve on-going efficiency...Outperformance of cost baselines during this control period from better performing water companies has been far better than average performance (better performing companies have outperformed their cost baselines by around 10% since the start of this control period).”

As evidenced by our stretching business plan, we understand and are receptive to the need for companies to challenge themselves harder than ever before to deliver the best possible service for its customers at the lowest possible cost. We do not wish to challenge the need for a frontier shift as such. However, we do consider that simply stating a frontier shift of 1.5% per annum is significantly understating the amount of challenge that is embodied within that assumption, and that we have already implicitly accepted in developing our business plan. Not fully acknowledging the total frontier shift required by each company will not provide customers with the comfort that the industry is delivering significantly better value for money. We urge Ofwat to consider more pragmatically the wider implications of its methodology on the underlying frontier shift that companies must attain in the coming control period. Understanding the full extent of the challenge is important, as it will help Ofwat to consider ‘in the round’ whether an additional frontier shift is appropriate or excessive.

In our business plan submission (S6002_Cost_assessment_proposal), we explained why an *additional* frontier shift (inclusive of real price effects) of -0.2% (a growth) for Wholesale price controls was in of itself a stretching ask. Some of the key factors that we highlighted within this derivation were that:

- **the proposition that historic outperformance against the PR14 baselines justifies a more stringent efficiency adjustment is flawed as it does not address the fact that outperformance by companies has predominantly been achieved through outperformance of enhancement and not the base expenditure to which the adjustment is then applied.**

²⁰ [Technical appendix 2: Securing cost efficiency](#) page 41, Ofwat.

Figure 7 UUW analysis of industry AMP6 botex/enhancement performance against the PR14 allowed expenditures

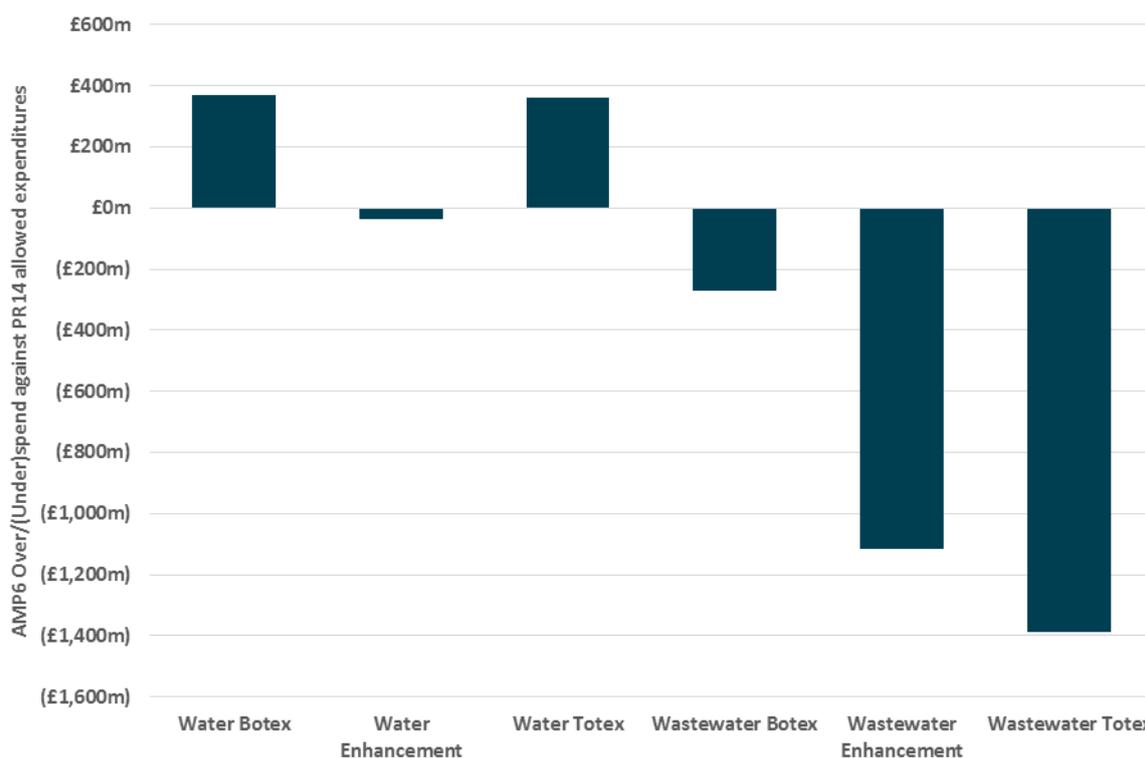


Figure 7 clearly highlights that whilst some companies may have achieved outperformance within botex, on average we observe base expenditures are expected to outturn higher than that assumed in the PR14 determinations whereas there are significant underspends against enhancement allowances, particularly within Wastewater. We know the issues with modelling enhancement expenditure at PR14, with low quality models leading to over-remuneration for several companies. Additionally, the absence of an industry wide adjustment mechanism to correct for environmental schemes not subsequently delivered has led to significant outperformance for some companies. Ofwat have removed the risk of ‘overgenerous’ enhancement allowances for PR19 through the capping of allowances to be, at most, equal to the business plan, whilst the WINEP cost adjustment mechanism will offer some form of protection against removal of scope within environmental schemes. We therefore find that using the proposition of historic outperformance that has predominately occurred within enhancement, to justify a frontier shift to base expenditures is misdirected.

- the move from an RPI-linked control to a CPIH-linked control will automatically impart a c1% per annum additional challenge on companies (compared with historic frontier shift assumptions) due to the wedge between the two indices. This transition will naturally cause an increase in real price effects for all companies, as nominal cost fluctuations will not mirror a policy decision by Ofwat.
- it is important to remember that **measures of inflation reflect economy-wide productivity gains**. Therefore if Ofwat assumed zero (relative to CPIH) for its dynamic efficiency assumption, it would be incorrect to conclude that no dynamic efficiency is assumed – it is just that **no additional dynamic efficiency is assumed over and above that being delivered by the economy as a whole**
- it is common for regulators and companies to make use of analyses of Total Factor Productivity (TFP) to inform expectations for dynamic efficiency. Such studies (generally using the ubiquitous EU KLEMS dataset) commonly observe **historic trends in productivity gains of between 0% and 1% relative to RPI**. KPMG observed similar results in its recent

work for Ofwat, which indicated a frontier shift of 0.4% to 1.2% for Wholesale. KPMG confirmed their results were evaluated relative to RPI, not relative to CPIH and so rebasing these to be CPIH would lead to a cost growth assumption.

We note that the frontier shift paper submitted by several water companies looks extensively into the legitimacy of the frontier shift proposed by Ofwat and so we do not seek to repeat any of these findings. However, we would draw Ofwat's attention to two additional areas of concern that we feel should be addressed before the Final Determinations.

Firstly, whilst it is obviously an attractive proposition for customers, Ofwat's underlying assumptions that companies must achieve the delivery of more stretching performance "to be achieved through base costs" (for example, the 15% leakage reduction²¹) means that companies are already implicitly accepting a significant frontier shift without a further adjustment to the baseline. The actual frontier shift required will differ from company to company depending on their changes in performance but it is significantly greater than zero and Ofwat must not overlook this when making an assessment about the frontier shift. **Wessex water state²² that the additional productivity required even before the 1.5% frontier shift included by Ofwat is approximately 3% per annum. On average, we believe that this is a reasonable assessment of the implied challenge and if anything, we believe that this is potentially understating the productivity required for UUV given the scale of challenge on performance levels.**

Secondly, part of the justification for the 1% productivity adjustment made by Ofwat's consultants (Europe Economics) is that a 0.2% addition to the frontier shift range is needed to account for the 'capital substitution effect'. We would argue that the inclusion of a capital substitution effect within the frontier shift is contrary to the principles of a totex environment. Given the timescale the TFP study looks over, the inverse will actually be true as it is looking at capital intensive periods due to the capex bias, which Ofwat's introduction of totex was seeking to rectify. This means that labour/opex productivity will be overstated compared to future expectations that will include (relatively) less capital substitution and more opex interventions. The additional 0.2% on botex may actually be required to be a negative to accommodate for these changes in incentives. Europe Economics themselves state²³ that:

"When reaching a judgement on the scale of this partial capital substitution effect, it should be noted that the introduction of totex incentives at PR14 may lead to a period of time in which the water sector re-optimises the balance of capex and opex towards the latter, as historical regulatory incentives which biased firms towards capex are removed. This may lead to a temporary period of time in which firms actually engage in opex-capex substitution until they achieve the optimal balance... This could depress the size of the capital substitution effect in the short term."

We do not understand why Ofwat would choose to accept this within their assessment of an appropriate frontier shift given the signals that it then sends. Indeed, in their response to the IAP, Welsh Water highlights how the move to a totex environment could legitimately cause an increase to base expenditure rather than a decrease as more operational solutions are pursued. The application of a positive reduction to botex predictions is therefore contrary to the underlying principles that support operating within a totex environment and should be reconsidered.

The additive effect of each of these challenges not accounted for within cost assessment means that the underlying productivity a company must achieve in order to meet Ofwat's baseline view of base

²¹ [Wholesale Water Supply-demand balance enhancement – feeder model summary](#) p12,

Ofwat

²² "Our response to Ofwat's Initial Assessment of Plans", April 2019, Wessex Water

²³ [Real Price Effects and Frontier Shift](#) p60, Europe Economics

expenditure is therefore not simply 1.5% per annum, it is significantly higher. We estimate that the real value of productivity could comfortably be greater than 6.5% per annum given the:

- ~1% per annum challenge due to the switch to CPIH,
- ~1% per annum challenge as a result of the exclusion for any real price effects within allowances,
- >3% per annum challenge for achieving enhanced levels of service through base service allowances and,
- 1.5% per annum challenge through Ofwat's explicit frontier shift.

All companies must achieve these record productivity improvements on base expenditures on day 1 of the AMP (there is no glide path), even though history would indicate that simply achieving a (static) upper-quartile has proven difficult for many. It is enhancement expenditure where companies can drive out the biggest efficiencies, potentially due to the abilities to make better use of markets to deliver solutions and so placing additional challenge on base expenditures may be counterfactual.

In summary, we propose that:

- **given the level of productivity implicitly assumed within the baseline whilst also accepting the need to challenge the industry to deliver more for less, we find that it would only be credible for Ofwat to apply an additional reduction of no greater than 0.5% per annum to base expenditures. Ofwat should simultaneously recognise the implicit productivity required by companies in delivering the baseline in their headline productivity figures stated to customers rather than assuming this is visible or that base performance is deliverable for no additional productivity.**

13. Wastewater Network plus base totex allocations – impact on PAYG rates

See also section 3.1 of 'D004 – Financing and financial model'

For United Utilities, the majority of the expenditure gap at the IAP was contained within the Wastewater Network plus price control. In accepting the outcome of the IAP, we explained to Ofwat how we would attempt to deliver the additional expenditure challenge placed on the price control in a way that would minimise the overall risk to performance. We set out our justifications within '1009 – Totex adjustments and PAYG rates' which distinguished between reductions in opex and capex, highlighting that a simplified approach “would potentially jeopardise the deliverability and financeability of the plan”.

The allocations to operational and capital expenditure are significant as they in turn affect the natural pay-as-you-go (PAYG) ratios for every company. In the draft determination, Ofwat has not taken into consideration our representation and so in this section we reiterate the need to make the appropriate adjustment as well as providing further evidence now that we have sight of the botex models.

In calculating the required revenues for each price control, Ofwat makes an assumption on how to apportion its view of efficient expenditure between capital expenditure (capex) and operating expenditure (opex). The approach adopted²⁴ is a simple approximation whereby all enhancement expenditure is assumed capital (enhancement) expenditure and the business plan allocation between opex and capex maintenance informs the allocation of base expenditure (botex).

Obviously, where there is no gap between the company view and Ofwat’s view of efficient expenditure at a granular level, then this approach will result in a representative apportionment that is reflective of the activities required to deliver the plan. However, where there are differences in the views of botex, a simplistic allocative approach risks disassociating the resulting expenditures (and therefore the revenues received) with the activities that are required by the company to achieve its committed performance.

As indicated by submission table App24a and replicated below in Table 24 and Table 25, within our business plan base programme, **operating expenditure is concurrently where we expect to see the greatest upwards monetary pressures on prices** (over and above that which is captured by CPIH) **and where we have already proposed to try and make the greatest efficiencies in AMP7.**

Table 24 App24a - Real price effects (RPEs) in wastewater network plus [September 2018]

	Weight	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Operating expenditure (RPEs in wastewater network plus)	48.08%	2.25%	0.23%	0.48%	0.51%	0.54%	1.93%
Maintaining the long-term capability of the assets infrastructure (RPEs in wastewater network plus)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Maintaining the long-term capability of the assets non-infrastructure (RPEs in wastewater network plus)	21.57%	1.57%	1.32%	2.13%	-0.17%	0.03%	1.05%

Table 25 App24a - Efficiency gains in wastewater network plus [September 2018]

²⁴ As calculated within [Feeder model 4: Wholesale wastewater – Bioresources and wastewater N+ cost allowances](#)

	Weight	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Operating expenditure (efficiency in wastewater network plus)	48.08%	9.50%	2.75%	2.01%	3.61%	1.19%	9.16%
Maintaining the long-term capability of the assets infrastructure (efficiency in wastewater network plus)	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Maintaining the long-term capability of the assets non-infrastructure (efficiency in wastewater network plus)	21.57%	7.29%	0.00%	0.00%	0.00%	0.00%	1.57%

Ofwat's proposal to make no adjustment for real price effects (RPE) in setting its view of the expenditure baseline mean these upwards price pressures will have to be absorbed as an additional implied efficiency challenge. The legitimacy for any further challenge is twofold: any further efficiencies will not be found in a 'pro-rata' fashion and the differences between the company and Ofwat view of expenditure are not proportionately spread across the different value chains within Network plus (treatment and collection have very different expenditure allocations and requirements). Table 26 below shows that the econometric models that include treatment expenditure in the dependent variable are the primary cause of the expenditure gap on modelled botex for United Utilities.

Table 26 IAP Wastewater post-efficiency modelled botex gaps by modelled value chain

Company	Bioresources	Treatment	Collection	Treatment & sludge	Triangulated
ANH	(38.0%)	(16.1%)	(13.2%)	(28.2%)	(20.9%)
NES	45.2%	(5.7%)	(31.5%)	5.6%	(6.6%)
NWT	(5.3%)	(18.9%)	(2.6%)	(11.6%)	(9.5%)
SRN	3.2%	(54.3%)	28.3%	(40.5%)	(9.1%)
SWB	(12.0%)	(6.5%)	(5.2%)	(5.3%)	(6.0%)
TMS	6.3%	(1.0%)	(29.2%)	10.4%	(6.3%)
WSH	24.1%	0.9%	(32.6%)	7.2%	(6.8%)
WSX	11.0%	(7.2%)	6.8%	(2.7%)	1.6%
YKY	(6.3%)	(21.3%)	(36.2%)	(17.8%)	(23.4%)
SVH	35.7%	1.0%	6.2%	11.1%	9.3%
SVE	35.7%	1.0%	6.2%	11.1%	9.3%
HDD	35.0%	(0.2%)	5.5%	10.1%	8.5%

The proportion of opex to capex within the Sewage Treatment value chain will naturally be lower than that within the Sewage Collection value chain due to the types of assets employed and the activities undertaken in any given period. For our September business plan, opex accounted for

more than 80% of our Collection botex²⁵ whilst the equivalent ratio for Treatment was less than 60%. Applying a pro-rata reduction using the aggregate base opex ratio for Network plus will therefore implicitly overstate the reduction to Collection expenditures whilst simultaneously understating the reduction to Treatment. This will in turn cause a larger reduction to opex than would be the case if a more granular assessment were undertaken.

Our award-winning market engagement methodology (“MEM”) approach provides the intelligence needed to set ourselves further, but more importantly, *realistic* challenges on expenditure requirements. Therefore, we consider the maximum additional challenge that can be achieved across the AMP against our opex / IRE costs would be £45.2m out of the total challenge of £199.8m. The remaining challenge of £154.6m will need to be delivered by challenging the scope of our non-infrastructure capital maintenance programme. In order to deliver savings of c28% against this programme, we will have to adopt a more risk based approach to managing asset health with targeted interventions undertaken with the aim of preventing the population of unhealthy assets growing significantly across AMP7.

If Ofwat is unwilling to accept such company representations, it should at least consider utilising the knowledge of why/where the gaps occur and apply the reduction to the respective allocations within the different value chains. Although not optimal, adopting this more logical approach for United Utilities would at least cause a proportionately larger reduction to Treatment expenditure, resulting in a greater reduction to capital maintenance than is predicted by Ofwat’s current method. As presented in Table 27 to Table 29, adjusting the approach to be more representative (Table 28) **will result in approximately £18m of additional operating expenditure within the baseline, thereby increasing the natural PAYG within the revenue build up to be more reflective of where the gap originates and the activities we will be undertaking in AMP7.**

Table 27 IAP Wastewater network plus modelled botex gap allocated to value chain based on model results (SWC1/SWC2/SWT/SWT2)

	Treatment	Collection	Wastewater
Modelled gap	(18.9%)	(2.6%)	(9.5%)
Expenditure gap	-£172.5m	-£23.3m	-£195.8m

Table 28 Granular allocation of expenditure gap using value chain expenditures and modelled gaps

	Treatment	Collection	Wastewater
Business plan Opex %	56.9%	82.2%	
Opex reduction	-£98.1m	-£19.2m	-£117.3m
Capex reduction	-£74.4m	-£4.2m	-£78.5m
Totex reduction	-£172.5m	-£23.3m	-£195.8m

Table 29 Ofwat basic approach to allocating expenditure gap

	Treatment	Collection	Wastewater
Ofwat Opex %	68.9%		
Opex reduction	-£118.9m	-£16.1m	-£135.0m
Capex reduction	-£53.6m	-£7.2m	-£60.8m
Totex reduction	-£172.5m	-£23.3m	-£195.8m

²⁵ Modelled botex excluding third party expenditure, Local Authority rates and grants & contributions as per Ofwat definition.

From what is already a stretching position, to assume an unreasonable reduction to operating expenditure without putting at significant risk both our ability to achieve our committed performance and financing arrangements is unreasonable. For each proposed adjustment to the baseline, we have proposed our view of the most appropriate approach to adjusting the baseline, taking into consideration the impact on revenues as well as expenditure (see section 16).

In summary, we propose that:

- **Ofwat reconsiders its approach to deriving expenditure allocations and takes account of what each company has included within its original plan and the resulting performance required during the period when assessing the base opex allocations.**

We detail the proposed adjustments to the baseline within section 16.13.

14. WwN+/Bioresource cost allocation: Liquor treatment recharges

Within section 1.6.3.9 of our supplementary document '*S6002_Cost_assessment_proposal*' we explained the ex-post adjustments that are required to the baselines for Wastewater Network plus and Bioresources in order to align the reporting requirements that had been stipulated within the PR19 methodology with the expenditures predicted by the botex models. Within the draft determination, Ofwat has not adjusted its baselines to account for these recharges and so we again wish to raise the consistency issues this causes. Based on the allocations of expenditure within the draft determination and the uncertainty as to other company reporting, we will look to remove the recharge between the business units. We will reassess our position for the final determination if there are any changes in circumstances.

Table 30 Summary totex adjustments resulting from RAG changes – Bioresources liquor treatment recharges

£m	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Wastewater Network Plus	(9.234)	(9.301)	(9.387)	(9.506)	(9.663)	(47.091)
Bioresources	9.234	9.301	9.387	9.506	9.663	47.091
Total	0.000	0.000	0.000	0.000	0.000	0.000

Appendix 6 of the final methodology stated,

“When sludge liquors are returned to a wastewater treatment works, the activity of treating the liquors is a network plus wastewater activity. The cost of treating liquors should be paid for by the Bioresources business.”

This is a new condition for companies to account for and therefore the recharged expenditures are not present within the historically reported expenditure that develops the (botex models) basic cost thresholds. As the Bioresources and Wastewater Network Plus price controls will be fully separated, with their own totex incentive rates, an adjustment to each control needs to be made to account for the payments between the two businesses in line with the adjustments made to our submission programmes. We set out how we calculated the expected recharges in AMP7 using relevant “Mogden” components of our Trade Effluent charges in ‘995_Using_markets_and_innovation_Chapter6_UUW_IAP5’. **Our approach ensures that the recharges are cost-reflective, transparent and provide a level playing field with third parties** and made these adjustments to each of the baselines set out in Table 30 above.

Within the draft determination, Ofwat has not made any adjustment to reflect the change to the reporting of expenditure between these controls within the derivation of the baselines either by conducting an *ex ante* adjustment (through changing the historic/modelled expenditure) or *ex post* through what has been termed ‘unmodelled costs’. Without these recharges, Bioresources expenditure in AMP7 will be lower than would be the case under a competitive market (where a Network plus businesses would expect to charge for the service) which will act as a barrier to entry as the market becomes more contestable.

We have raised this issue on several occasions in the RAGs consultation, query responses and IAP response but it does not appear that Ofwat has made any adjustment in recognition of this issue. We note the lack of comment on this topic by most companies, which given its size and the fact that it is not included within the current baselines leads us to believe that other companies may not have considered these costs as required by the methodology. Severn Trent has at least acknowledged the methodology but state that:

“With regards to liquor treatment cost allocation, we do not currently, nor plan to, recharge costs to sludge treatment from sewage treatment when liquor is returned to the inlet of a co-located sewage treatment works”²⁶.

In summary, we propose that:

- Based on the allocations of expenditure within the draft determination and the uncertainty as to other company reporting, we will look to remove the recharge between the business units.
- We will reassess our position for the final determination if there are any changes in circumstances.

²⁶ [“A6: Embracing Markets”](#) p58, Severn Trent, September 2018

15. Retail cost assessment

Following a review of residential retail cost models used as part of the IAP process, we have identified a small number of additional proposed actions to improve the consistency and robustness of modelled allowed costs. Specifically, we recommend Ofwat consider the likelihood of companies being able to fully deliver forecast retail totex when setting an upper quartile cost challenge. We also believe that a applying a two sided cost adjustment for residential retail costs would not be justified.

In addition, we note that the calculation of residential retail price controls has been changed, so that in future they will be adjusted for the number of unique customers billed. This is a change from PR14 controls, where adjustments were made for the different cost of serving single and dual service customers. We believe that serving dual service customers costs more than serving single service customers, and that appropriately adjusting for this difference is important. We are content with the proposed change to the calculation of residential retail price controls given that retail cost allowances have been calculated using cost models that include a dual service variable.

15.1. Consider the likelihood of delivering forecast retail cost when setting an upper quartile cost challenge

The use of companies' future cost projections when calculating an upper quartile costs efficiency for residential retail costs is a new approach for the water sector. In the recent revised business plan submissions on 1st April 2019 a number of companies have recommended that in adopting this approach Ofwat should apply some additional validity tests, due to differences with more traditional historic cost based efficiency targets.

We believe that there is value in seeking to assess the robustness of companies' cost projections before using them in setting cost efficiency adjustments for other companies. The PR19 methodology has incentivised companies to put forward stretching, innovative business plans. If individual company cost projections are to be used in challenging other companies' business plans, it is incumbent on Ofwat to assure itself that the projections being used are achievable, and that plans offer sufficient assurance that promised service levels will be achieved. This is particularly important when considering company cost projections that form part of an upper quartile cost threshold.

Table 31 Residential retail forward looking modelled efficiency score (sourced from FM_RR4)

Company	Efficiency score - business plan	
Yorkshire Water	0.54	Upper Quartile
Southern Water	0.65	
South Staffs Water	0.73	
United Utilities	0.73	
South East Water	0.74	2 nd to 4 th Quartile
Anglian Water	0.76	
Severn Trent	0.77	
Portsmouth Water	0.79	
Bristol Water	0.83	
South West water	0.84	
Wessex Water	0.85	
Northumbrian Water	0.85	
Affinity Water	0.90	
Thames Water	0.98	
Dŵr Cymru	1.03	
Sutton & East Surrey Water	1.11	

At the IAP, four companies' plans formed the upper quartile cost threshold for residential retail. When using future costs to calculate an efficiency threshold it is obviously important that forecasts used to challenge companies are well founded, with a reasonable likelihood of being achieved.

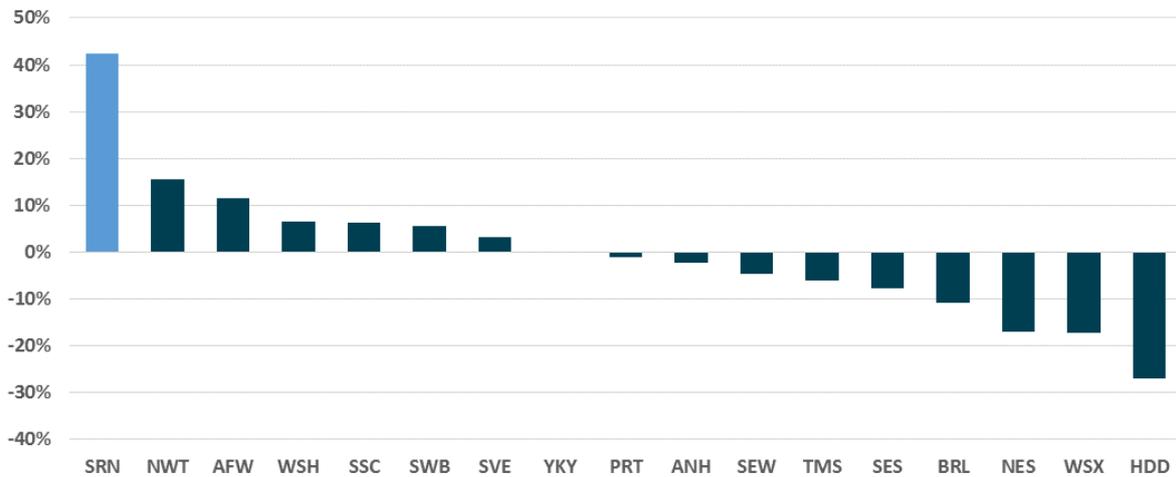
We have therefore sought to understand the nature of other upper quartile company cost projections. We have reviewed residential cost projections using information published in companies' business plans and revised business plan submissions. We have considered how each company's proposed level of cost reduction compares to the rest of the industry's historic performance and future plans. We have also considered companies' past delivery record, and the detailed description of how each company plans to deliver cost reductions.

Based on our review of upper quartile companies we have noted that Southern Water's cost efficiency proposals represent a significant outlier compared to the rest of the industry and rely upon an unprecedented step change in delivery compared to the past. Specifically we note that:

1. Southern Water's cost projections include a 43% average cost reduction from AMP6 levels. This is a level of efficiency that is 275% greater than any other company's residential retail efficiency projection. Figure 8 below shows proposed cross industry cost efficiency between AMP6 and AMP7²⁷. Southern Water's cost efficiency proposals are many times greater than those proposed by other companies.

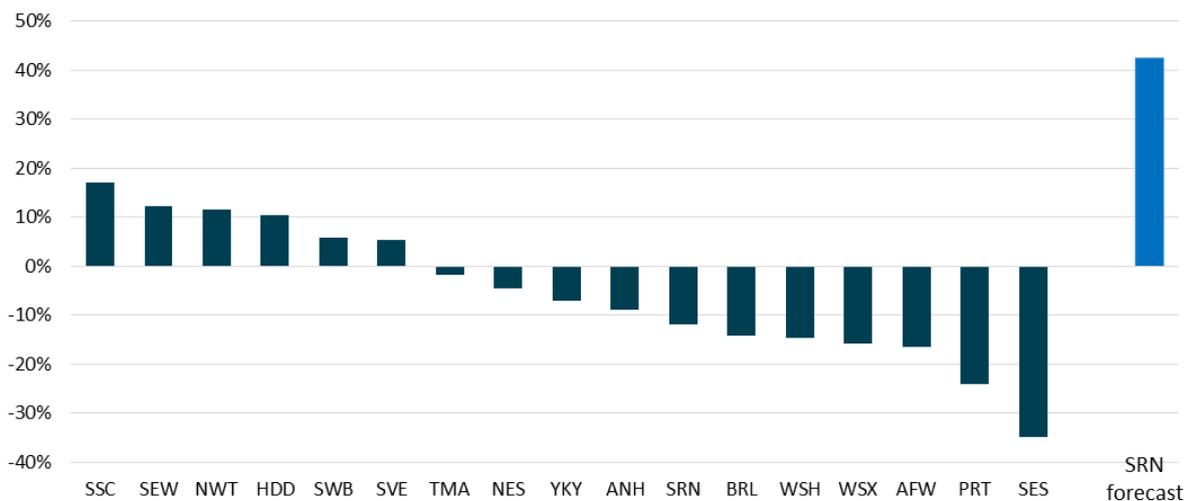
²⁷ Cross industry AMP7 retail totex cost efficiency, using AMP7 average annual retail totex versus a base of retail totex for the years 2015/16 to 2017/18. All assessed using values

Figure 8 Change in Household Retail totex cost efficiency percentage (AMP7 average vs 2015/16-2017/18 average)



- Southern Water’s cost projections include a level of efficiency that is 250% greater than any company has achieved historically. Figure 9 below presents Southern’s AMP7 cost efficiency proposals alongside cross industry cost efficiency achieved between 2012/13 and 2017/18 on a nominal basis²⁸.

Figure 9 Household Retail Totex historic cost efficiency (2017/18 actuals vs 2012/13 actuals)



- Southern Water’s published business plans indicate that it will achieve these efficiencies using initiatives that are in line with other companies’ proposals. It has cited improved outsourcing models, a focus on digital transition, and bringing debt management processes in to line with industry best practise as ways in which the company will achieve efficiencies. These initiatives are similar to proposals in many other companies’ plans, including United Utilities. They are clearly sensible proposals that are likely to drive efficiency, although the level of efficiency being forecast is far in excess of what other companies project they will achieve through a similar set of initiatives.

reported in April revised submissions or September Business plan submissions. All assessed on a nominal basis.

²⁸ Cross industry actual retail residential cost efficiency, comparing annual average retail totex between 2012/13 and 2017/18. All assessed on a nominal basis.

4. Ofwat's IAP assessment of accounting for past performance placed Southern Water in the lowest category, whereas the other companies in the upper quartile received the highest possible grade. Southern has reduced retail efficiencies originally forecast in its business plan, adding £20.86m to forecast residential retail costs in its revised business plan submission for the two years 2018/19 and 2019/20. This represents a 17% increase on forecasts included in its original business plan submission. Southern Water has also made changes to AMP7 retail cost forecasts and now forecasts a 27% reduction in retail costs between 2019/20 and 2020/21 as shown in Table 32 below.

Table 32 Changes to forecast expenditure for Southern Water

Year	Business plan (£m)	Resubmission (£m)	Difference (£m)
2018/19	64.41	70.03	5.62
2019/20	56.07	71.30	15.23
2020/21	50.96	52.29	1.33
2021/22	48.60	49.96	1.35
2022/23	47.25	48.55	1.30
2023/24	46.63	47.88	1.26
2024/25	45.77	47.07	1.30

Based on these observations, it is clear that Southern Water's cost efficiency forecasts are sufficiently ambitious that they sit as a significant outlier from other companies' efficiency projections, past industry efficiency rates in retail and are notably unlike comparable benchmarks. On this basis, we consider that the Southern Water values should not form part of a cross industry cost challenge threshold.

The monetary impact of removing Southern Water from the upper quartile assessment is relatively small, moving the efficiency adjustment from 26.4% to 25.3%, but doing so substantially improves the reliability and robustness of the efficiency adjustment.

In summary, we propose that:

- Southern Water's cost efficiency forecasts are recognised as an outlier and therefore should not form part of the cross industry cost challenge assessment.

15.2. Approach to reflecting transiency in retail cost allowances

We note that a number of companies have proposed transiency as a cost adjustment factor as part of PR19 business plan submissions. Whilst Ofwat has attempted to include transiency factors in residential retail cost models, this has proven difficult. Based on detailed cost modelling we have concluded that transiency itself has a weak effect on retail cost for the UU region. Based on this evidence we therefore believe that Ofwat should not apply a two sided cost adjustment claim to UUW, even if a cost adjustment was allowed for another company.

We have noted in the past that house moves do drive some retail costs²⁹, through the mechanism of opening, closing, and moving accounts. However, the cost of this is largely under management control. Efficient management practices such as the creation of digital interfaces allow customers to open, close and switch accounts remotely with minimal cost.

Some customers that move home leave unpaid debt behind. There are a number of ways that this ‘leaver debt’ can be effectively pursued, with our recent work on best practise in debt management³⁰ highlighting a number of viable routes to collecting such debt. Nevertheless, in theory an increase in levels of customer transiency in a region should result in some increase in operating costs for water companies.

To test the theory we have developed a detailed model of retail cost drivers in the UU region, and have come to the firm view that transiency is not a material retail cost driver in the North West. When considered in isolation transiency can - in a small number of model designs - appear to be a driver of cost, but once household deprivation factors are considered the impact of transiency evaporates.

Our detailed analysis suggests that transiency costs are overall immaterial. Whilst we do recognise that central London is subject to higher levels of transiency than the rest of the country, the materiality of these effects are still small once deprivation impacts are taken into account. We therefore do not believe that a transiency based symmetrical cost adjustment would be appropriate for the North West.

To test this view, we looked at internal data on account changes and on deprivation by Lower Super Output Area (LSOA) within United Utilities’ area of appointment for one year.

Table 33 below shows the implied annual cost of transiency under a number of scenarios, once the impact of deprivation has also been accounted for.

Table 33 – Impact of transiency scenarios on expected UU retail costs³¹

Percentage of retail cost associated with transiency	Impact on costs under maximum transiency scenario	Impact on costs under minimum transiency scenario	Range
1.20%	+0.18%	-0.05%	0.24%

We have compared the change in expected retail costs under a high and low transiency scenario, as compared to the Uuw actual regional transiency rate. The high and low scenario were developed based on the 2016/17 maximum and minimum ‘Total internal + international migration’ figures included in Ofwat’s “Feeder model 1: Retail – Master data (FM_RR1)”.

These results lead to an important implication; transiency itself has a weak effect on retail cost. Instead, we believe other companies cost adjustment claims are in fact observing the effect of deprivation, and incorrectly allocating this to transiency measures. In this context, using transiency to explain retail cost does not seem optimal, given that deprivation explains a much larger portion of variation in cost to serve.

The weakness of the effect also seems to suggest why transiency is unstable in company level models of retail cost. For example, we note that Economic Insight (Economic Insight, Population transience as a driver of household retail costs, 2018) demonstrate that 24% of transiency

²⁹ UU PR19 Business Plan submission – Supplementary S6002 Cost Assessment Proposal

³⁰ UU PR19 Business Plan submission – Supplementary S6013 Debt management capabilities

³¹ Based on Uuw regional LSOA cost model, including transiency and deprivation explanatory factors

coefficients are negative across model suite A, while 43% are negative across model suite B. A similar result has been observed within residential retail cost models used by Ofwat at the IAP stage.

15.2.1. Model specification and results

To test our hypothesis, we have looked at the impact of transiency on retail costs, calculated using regression analysis at a Local Super Output Area (LSOA) level to estimate the relationship between transiency and average retail cost per customer. We then apply this relationship to U UW transiency to estimate the additional retail cost U UW would expect to observe because of changes in region specific transiency.

Step 1 – establish LSOA level transiency and deprivation for U UW

We have undertaken an exercise to look at retail activity and costs for every property in the U UW region at a LSOA level. Postcodes are assigned to LSOA by the government, and data is available online from the Ministry of Housing, Communities and Local Government.

To establish values for transiency at an LSOA level we have considered the number of account changes (moves in or out of a property) in 2016/17 for every connected household in the U UW region, and then allocated postcodes to Government LSOAs.

The transiency values dataset has 4,480 observations, with a mean of 71 account changes per an LSOA. The number of account changes per LSOA ranges from one to 474.

To establish deprivation scores for U UW we utilise the Indices of Multiple Deprivation (IMD) datasets produced by the Ministry of Housing, Communities and Local Government. We have utilised the last published version of this dataset – 2015, published in October 2015. The data is provided at both a Local Authority and LSOA level.

Step 2 – establish relevant retail costs from retail activities

In order to estimate the relationship between transiency and retail costs it was necessary to assess U UW's retail costs by LSOA. Using the accounting separation retail table 4F for 2016/17, we identified 45 activities in total, based on a more granular analysis of accounting separation lines (e.g. payments split into 11 different payment types, debt management split into 10 individual debt management activities.)

Ten of these activities were rejected as not being relevant to the analysis, either due to being the retail interface to a wholesale activity (network enquiries, network complaints, customer side leaks, demand side water efficiency), or solely non-household activities (disconnections, services to developers, support for TE compliance).

The retail cost by LSOA was calculated by establishing:

1. an overall company unit cost for each of the individual retail activities
2. a set of customer level activity information, aggregated by LSOA

The customer level activity information by LSOA was then multiplied by the unit costs for each activity to arrive at an estimate of the company's retail costs by LSOA. This was then divided by the number of properties per LSOA to arrive at a retail cost per property by LSOA.

The primary driver of difference in cost per property between each LSOA is the difference in activity levels (bills, reminders, payment types, debt management activity, and prevalence of bad debt). This activity data is the prime source of difference in retail cost between areas.

The one exception to this approach is the calculation of doubtful debt provision per LSOA. This assessment was conducted based on individual customers' 2016/17 annual outstanding direct contribution at March 31st to the UU annual doubtful debt provision. Each customer was then allocated to an LSOA.

Step 3 – establish retail activity levels for each LSOA

The activity levels were established at a customer level, for the financial year 2016-17 (to match up with the corresponding costs for that year). This data was collated from numerous company systems, by customer account. The activity level was then mapped to LSOA based on the postcode information on the customer's account.

The detailed customer level data was then aggregated, for each activity, by LSOA.

Step 4 – establish unit cost of retail activities at overall U UW level

The 2016-17 Regulatory Accounts information for the retail part of the business was the starting position to calculate the unit rates for the various activities involved in managing customers' accounts.

In order to fully assess the retail cost impact of differing levels of transiency, it was important to understand a greater level of detail about the cost drivers and associated costs under each of the lines reported with the Regulatory Accounts. For example, Payments – whilst a significant proportion of our customers pay by direct debit, other customers use alternative payment methods that are more expensive for us to manage e.g. Payzone.

Having identified the more granular activities, we investigated which costs were directly attributable to them, and allocated direct and indirect overheads on top.

We then used the total volumes applicable to each activity for 2016-17 as established in step 3 above to calculate a unit rate for each activity.

Step 5 – regression analysis

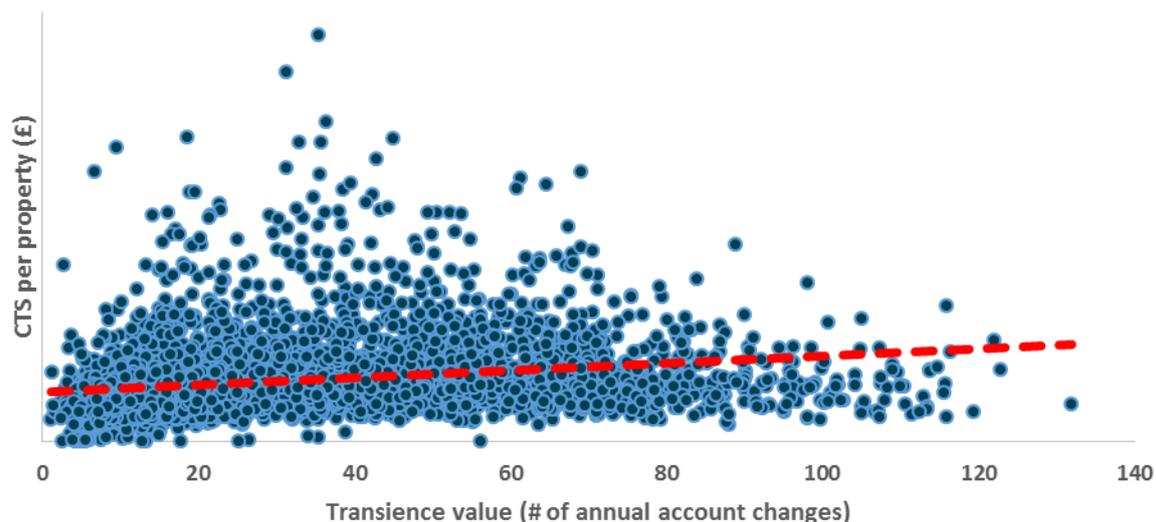
Having established a set of retail costs by LSOA, we then divided this retail cost by the number of properties shown in each LSOA to arrive at a retail cost per property, which was then matched against the transiency and deprivation values for each area.

For the regression analysis, we built two models. The first model considered transiency values as a single cost driver, the second considered both transiency and deprivation (using the Index of Multiple Deprivation).

LSOAs were only excluded if they contained invalid data points. This occurred where either the unit cost was zero, or where there was no customer number information from our original dataset, or where there was no transiency/deprivation score available.

This resulted in 4,480 LSOAs being subject to the regression analysis, which represented data for all valid LSOAs in UUW's region. The transiency values, deprivation values and cost per property scores were logged, and then the regression analysis performed.

Figure 10 LSOA level cost to serve vs transiency value



We used an OLS model with standard errors adjusted for heteroscedascity. The dependent variable was retail cost to serve in each LSOA, calculated as the total cost to serve in the LSOA, divided by the number of households in that LSOA. Two independent variables were included across different models – transiency and deprivation. A ‘log-log’ model was used because we consider there to be a multiplicative relationship between these factors, as opposed to an additive one.

Table 34 – Model specifications³² [Note - values in brackets are p-values]

	Model 1 – Transiency only	Model 2-Transiency & Deprivation
Dependent variable	ln(Cost to serve)	ln(Cost to serve)
ln(transiency value)	0.498*** (0.000)	0.088*** (0.000)
ln(Deprivation IMD)		0.807*** (0.000)
Constant	1.113*** (0.000)	0.378*** (0.000)
Number	4476	4476
R squared	0.127	0.749

Step 6 – interpreting results

As can be seen by the results of the regression analysis presented above a simple linear regression of cost to serve on transiency (and omitting any explanatory factors for deprivation), the model implied that a 1% increase in ln (transiency) increases cost to serve by 0.49%, with an r^2 of 0.13. However, when we added deprivation to the model, as measured by the average IMD score for an LSOA, the impact of a 1% change in ln(transiency) drops to 0.088%, with an r^2 of 0.75. This result indicates that the impact of cost to serve on transiency is negligible, particularly once the effects of deprivation are accounted for.

To give an indication of the cost impact of regional variance in transiency we have assessed the difference in expected retail costs for UU under a high and low transiency scenario, as compared to the UU actual regional transiency rate. The high and low scenario were developed based on the

³² A full model specification and supporting data is included in appendix ‘D003g - Transiency Model - COMMERCIALY SENSITIVE’

2016/17 maximum and minimum 'Total internal + international migration' figures included in Ofwat's "Feeder model 1: Retail – Master data (FM_RR1)". Within this data set Thames Water had the highest migration rates (71% greater than UU in the year), and Welsh Water's region had the lowest rates (15% lower than UU).

Table 35 – Transiency scenarios

UU transiency (number of account changes)	High scenario (additional account changes)	Low scenario (additional account changes)
320,000	+226,000 (+71%)	-48,000 (-15%)

Table 36 – Impact of transiency scenarios on expected UU retail costs³³

Percentage of retail cost associated with transiency	Impact on costs under maximum transiency scenario	Impact on costs under minimum transiency scenario	Range
1.2%	+0.18%	-0.05%	0.24%

These results lead to an important implication; transiency itself has a weak effect on retail cost. Instead, we believe other companies cost adjustment claims are in fact observing the effect of deprivation, and incorrectly allocating this to transiency measures. In this context, using transiency to explain retail cost does not seem optimal, given that deprivation explains a much larger portion of variation in cost to serve.

Based on this evidence we therefore believe that a two sided cost adjustment claim should not be applied to UUW, even if a cost adjustment was allowed for another company.

In summary, we propose Ofwat recognise that:

- A detailed review of UU residential retail costs by cost driver has identified that customer transiency has a very small impact on overall costs.
- A transiency based symmetrical cost adjustment for the UU region would not be appropriate.

³³ Based on UU regional LSOA cost model, including transiency and deprivation explanatory factors

16. Appendix: Expenditure allocations for adjustments

This appendix specifies how the adjustments in the preceding sections should be added to the draft determination baseline. Where an addition has been allowed in part, we only include the additional amount and not the full value of the claim. For simplicity, we have included a profile but we accept that this will be adjusted for within the financial model and so the profiles included here are simply presentational.

We adopt the same approach as Ofwat in that adjustments to enhancements are allocated to capital enhancement. For botex adjustments, rather than allocating the adjustment in line with the actual allocations of each claim, again, it is more appropriate to allocate the expenditure in line with the same approach adopted by Ofwat whereby we split botex between opex and base capex using the business plan split for each price control. We have used the exact same splits as those contained within the DD feeder models for Water³⁴ and Wastewater³⁵.

An alternative method would be to include all additions in line with the proposed PAYG splits for each price control. This is potentially less transparent but may be more acceptable due to the short-term impact on customer bills depending on the total additions made. We present the percentages for the different options available in Table 37 and Table 38 below.

Table 37 U UW AMP7 Base opex ratio percentages

	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Water Resources	89.9%	89.3%	90.1%	90.9%	91.7%	90.4%
Water Network plus	87.3%	81.8%	77.5%	82.0%	86.7%	82.9%
Bioresources	54.3%	52.4%	55.4%	58.6%	56.8%	55.4%
Wastewater Network plus	70.7%	68.3%	69.2%	65.0%	71.5%	68.9%
Wholesale	77.4%	74.1%	73.2%	73.4%	78.0%	75.2%

Table 38 U UW AMP7 price control PAYG percentages

	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Water Resources	89.0%	87.2%	88.8%	84.6%	76.9%	84.7%
Water Network plus	61.9%	68.0%	69.2%	73.0%	75.1%	69.1%
Bioresources	54.3%	52.4%	55.4%	58.6%	56.8%	55.4%
Wastewater Network plus	51.8%	49.4%	54.3%	39.2%	45.8%	47.4%
Wholesale	58.6%	59.5%	62.9%	54.5%	59.0%	58.8%

We have assessed the impact of allocating all adjustments in line with the PAYG splits and the difference between the two methods is less than 1% of totex with the current Ofwat approach resulting in the lower amount of PAYG expenditure. **It is therefore most prudent in this instance to maintain the same approach adopted by Ofwat in the Draft Determination given the nature of our additions.** We have not sought to attempt to allocate botex expenditure base on value chain (e.g. collection or treatment) base opex ratios, although this would clearly be a viable alternative.

³⁴ Feeder model 4: Wholesale water – Water resources and water N+ cost allowances

³⁵ Feeder model 4: Wholesale wastewater – Bioresources and wastewater N+ cost allowances

16.1. New connections operating grants and contributions error

This is a claim against the (botex) grants and contributions model. Correcting for the additional operating expenditure from WS2 from the input removes £6.3m of grants and contributions from the baseline. The allocation between 'price control' and 'non-price control' mirrors that calculated within the model. This adjustment can be achieved by either adjusting the input to exclude these costs or by making an ex-post adjustment to the baseline using the values below (where positive grants and contributions values indicate a reduction to the total).

Table 39 Adjustment required due to new connections operating grants and contributions error

Water Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [price control]	0.21	0.25	0.29	0.10	0.11	0.96
Opex G&C [non-price control]	0.71	0.84	0.98	1.34	1.50	5.37
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	0.92	1.09	1.26	1.44	1.61	6.32

16.2. New cost adjustment: Diversions special factor

This is a claim against the botex models. Whilst we report all diversions as infrastructure renewals expenditure (IRE), it would not be appropriate to include the full addition as entirely IRE as the allocations between opex and capital maintenance used by Ofwat are derived from our September business plan, which already included these expenditures. We have allocated the expenditure between opex/IRE and capital maintenance in line with the base opex percentages set out in Table 40 and Table 41

Table 40 New cost adjustment: Diversions special factor, Water network plus allocations

Water Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	5.71	5.40	5.17	16.64	17.66	50.57
Capex Maintenance	0.83	1.20	1.50	3.66	2.71	9.90
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	6.54	6.60	6.67	20.30	20.36	60.47
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	6.54	6.60	6.67	20.30	20.36	60.47

Table 41 New cost adjustment: Diversions special factor, Wastewater network plus allocations

Wastewater Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	2.60	2.53	2.59	6.01	6.64	20.37
Capex Maintenance	1.07	1.18	1.15	3.23	2.65	9.28
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	3.67	3.71	3.74	9.25	9.29	29.66
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	3.67	3.71	3.74	9.25	9.29	29.66

16.3. NRSWA recovery rates

This is a claim against the (botex) grants and contributions model. We note that the input used for the grants and contributions associated with diversions is the gross expenditure after which a 100% recovery rate is assumed, which as we highlight above is not applicable for NRSWA diversions. One of two approaches can therefore achieve this adjustment. Either, adjusting the expenditure input to 'gross down' the diversions expenditure so that the correct grants and contributions is achieved without adjusting the recovery rate. Alternatively, Ofwat could make an ex-post adjustment to the baseline using the values below whereby the model over predicts the grants and contributions based on actual diversions expenditure and 100% recovery rates (where positive grants and contributions values indicate a reduction to the total). The entire adjustment is allocated to the opex 'non-price control' grants and contributions in line with how NRSWA diversions are reported.

Table 42 Water ex-post adjustment to correct for NRSWA recovery rates

Water Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	1.09	1.10	1.11	1.12	1.13	5.55
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	1.09	1.10	1.11	1.12	1.13	5.55

Table 43 Wastewater ex-post adjustment to correct for NRSWA recovery rates

Wastewater Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.66	0.67	0.67	0.68	0.69	3.37
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	0.66	0.67	0.67	0.68	0.69	3.37

16.4. Removing the cap on the income offset

This is a claim against the (enhancement) grants and contributions model. We note that the cap to the income offset is achieved through a standardised assessment of the recovery rate for new connections and developments (66%). One of two approaches can therefore achieve this adjustment. Either, Ofwat could recalculate a company specific percentage to allow for the income offset to exceed the infrastructure charge (and therefore be negative) in line with the *'Company view of G&C recovery rate - new developments – water'*. Alternatively, Ofwat could make an ex-post adjustment to the resulting grants and contributions value to reinstate the amount of income offset that has been removed through the capping process (where positive grants and contributions values indicate a reduction to the total). The change is allocated to capex price control in line with the reporting for the infrastructure charge.

Table 44 Removing the cap on the income offset

Water Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	15.72	16.81	17.93	18.59	19.22	88.26
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	15.72	16.81	17.93	18.59	19.22	88.26

16.5. Update to claim: Combination of exogenous factors impacting surface water runoff

This is a claim against the botex models. Whilst the cost adjustment claim centres around additional infrastructure maintenance associated with higher drainage requirements, it would not be appropriate to include the full addition as entirely Opex/IRE as the allocations between opex and capital maintenance used by Ofwat are derived from our September business plan, which already included these additional expenditures. We have allocated the expenditure between opex/IRE and capital maintenance in line with the base opex percentages set out in Table 45.

Table 45 Update to claim: Combination of exogenous factors impacting surface water runoff allocations

Wastewater Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	12.25	11.97	12.10	11.48	12.68	60.47
Capex Maintenance	5.07	5.56	5.39	6.17	5.05	27.24
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	17.32	17.53	17.49	17.64	17.73	87.72
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	17.32	17.53	17.49	17.64	17.73	87.72

16.6. Update to claim: Keeping Our Reservoirs Resilient

This is a claim against the botex models. Whilst the cost adjustment claim centres around additional infrastructure maintenance associated with operating a higher number of dams, it would not be

appropriate to include the full addition as entirely Opex/IRE as the allocations between opex and capital maintenance used by Ofwat are derived from our September business plan, which already included these additional expenditures. We have allocated the expenditure between opex/IRE and capital maintenance in line with the base opex percentages set out in Table 46.

Table 46 Update to claim: Keeping Our Reservoirs Resilient allocations

Water Resources	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	5.20	7.91	11.46	10.48	11.27	46.32
Capex Maintenance	0.59	0.95	1.26	1.05	1.02	4.86
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	5.79	8.86	12.71	11.53	12.29	51.19
Opex G&C [price control]	n/a	n/a	n/a	n/a	n/a	0.00
Opex G&C [non-price control]	n/a	n/a	n/a	n/a	n/a	0.00
Capex G&C [price control]	n/a	n/a	n/a	n/a	n/a	0.00
Capex G&C [non-price control]	n/a	n/a	n/a	n/a	n/a	0.00
Net totex	5.79	8.86	12.71	11.53	12.29	51.19

16.7. Update to claim: Manchester and Pennines Resilience

This is a claim against the enhancement models. We adopt the same approach as Ofwat in that adjustments to enhancements are allocated to capital enhancement.

Table 47 Update to claim: Manchester and Pennines Resilience allocation

Water Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	6.76	1.02	0.33	0.24	0.93	9.27
Gross totex	6.76	1.02	0.33	0.24	0.93	9.27
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	6.76	1.02	0.33	0.24	0.93	9.27

16.8. Updates to enhancements due to removal of WINEP schemes

This is a claim against the enhancement models and involves removing allowances made within the draft determination. We adopt the same approach as Ofwat in that adjustments to enhancements are allocated to capital enhancement.

Table 48 Updates to WINEP due to removal of schemes allocation

Wastewater Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	-1.50	-1.50	-1.50	-1.50	-1.50	-7.51
Gross totex	-1.50	-1.50	-1.50	-1.50	-1.50	-7.51
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	-1.50	-1.50	-1.50	-1.50	-1.50	-7.51

16.9. Enhancement cost assessment: Lead

This is a claim against the enhancement models. Whilst we report all lead replacements as infrastructure renewals expenditure (IRE), it would not be appropriate to include the full addition as entirely IRE as the allocations between opex and capital maintenance used by Ofwat are derived from our September business plan, which already included these expenditures. We have allocated the expenditure between opex/IRE and capital maintenance in line with the base opex percentages set out in Table 49.

Table 49 Enhancement cost assessment: Lead allocations

Wholesale	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	2.33	2.48	2.57	2.64	2.79	12.81
Capex Maintenance	0.34	0.55	0.75	0.58	0.43	2.64
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	2.67	3.03	3.31	3.22	3.22	15.45
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	2.67	3.03	3.31	3.22	3.22	15.45

16.10. Enhancement cost assessment: Water resilience

This is a claim against the enhancement models. We adopt the same approach as Ofwat in that adjustments to enhancements are allocated to capital enhancement.

Table 50 Enhancement cost assessment: Water resilience allocations

Water Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	1.59	1.59	1.59	1.59	1.59	7.95
Gross totex	1.59	1.59	1.59	1.59	1.59	7.95
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	1.59	1.59	1.59	1.59	1.59	7.95

16.11. New enhancement: Strategic Regional Solution Development

This is a claim against the enhancement models. We adopt the same approach as Ofwat in that adjustments to enhancements are allocated to capital enhancement.

Table 51 New enhancement: Strategic Regional Solution Development allocations

Water Resources	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	4.38	4.38	4.38	4.38	4.38	21.90
Gross totex	4.38	4.38	4.38	4.38	4.38	21.90
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	4.38	4.38	4.38	4.38	4.38	21.90

16.12. Enhancement cost assessment: Leakage

This is a claim against the enhancement models. We adopt the same approach as Ofwat in that adjustments to enhancements are allocated to capital enhancement.

Table 52 Enhancement cost assessment: Leakage allocation

Water Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	0.00	0.00	0.00	0.00	0.00	0.00
Capex Maintenance	0.00	0.00	0.00	0.00	0.00	0.00
Capex Enhancement	2.87	2.87	2.87	2.87	2.87	14.34
Gross totex	2.87	2.87	2.87	2.87	2.87	14.34
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	2.87	2.87	2.87	2.87	2.87	14.34

16.13. Wastewater Network plus base totex allocations – impact of PAYG rates

This is a claim against the botex models. This utilises the knowledge of why/where the gaps occur and applies the net reduction of the different value chains for wastewater. This is the adjustment that reflects the differences in approaches set out in Table 26, Table 27, Table 28 and Table 29 and can only be made ex-post within Ofwat's current model templates. This change does not increase the baseline, it only reallocates botex more appropriately between opex and capex.

Wastewater Network plus	2020-21	2021-22	2022-23	2023-24	2024-25	AMP7
Opex (excl IRE)	0.00	0.00	0.00	0.00	0.00	0.00
IRE	3.54	3.54	3.54	3.54	3.54	17.71
Capex Maintenance	-3.54	-3.54	-3.54	-3.54	-3.54	-17.71
Capex Enhancement	0.00	0.00	0.00	0.00	0.00	0.00
Gross totex	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Opex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [price control]	0.00	0.00	0.00	0.00	0.00	0.00
Capex G&C [non-price control]	0.00	0.00	0.00	0.00	0.00	0.00
Net totex	0.00	0.00	0.00	0.00	0.00	0.00