Draft Water Resources Management Plan 2024

Tables Supplementary Note

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This supplementary note provides clarifications regarding information presented in our WRMP tables. This includes any assumptions which have been made, and any areas where there may be small deviations from the template or guidance.

Table & Row	Clarification, or Deviation & Explanation
All	Input data for all tables begins in 2019/20 and extends to 2074/75, except table 5a & 5b). Some cells beyond this which are populated by EA formulas may have values however no data beyond the range stated should be used. Table 5a and 5b contain 80 years of data for calculation of NPVs etc.
Table 1	The methods used in the production of DO values in Table 1 lead to the calculation of a '1 in 500-year source deployable output' value for each source, as opposed to the 'contribution towards 1 in 500-year WRZ DO'. As such, any conjunctive use impacts are not assigned to individual groundwater source DOs. In some cases, e.g. Gatehampton, this has involved stating a 'static' source DO where the contribution to WRZ DO within our modelling is more dynamic.
Table 1 and Table 3	There are some inconsistencies between transfers included in Table 1, and those that feature in our baseline SDB in each WRZ's Table 3. One aim of WRSE was to determine those existing transfers between WRSE companies which may be inefficient/unnecessary, either now or in the future. We have several transfers with WRSE companies which feature in our current baseline, e.g., transfer to Affinity Water at Fortis Green. Most of these transfers are contracted to exist in perpetuity, but could be terminated with the consent of both companies. Considering that all transfers between WRSE companies could be terminated via collaboration through WRSE, within our modelling we decided that most transfers between WRSE companies should be considered as 'options' (with no cost of construction), rather than 'baseline' All of those transfers which feature in Table 1 are in our current 'baseline', but those which it would be feasible to terminate have been considered as 'options'. Transfers to NAVs, and transfers to companies outside WRSE have been considered as baseline. For rdWRMP24, dependent on feedback from the EA, we may amend this formulation to have existing transfers as 'baseline', and 'options' to reduce/terminate existing bulk supply contracts.

Table 2 and Table 7, Final Plan Target Headroom	Our demand management programme was submitted to WRSE in February 2022, to align with investment modelling timescales. Between February 2022 and July 2022, we reworked our demand management strategies, leading to differences in cost, and small differences in overall demand reduction. We anticipated that we would be able to update our demand management strategy input data, but WRSE modelling processes meant that this was not possible. In order to maintain supply-demand balance in our tables, we have amended our final plan Target Headroom, with the amendment equal to the difference between the 'Feb 22' demand management programme cumulative benefit and the 'Jul 22' demand management programme cumulative benefit. These benefits almost always result in an increase in TH (i.e., they reduce a final planning surplus), with the maximum FP TH increase being 2.99 Ml/d in London WRZ. The largest reduction in FP TH (to stop a deficit from appearing in the tables) is -0.00284 Ml/d.
Table 2a	This table contains NYAA (our company normal year scenario) data as required by the WRMP24 Table Instructions. The weather significantly impacts demand for water, as well as the amount of water loss through leakage. Our 'Normal Year' forecast incorporates an 'uplift' (or 'downlift') for leakage and usage from our base year, in order to ensure that the values presented are representative of what would happen if the weather were 'normal' (median, in terms of impact on leakage/usage). Performance commitments from Ofwat, and the plans funded to meet targets, are based on 3-year rolling averages of 'outturn' (i.e., measured) values. Given that the years used to define our targets were not necessarily 'normal' years, this table does not currently present PR24 performance commitments based on outturn data.
Table 2f	Our current levels of service are outlined in our Drought Plan. We have no confirmed plan to amend our Level of Service for TUBs/NEUBs, and our WRMP sets out the continued need for TUBs and NEUBs across the planning period. We have stated the same values for the 'minimum' and 'modelled' Levels of Service in Table 2f, for each measure. It is our intention to use our simulation model to determine the 'modelled' Level of Service for the rdWRMP24, but we have not undertaken this analysis for the draft WRMP24. The 'modelled' chance of implementation for each measure will be less than or equal to the 'minimum', with the 'minimum' having been used as an input to out DO modelling.

Table 3	The climate change component of Target Headroom is zero after 2040, due to the application of a WRSE-developed method in which uncertainties are removed from Target Headroom when 'branching' occurs in the adaptive plan, in order not to double count. In addition, on a few occasions before 2040, negative contributions of climate change towards Target Headroom can be seen. These are due to the application of numerical methods and Monte Carlo sampling, are small, and should be regarded as anomalies.
Table 3 (all WRZs)	We have made the assumption that baseline TH and Final Plan TH are the same for dWRMP24 (aside from amendment noted earlier in this document). For rdWRMP24 we will assess additional uncertainty due to new sources, and may amend our Final Plan TH.
Table 3, TWSLND	A known error exists in which a raw water transfer has been allocated as a potable transfer. This was due to an error in data input by Affinity Water to WRSE. In order not to risk water balance errors we have left this error in place.
Table 4	We have removed all reference to 'Refined feasible' options in Table 4. The options have been classified as Unconstrained, Feasible or Preferred only. Select WRSE options which were not included in TW options appraisal process have been removed from Table 4 and Table 5a-b to ensure alignment with TW dWRMP24 section 7 – Appraisal of Resource Options and Appendix P – Options list. These options were not selected in any Programme and therefore should have no impact on Tables 7 and 8.
Table 4	Column BC is 'Freeform column 8'. Some options classified as 'In-Zone Infrastructure', 'New Resource' or 'Transfer'. Some options have no classification provided. The benefits of this column will be reviewed for the next round of WRMP24.
Table 4	It is noted that the Table 4 metrics are developed from a methodology which relies on the WRSE Investment Model metrics.
Table 4, 5b	It is noted that there is a marginal difference in the carbon cost calculation methodology between Tables 4 and 5b. The methodology will be reviewed for the next round of WRMP24.
Table 4, Table 5b	Current carbon figures for demand management activities are based on preliminary assumptions for demand management. Revisiting carbon values will be provided for the revised draft of WRMP tables.
Table 5	Transfer options have been included for Affinity and Southern Water which are not included in Table 4 which only includes for TW options in alignment with TW dWRMP24 section 7 – Appraisal of Resource Options and Appendix P – Options list.
Table 5	No data is published beyond 2074-75 in Table 5. This may affect some options WAFU values presented in Table 4 versus Table 5. Table 4 WAFU has been calculated for an 80-year period.
Table 5a	Table 5a NPC 'EA' calculation starts from 2024-25. Some of the options spend starts earlier than this date which will result in a variance as compared with the NPC published in Table 4. The early spend is required so that options can be delivered for when they are required. Therefore the formula in Table 5a has been overwritten to ensure that the full cost of the options with these early start dates are reported within NPC calculations and they align with values in Table 4.

Table 5b	It has been noted for some options that the 4 year asset life replacement (capex) occurs in the first instance at 3 years before switching to a 4 year cycle eg. *TWU_mogdenreuse 100*. This will be reviewed ahead of the next round of WRMP24. It has been noted that New Reservoir – SESRO fencing (capex) costs are the same for all size variants of the reservoir. This will be reviewed ahead of the next round of WRMP24.
Table 6 – 11.1FPD, 13.1 FPD, 16.1FPD	No uplifts have been applied to DI or TH in Table 6. Our DO calculations already account for amendments to bulk supplies during drought, so no amendments made to 13.1 FPD.
Table 6, 12FPD; all zones, 1 in 500-year return period	Our initial Level of Service (for EDOs) is '1 in 100-year', moving to '1 in 200-year' by 2031, and '1 in 500-year' by 2040. We have reflected our LoS in both our baseline WAFU and our final plan WAFU. As such, the formula used in line 12FPD would not show a '1 in 500-year' WAFU through the whole planning period. As such, we have amended the formula in 12FPD. We have copied and pasted values from Table 6, rather than copying and pasting formulae.
Table 6, 8FPD; all zones, all return periods	In our submission of Table 6, in the 'Level 3 drought permits/orders' row, we have made an assessment, consistent with our assessment in the TW drought plan, of the DO benefit that drought permits would bring. For London, this is based on modelling carried out for WRMP19, with simulation modelling of DO impacts of London's drought permits having not been undertaken for WRMP24 to date. In Table 3, and our wider WRMP planning, we have, in discussion with the EA, agreed those drought permits which we should consider in our supply-demand balance planning in the medium term (up to 2040), and those which we should not consider in this respect due to their environmental impact. In Table 6 we have assumed that drought permits that our current drought plan refers to are available throughout the planning period.
Table 7	In table 7, we have marked each programme as having 11% likelihood, as we have 9 future supply-demand pathways that we consider to be equally likely. The total of all likelihood figures is 88%, because this table excludes the 'preferred programme', which also has an 11% likelihood In table 7, we have marked the 'least cost programme' likelihood as N/A. This is because the least cost programme is the programme of options along pathway 4 (the same pathway along which we describe our preferred programme), but solving the problem on a least cost, rather than best value, basis. Since we intend to adopt our best value plan, rather than our least cost plan, we do not consider there to be a likelihood of adopting the least cost programme as an alternative plan.

Table 7	We have interpreted 'WRZs impacted' to mean all those WRZs in which a different supply-demand balance pathway is followed, rather than a pathway along which a different options selection is followed.
Table 8	Formula in Table 8c, C17 (= row C11 + row C14) has been assumed to be correct, although the guidance document gives the rule "Automated calculation based on inputs in C10 and C13 for AMR and C11/C14 for AMI", which could potentially be interpreted as requiring a division been the two values.
Table 8	Rows labelled F27 and F28 in the WRMP tables are assumed to be the equivalents of the rows labelled F1 and F2 (respectively) in the guidance for these tables.
Table 8	Row F27 Leakage maintenance costs has been calculated using our current unit cost from AMP7 and will be reviewed for the revised draft to provide a strategic delivery plan that will take account of potential efficiencies in delivery.
TWSLND	We have not assessed a critical period supply-demand balance for London, due to the large amount of storage and interconnectivity afforded by the Ring Main in London WRZ.


Thames
Water