

## Appendix 33: Wantage and Grove Campaign Group

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1.1	Representation	<p><b>Leakage</b></p> <p>Affinity's plan provides for 18.5% leakage reduction within the 2020 to 2025 period through increasing intensity of leakage activities, innovation, efficiency and reducing customer side leakage. In the longer-term they will aim to achieve an overall level of 40% leakage reduction by 2045, through further innovation and efficiencies in distribution network leakage control and customer supply pipe leakage reduction. Yet:</p> <p>Despite a large percentage of newer housing stock in their region, Affinity leakage rates are above most other water companies. Their leakage rates are 59% higher than South East Water, who cover similar areas (8.1 m3 per km of pipe per day compared to SE Water's 5.1).</p> <p>Given that Affinity's leakage rate is higher than most other water companies, they should aim for a greater than 50% reduction in their leakage aiming to achieve the average national leakage rate.</p> <p>A recent report by the House of Commons Environment, Food and Rural Affairs Committee has suggested that Ofwat should set a long-term target for leak reduction. While companies within the industry have independently agreed to aim to cut leakage by 50% by 2050 the Committee suggests that "continuing the trajectory set by the target of 15% by 2025, the water industry should collectively be aiming to reduce leakage by 50% by 2040, rather than 2050.</p>
	Our Response	<p><b>We fully support the ambitions to substantially reduce leakage by 2050. Our initial aim is to achieve a 50% reduction in leakage between 2015 to 2045. This 30-year programme to reduce leakage by 50% is planned to deliver five years earlier than most other water companies because we started the process in 2015, and will already have delivered a 14% reduction by 2020, followed by a further 18.5% reduction between 2020 and 2025. We will then aspire to achieve a higher level of reduction, to 57% from the 2015 position, which will allow us to reduce leakage by 50% from our 2020 position.</b></p> <p><b>Clarification of the 50% target and the ambition for 50% post AMP7 (i.e. 57% overall) is included in the fWRMP19 along with clarification of how we have handled mains renewals for leakage and trunk mains schemes. Explanation of how we will achieve leakage efficiencies and details of our leakage reduction strategy are provided in Technical Report 4.8: Leakage Strategy Report and referenced in the fWRMP19.</b></p>
	Summary of any change to our final WRMP	Updated Technical Report 4.8: Leakage Strategy Report and referenced in the fWRMP19.
1.2	Representation	<p><b>Water Consumption</b></p> <p>Affinity Water customers use an average of 152 litres of water per person per day. This is higher than the national average consumption (for England and Wales) of 141 litres per person per day. Yet:</p> <p>Affinity's plan proposes an unacceptably low reduction in water consumption, well outside the industry norm. Metering efforts are inadequate, and poor compared with other water companies. They plan to continue to install 'dumb' water meters long after these have been abandoned by other companies in favour of smart meters (which reduce consumption by more than 10%).</p> <p>Targets to reduce individual consumption lag behind the best in the industry by a significant margin. Affinity is planning for hardly any improvement in individual water usage after 2025.</p> <p>Some companies, eg. Anglian Water have found that installing 'smart meters' reduced usage another 11% beyond the savings achieved by installing dumb meters. Affinity plan</p>

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		<p>to continue installing dumb meters for several years and instead should aim to fit smart meters much sooner. The NIC recommend widespread smart meter installation by 2035, and Anglian Water aims for 95% meter penetration by 2030.</p> <p>Affinity should aim to achieve such targets. Why isn't it considering the ability of smart meters, the effect of potential water appliance labelling and new house water efficiency to drive this usage down to similar levels as other water companies?</p>
	<b>Our Response</b>	<p><b>We will reduce PCC to 129 litres per head per day (l/h/d) by 2025 through the continuation of our existing Water Saving Programme and employing new demand management options (this is the largest PCC reduction in the industry for this period). Significant additional explanation and quantification has been added to Chapter 6 of the fWRMP19 to demonstrate how we will meet the 129 l/h/d AMP7 target and the strategy beyond that.</b></p> <p><b>We anticipate 80%-meter penetration by 2025 and 90% meter penetration by 2045. We recognise this represents a lower target than at the dWRMP19. This is largely as a result of the higher than anticipated need to install internal rather than external meters, and taking on board experience to date around the practicalities of installing meters internally as well as wider industry learning. An explanation of the reasons for, and very limited implications of, the slower rate of metering as part of the Water Saving Programme are included, along with justification of the approach to smart metering rollout in Chapter 6.2 Our demand management strategy in the fWRMP19.</b></p>
	Summary of any change to our final WRMP	Updated Chapter 6 in fWRMP19.
1.3	Representation	<p><b>Population Growth</b></p> <p>Affinity's plan states that the population is growing and is expected to increase by 12% by 2025, 27% by 2045 and 51% by 2080, yet:</p> <p>Affinity fail to take account of actual historical house-build rates. Using such achieved rates could reduce Affinity's demand by over 100 Million litres per day (Ml/day).</p> <p>House builders often struggle to achieve even 40% of what is planned. Adjusting the planned figures by 'real world' achievement rates would reduce the forecast increases in population by up to 50%.</p>
	<b>Our Response</b>	<p><b>We have followed required best practice and planned for growth as per Local Authority plans. Where we have made adjustments due to differences in baseline population and properties and the management of blocks of flats in the forecast, we have clarified this in our plan and technical reports.</b></p> <p><b>We recognise that high growth is only within the draft GLA plan, so this is not included in the forecast of baseline demand. Our fWRMP addresses GLA growth through inclusion of a "high-growth" scenario in our sensitivity testing. In the event of a "high-growth" scenario being realised we will rely on some of the less environmentally-damaging drought permits and will accelerate delivery of our first supply option to 2032. We would need a second strategic option by 2042 and a third strategic option within the 2080 time horizon.</b></p> <p><b>Additional growth from the CaMkOx development corridor has not been explicitly included as no planning figures are available at the moment but we will continue to review our forecasts as new information becomes available as reflected in our adaptive plan.</b></p>
	Summary of any change to our final WRMP	Our fWRMP19 addresses GLA growth through inclusion of a "high-growth" scenario in our sensitivity testing.
1.4	Representation	<b>Reducing chalk stream abstraction</b>

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		<p>Affinity's supply area is home to many rare chalk stream habitats within vulnerable catchments (an area of land where water collects when it rains). To help improve the natural environment they plan to reduce the amount of water they take from underground sources (aquifers) from within these catchments by 36.3 million litres of water per day by 2025. Yet:</p> <p>Affinity's 'Supply 2040' scheme allowing transfer of water from South to North of their Central Region, is welcome and should be brought forward to increase adaptability in responding to any increased demand, allow larger, quicker reductions in chalk stream abstractions and improve the ability to manage London supplies.</p> <p>Affinity's own plan proposes using more water from Anglian's existing Grafham reservoir and installing conditioning treatment at Sundon Reservoir to address water quality issues. This is planned for 2024-25, and is the real project which begins the saving of the chalk-streams, without waiting for the Abingdon Reservoir. Whilst this is welcome, it should also be brought forward.</p> <p>About 70% of the water supplied to Affinity's northern zones by the Supply 2040 network is almost immediately returned as treated effluent to the Rivers Thames and Lea and could then be reused in exactly the same way as they propose to use water from the South East Strategic Reservoir. The need for the reservoir is not proven.</p>
	<b>Our Response</b>	<p><b>We have included details of the timing and inclusion of schemes from our "Supply 2040" strategy in the fWRMP19, and shown how it affects individual WRZ supply-demand balances under all of our modelled futures within our Technical Report 4.9: Economics of Balancing Supply and Demand Modelling and Decision Making Process.</b></p> <p><b>In summary, all of the proposed AMP7 developments, which are detailed in our Business Plan, are required to support the transfer of 17Ml/d out of WRZ6 into WRZ4, or to enable the Grafham transfer enhancement. AMP8 (2025 to 2030) then contains our second stage transfer from WRZ6 to WRZ4, and finally we have a scheme to transfer water from WRZ1 to WRZ3 in the longer term. This is now more fully described in the main Plan document.</b></p> <p><b>Our Plan incorporates the individual elements of "Supply 2040" as early as they are needed to ensure that surpluses within individual WRZs are usefully transferred into other WRZs in the Central Region. The fWRMP19 supports the requirement to distribute water to areas of need, avoiding strategic deficits and surpluses. We will continue to plan investment as quickly as is necessary to avoid water deficits and surpluses, which will also avoid building strategic schemes earlier or later than is necessary.</b></p> <p><b>We have updated Technical Report 4.9: Economics of Balancing Supply and Demand Modelling and Decision-Making Process to include the most up to date assessment of our supply demand balance for each future which supports the timing of the requirement for the transfers. The individual balances within each WRZ for each future are provided as graphs within the technical report.</b></p>
	Summary of any change to our final WRMP	Updated Technical Report 4.9: Economics of Balancing Supply and Demand Modelling and Decision Making Process and Chapter 6.
1.5	Representation	<p><b>The South East Strategic Reservoir at Abingdon</b></p> <p>Affinity's plan proposes a 150 million cubic meter reservoir near Abingdon in the Vale of the White Horse, within sight of our community, which would provide up to 300 million litres of water per day. It suggests that this reservoir will provide additional water in periods of severe drought, but this reservoir will rely on top-up in winter; a succession of dry winters (as happened in 2011 and 2012) does not allow this. Yet:</p>

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		<p>Affinity Water has not proven the need for the Abingdon Reservoir at any date before the late 2060s, and there is no case for its construction starting early.</p> <p>Statements have been made by Affinity Water and Thames Water that the Abingdon reservoir is required early to reduce abstraction from chalk-streams. However, Affinity's own plan proposes a much faster way of achieving this, by 2025, by fully utilising water from their existing connection to Anglian's Grafham reservoir.</p>
	<b>Our Response</b>	<p><b>The timing of our first strategic option has been carefully considered and determined according to our decision making methodology. The results of that modelling are provided in section 7.2.4 of the main SoR document.</b></p> <p><b>The 'conjunctive use' system simulation modelling and hydrological analysis required to quantify the impact that our investment programme might have on downstream flows in the River Thames does not currently exist, so we have committed to supporting the Water Resources in the South East (WRSE) group to develop the relevant analysis in AMP7. We have, however carried out a qualitative analysis of the impacts of our investment programme on downstream flows in the River Thames. In the short to medium term (pre 2038) the impact will depend on the balance between reducing demand, and hence effluent returns, versus the reduction in abstraction and the Grafham imports. There is a risk that flows may tend to reduce as a result. In the longer term the introduction of strategic supply schemes will have a beneficial affect on flows, but this will need to be set against licencing and quality implications. The potential additional benefits from these increased flows will need to be considered against water quality implications and licencing arrangements, which will need to be accounted for in the regional economic analysis during AMP7.</b></p>
	Summary of any change to our final WRMP	N/A
1.6	Representation	
		<p><b>Why the need for the Reservoir is bogus</b></p> <p><b>Not required until at least the early 2050's</b></p> <p>Even using Affinity's figures (which we dispute), the Affinity Central Region has a surplus of 25 MI/day in 2038, when it is claimed Abingdon Reservoir is needed. In fact, Affinity's own figures show it does not need a new source of water until the early 2050s.</p> <p><b>More efficient Water Resource Plan from the Group Against Reservoir Development (GARD)</b></p> <p>GARD proposes a three-phase solution for Affinity to increase its water supply and relieve chalk stream over-abstraction which is efficient and deliverable much sooner than the South East Strategic Reservoir at Abingdon.</p> <p>Phase 1: Using the Supply 2040 network, Affinity could transfer the 25 MI/day water surplus from its southern zones, which are in surplus, to its northern zones where there is a predicted shortfall. About 70% of water supplied to Affinity's northern zones is returned as treated effluent to the lower River Thames and Lea and would be available for use by Thames Water to supplying London. Both Thames and Affinity omit this from their water balance plans.</p> <p>Phase 2: The transfer of up to 15 MI/day from Thames Water's extraction licence for its Slough-Wycombe-Aylesbury (SWA) zone at Sunnymeads to the neighbouring Affinity zone. This is possible as SWA zone is in surplus up to the 2080. Again at least 70% of this source would be returned to the Thames Water London zones.</p> <p>Phase 3: Affinity could connect to the Thames Water Queen Mary reservoir and, using pipelines and water treatment plants already planned, transfer up to 100 MI/day of water via the Supply 2040 network to their northern central zones, to meet their deficits and provide further chalk-stream relief. Once again, over 70% of this water will be returned as treated effluent to the Thames inputs to the London supply. A probable 90% of the enhanced chalk-stream flows will also be returned.</p>

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		All these alternative delivery options are adaptable in that they can be scaled up if extra demand does appear in the network. This is not possible with reliance on a huge reservoir project, which, once begun, will have to continue to completion, with the possibility that it becomes a white elephant, not needed for supply. Adaptable solutions are crucial in view of the uncertainties over all the factors contributing to future demand.
	<b>Our Response</b>	<p>The ‘surpluses’ identified by GARD appear to refer to the release of water from WRZ6, and the DYAA availability from Thames Water’s SWA WRZ. In the first case our more detailed analysis provided in Technical Report 4.9. shows that the Supply 2040 bulk transfer proposals fully utilise any surplus before strategic developments occur. In the second case GARD are incorrect to assume there is a surplus. The way that Thames Water’s hydrology is modelled for WARMS means that flows only take account of actual recent abstraction from the upstream sources, so if annual average abstraction were to increase as a result of any trading arrangement then this would derogate the London WRZ DO. We also note that there is no surplus under the baseline critical period condition for SWA, and limited surplus (10MI/d or less) forecast for the 2038+ period following Thames Water’s preferred plan investments. We have both a DYAA and DYCP risk in the medium term, and do not have any raw water storage, so require that any new supplies are reliable throughout the summer and autumn period, which would not be the case for the SWA ‘surplus’.</p> <p>GARD appear to have mis-understood the timing and purpose of the elements of “Supply 2040”, as there is no requirement to complete all elements by 2030, even under higher sustainability reduction scenarios. We have clarified this within the fWRMP19 Chapter 6, which includes details of the need and associated timing of development. We have also shown how Supply 2040 affects individual WRZ supply-demand balances under all of our modelled futures within our Technical Report 4.9: Economics of Balancing Supply and Demand Modelling and Decision Making Process. Because the plan allows us to balance supply and demand across all WRZs, any further investment is unnecessary for water resource management purposes and represents an unnecessary cost to customers.</p> <p>In summary, all of the proposed AMP7 developments, which are detailed in our Business Plan, are required to support the transfer of 17MI/d out of WRZ6 into WRZ4, or enable the Grafham transfer enhancement. AMP8 (2025 to 2030) then contains our second stage transfer from WRZ6 to WRZ4, and finally we have a scheme to transfer water from WRZ1 to WRZ3 in the longer term. This is now more fully described in the main Plan document.</p> <p>Our Plan incorporates the individual elements of “Supply 2040” as early as they are needed to ensure that surpluses within individual WRZs are usefully transferred into other WRZs in the Central Region. The fWRMP19 supports the requirement to distribute water to areas of need, avoiding strategic deficits and surpluses. We will continue to plan investment as quickly as is necessary to avoid water deficits and surpluses, which will adapt in line with our adaptation in the timing of strategic options. We would only accelerate options beyond that where there is a clear benefit to customers – for example the low-cost Arkley North scheme has been brought forward to AMP7 to address intra zonal needs, even though it is not triggered in EBSD until later to meet WRZ level deficits. This was shown to be a cost effective solution that will better enable local flexibility at the same time as addressing the longer term, inter zonal supply/demand balance requirements.</p> <p>We have updated Technical Report 4.9: Economics of Balancing Supply and Demand Modelling and Decision Making Process to include the most up to date assessment of our supply demand balance for each future which supports the timing of the requirement for the transfers.</p>
	Summary of any change to our final WRMP	Updated Technical Report 4.9: Economics of Balancing Supply and Demand Modelling and Decision Making Process.
1.7	Representation	<b>Severe Environmental Impact</b>

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		<p>We believe that the plans for the South East Strategic Reservoir at Abingdon will have a severe environmental impact on the Vale of the White Horse in Oxfordshire and should be removed.</p> <p>The latest plans are for a reservoir above the surrounding countryside with a capacity of up to 150 million cubic metres. This would involve building embankments to a height of between 15 and 25 metres to hold the water. That's about the height of an 8 storey block of flats and higher than anything else in the Vale of the White Horse.</p> <p>The reservoir embankments would enclose about 4 square miles and be 10.3 miles long. This would be the largest man made reservoir in the country and Thames Water have no experience of building a reservoir let alone one of this scale.</p> <p>In a recent radio programme, the German Water authority said that although they had built some very large reservoirs, they would never consider one as large as the British proposal, as a larger number of smaller reservoirs were much more cost effective and far less disruptive. Our Water Authorities should take note.</p> <p>The reservoir site covers flood-plain areas – increased flood risk in Hanney, Steventon and South Drayton unless very careful geo-engineering is done, yet Thames Water admitted at a meeting in Steventon that they do not yet have a flood water solution.</p> <p>The land is currently in agricultural use surrounded by rural communities expanding to cope with an additional 22,000 homes by 2031. Flooding in the area is already a problem and an infrastructure development of this scale will inevitably make this worse.</p> <p>We believe that developments should be proportionate and sustainable and that this proposal for a 150 million cubic meter reservoir is neither proportionate nor sustainable. We strongly oppose this proposal and believe that it should be removed from the plan. It is unnecessary and will have a greater environmental impact than any other means of meeting the demand for water shown in the plan.</p>
	<p><b>Our Response</b></p>	<p><b><i>Flooding Risk of SESR</i></b></p> <p><b>A number of comprehensive flood risk studies regarding the SESR are available. A review of flooding and the provisions made to mitigate effects on flood risk due to the SESR has been undertaken, available in Thames Water's Statement of Response No.2 Technical Appendix K. We have reviewed this and concur with the recommendations for further work, and also note that a Flood Risk Assessment for the SESR will be required to support the Development Consent Order (DCO).</b></p> <p><b><i>SEA and HRA</i></b></p> <p><b>We have addressed the points raised across the various representations which relate to the Strategic Environmental Assessment ("SEA") and Habitat and Regulations Assessment ("HRA") within the SoR appendices in further detail, as well as revising the fWRMP SEA/HRA documents where appropriate. We have included in the final SEA the second stage Egham to Iwer transfer and the small trading option on the River Thames.</b></p> <p><b>We recognise there are many stakeholders with a keen interest in some of the strategic options proposed in our plan which are covered under the SEA process, and we would like to continue to, or start to, engage with the relevant parties and stakeholders to help add to our knowledge base for each of these.</b></p> <p><b><i>Environmental Effects and Mitigation</i></b></p> <p><b>In order to generate the SEA and HRA we engaged separate consultants to Thames Water, who reviewed the information provided about environmental impacts, mitigation and amenity potential for the SESR option as part of their analysis. Their analysis, as described within the SEA report, generally concurred with Thames Water, and outlines the construction mitigation required for the scheme in a way that is cross-compatible with our other options. The SEA confirmed the potential for amenity improvements as part of the scheme assessment, along with the need to design these improvements as part of the planning application process.</b></p> <p><b><i>Resilience to Drought of the SESR</i></b></p>

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		<p>We have reviewed the technical reports relating to the drought and climate resilience of the SESR provided to us by Thames Water, which were peer reviewed through their technical stakeholder working groups, and consider that these clearly demonstrate that the SESR can provide the quoted yield reliably across a wide range of drought severities. We note that drought severity within those documents is as measured for the Thames Water supply system. We have therefore also carried out an initial review of the yield that we can expect from 50Mm<sup>3</sup> of storage (one third of the reservoir capacity) under our drought design condition and confirmed that this should provide us with the expected 100MI/d benefit. However, more detailed modelling, which will need to account for the 'secondary benefit' provided by increased effluent returns to Thames Water's intakes (see response Error! Reference source not found.), plus the differences in timing and duration between our critical drought events and Thames Water's critical drought events, is required before we can confirm the benefits from the scheme. This modelling is included within our AMP7 joint working investigations and is due to report before the crucial 2023 decision point.</p>
	<p>Summary of any change to our final WRMP</p>	<p>N/A</p>