Affinity Water

Your local supply, on tap

# Draft Water Resources Management Plan 2019 Statement of Response

## Affinity Water Limited

31 October 2018

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# 1 Executive Summary

1.1. From 19 March 2018 to 23 May 2018 we, Affinity Water Limited, undertook our statutory consultation on our draft Water Resources Management Plan 2019 ("dWRMP"). Specifically, we consulted on two different options for our WRMP: the "Preferred Plan" and the "Alternative Plan". The key features of these two different options are summarised in the table below:

| | **Preferred Plan** | **Alternative Plan** |
|---|---|---|
| Leakage reduction | 11% between 2020 and 2025 | 15% between 2020 and 2025 |
| Sustainability reductions | 10 Ml/day by 2025 | 39 Ml/day by 2025 |
| Per capita consumption by 2045 | 126 l/h/d[1] by 2045 | 120 l/h/d by 2045 |
| Drought resilience | Worst historic drought i.e. 1:60/1:80 year drought event (not using drought permits for additional water supply) | 1:200 year drought event (using drought permits for additional water supply for the first four years) |

1.2. Many consultees, including the Environment Agency (the "EA") and Ofwat, were not supportive of the Preferred Plan's key features. In contrast, the general approach taken in the Alternative Plan received endorsement. As a result, we have decided to produce a revised draft WRMP ("rdWRMP") which is based on the Alternative Plan with modifications as set out below.

1.3. Comments received in respect of the Alternative Plan, have been carefully considered and changes made (explained below) where these are thought to be necessary. In addition, we are undertaking further work to ensure that the options provided for in the Alternative Plan are based on robust evidence and assumptions. More broadly, we also accept that the Alternative Plan requires comprehensive re-drafting and re-formatting so that it is clearer and easier to understand.

1.4. As matters stand, and based on the representations received and the work done to date, we envisage that the rdWRMP will differ from the Alternative Plan in the following key respects:

[1] l/h/d - litres per head per day.

| | Alternative Plan | rdWRMP | Reason for change |
|---|---|---|---|
| **Sustainability reductions** | 39 Ml/day by 2025 | 36.31 Ml/day at Dry Year Annual Average and 23.66 Ml/day at Dry Year Critical Period by 22 December 2024 | Updated to reflect the numbers in the WINEP3[2] table. Same approach as Alternative Plan |
| **Leakage reduction** | 15% by 2025 | As per the Alternative Plan. Added further leakage reduction after 2025 aiming to achieve a 50% reduction by 2050 (from 2015 levels) | As per the recommendation of the National Infrastructure Commission |
| **New groundwater** | Development of new chalk groundwater options in our Central region | No development of new chalk groundwater options in our Central region | In response to representations, particularly the EA |
| **Supply 2040 (programme for strategic water transfers)** | Not included | Included | In response to representations about the need to improve resilience |
| **Drought resilience** | 1 in 200-year drought with use of emergency drought permits/orders until 2024 | As per the Alternative Plan. Added increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024. | In response to representations about the need to improve resilience |
| **Per capita consumption** | 120 l/h/d by 2045 | 129 l/h/d by the end of 2025 and aiming towards 110 l/h/d by 2040 | In response to representations regarding ambition on demand management; we also had to adjust the 126 l/h/d figure from the Alternative Plan because it incorrectly included the effect of Temporary Use Bans |

[2] Water Industry National Environment Programme

| | Alternative Plan | rdWRMP | Reason for change |
|---|---|---|---|
| **South East Strategic Reservoir** (referred to as the Upper Thames Resource Development in the dWRMP) | Delivery planned for 2039 | We are carefully considering the need for and suitability of this option, as well as the suitability of other strategic options and appropriate delivery dates | |

1.5. Going forward, when our ongoing work is complete such that the Alternative Plan has been subject to a full critical evaluation and all necessary changes clearly identified, we intend to undertake a further consultation on the main changes.

1.6. The main topics about which representations were made are addressed below, along with an outline of the changes we plan to make to the dWRMP as a result. In addition to this, at Appendix One we provide an individual response to every representation made.

1.7. Appendix Two sets out our responses to three national reports which are relevant to our water resources management plan but which do not make not specific representations on our dWRMP.

## 2 Outline of Consultation Process

2.1. To support customer engagement, we appointed the UK's second largest market research agency, Ipsos MORI, to work with us to deliver our customer engagement programme. The programme included bespoke market research, recommendations for customer segmentation, analysis of operational customer contact data and triangulation.

2.2. We developed a programme of engagement to enable us to set out our overall approach and provide our regulators, key stakeholders and customers with an opportunity to tell us what they expect from our dWRMP and our Business Plan for 2020-25. We used an enabling phase to map out a profile for our consultation activities that ensured both dWRMP and Business Plan consultation periods tracked one another cohesively and effectively.

2.3. Prior to submitting our dWRMP to the Department for the Environment, Food and Rural Affairs ("Defra"), we undertook a pre-consultation with our stakeholders and customers. We wrote to over 2,000 stakeholders asking for their views on our proposals for our dWRMP. Customer views were captured via a variety of market research findings available via our PR19 Customer Engagement programme. These views were subsequently used to develop follow up areas of focus for the quantitative and qualitative market research during the dWRMP public consultation.

2.4. We undertook a full public consultation on our dWRMP Preferred and Alternative Plans which was circulated to statutory consultees as well as any other persons and organisations with an interest in our plans. In addition, the dWRMP was published on our website and made publicly available to any person wishing to review it. We published a non-technical consultation document which was widely promoted encouraging customers and stakeholders to respond.

2.5. We received a total of 82 responses to our consultation including responses from customers, the EA, Ofwat, Natural England, the Canal & River Trust, the Consumer Council for Water, local authorities and environmental groups. In addition, 65 stakeholders, representing the organisations listed below, attended eight stakeholder forums:

| | |
|---|---|
| Letchworth Garden City Heritage Foundation | London Borough of Harrow |
| North Herts Farmers | Three Rivers District Council |
| Letchworth Sustainability Forum | VK. Dacorum Environmental Forum |
| University of Hertfordshire | Friends of Gadebridge Park |
| Shepway Environment and Community Network | Canal & River Trust |
| Monks Horton Parish Council | Herts and Middlesex Wildlife Trust |
| Hythe Town Council | Ver Valley Society |
| Stanford Parish Council | Guildford Borough Council |
| Kent County Council | Burpham Neighbourhood Forum |
| Dover District Council | StepChange Dept Charity |
| Up on the Downs | Harlow Council |
| Lyminge Parish Council | Tendring District Council |
| Colne Valley Fisheries Consultative | River Chess Association |
| Chesham Town Council | Chilterns Chalk Streams Project |
| Chiltern and South Bucks District Council | The Angling Trust |
| Chalfont St Peter Parish Council | Misbourne River Action |

2.6. During Phase 2 of the PR19 Customer Engagement programme we sought both quantitative data and qualitative opinion on our dWRMP Preferred and Alternative Plans from customers through a broad range of activities and accessed customers and stakeholders through a variety of channels to ensure they were afforded the opportunity to respond in accordance with their preferences.

2.7. Each piece of research was carefully scoped to ensure we defined the objectives and considered the materiality and significance of the issues to be addressed. This informed the approach we took to ensure the sample size and methodology chosen were both appropriate and proportionate to the importance of the issue. We recognised the need to segment customers and stakeholders, when testing hypotheses, and to disaggregate findings to ensure we identified any significant differences.

2.8. Throughout the process we welcomed the feedback and participation of our Customer Challenge Group ("CCG") in all aspects of our engagement activities.

2.9. Further detail of the consultation process, as well as the findings, will be provided in the rdWRMP Technical Report: Engaging with Customers, Communities and Stakeholders, to be published in Spring 2019.

# 3 Supply

## INTRODUCTION

3.1. Several consultees made representations in relation to the way in which the dWRMP provides for the supply of water. The main issues raised in the responses concern the need to:

- hold Affinity Water to account;
- ensure the South East Strategic Reservoir is built;
- ensure that a reduction in groundwater abstraction does not lead to flooding in some areas; and
- end the perceived over-reliance on groundwater

3.2. A summary of our response to the above issues is set out below. In addition, the EA raised several matters relating to supply. The EA's representations are dealt with in the order in which they appear in the EA's consultation response, at the end of this section.

## RESPONSE TO KEY REPRESENTATIONS (EXCLUDING THE EA) ON SUPPLY

### *Over-reliance on groundwater*

3.3. Several consultees raise concerns that the dWRMP places excessive reliance on groundwater supplies, especially in the context of chalk streams. There were particular concerns in respect of groundwater abstractions from the River Ver and the River Chess catchments.

3.4. We are working closely with the EA to reduce groundwater abstractions where evidence shows this is necessary to protect the environment. To achieve this, we are working with the EA to identify sources where groundwater abstraction is found to be having an impact on river flows and the environment. As part of this process, we are implementing an extensive monitoring programme. This will allow us to identify the benefits to river flows and ecology where reductions are made, as well as better understanding the way in which river catchments and chalk aquifers behave across a range of drought conditions.

3.5. The work to reduce abstractions further must be seen in the context of the considerable progress that has already been made. Over AMP6 (2015-2020), we are working to achieve a 42 Ml/day reduction in groundwater abstraction. The rdWRMP provides for further planned reductions of 36.31 Ml/day (2020-2025) which reflects advice we have received from the EA. This is in accordance with the Alternative Plan updated with the latest volumes as per the EA's WINEP3 table. Moreover, where the EA has advised against abstraction from chalk sources, the dWRMP will be changed so that it reflects this advice. As such, the rdWRMP does not provide for any new chalk groundwater options in our Central region.

3.6. In respect of the River Ver specifically, the AMP6 (2015-2020) company-wide reduction of 42 Ml/day includes a 5.8 Ml/day reduction in groundwater abstraction from the Ver catchment. When this reduction is added to the reduction made in 1993 at FRIA[3] source (approximately

[3] Names/locations within this Statement of Response are referred to by a code for security reasons.

13 Ml/day) it accounts for around a 40% reduction in groundwater abstraction from the Ver catchment. If we add to this the planned AMP7 (2020-2025) reductions included in the WINEP3 table and in our rdWRMP, this will amount to an over 50% reduction in groundwater abstraction in the Ver catchment since the 1990s.

3.7. In AMP6 (2015-2020) we were not required to reduce our level of abstraction in relation to the River Chess. This is because water abstracted from the upper catchment of the River Chess (i.e. CHES and CHAR sources) returns to the river via the Chesham Sewage Treatment Works ("STW") outflow, thus mitigating the impacts of abstraction. The section of the river upstream of the STW outfall is the focus of the ongoing AMP6 (2015-2020) National Environment Programme investigation, in collaboration with Thames Water and the EA, the results of which have been shared with local stakeholders. The investigation is now at the "Options Appraisal" stage, through which solutions will be developed to address any issues identified during the study. A potential reduction is included in the company wide reduction of 36.31 Ml/day planned for AMP7 (2020-2025) to be implemented through the rdWRMP.

3.8. We have also made several other commitments to ensure a continuous supply of water to customers in the future, while also recognising the need to safeguard the environment. These commitments include an ambitious programme of morphological works to enhance our rivers and enable them to attain a healthy ecological status and meet the objectives of the Water Framework Directive. We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.

3.9. If the South East Strategic Reservoir were constructed as envisaged in our Preferred Plan and Alternative Plan, it would further increase our resilience and allow better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 was a helpful reminder that we cannot rely on surface water supplies alone – conjunctive use[4] is the most appropriate form of water resources management to meet rising demand under variable weather patterns.

### *Risk of flooding in the St Albans area caused by reduced groundwater abstraction*

3.10. Respondents to our consultation expressed concerns that our plans to reduce groundwater abstraction may result in increased flooding around the St Albans area.

3.11. The EA is the authority responsible for alleviating any flood risk arising from abstraction reduction required to meet the objectives of the Water Framework Directive. We have therefore been working closely with the EA and will, of course, consider their advice in this regard.

3.12. The EA has shared the Ver Groundwater Emergence Technical Memo which addresses flood risk. It shows that, as a result of the planned sustainability reductions, the groundwater level is expected to rise to about 1.3 metres. Importantly, however, this does not mean that the

[4] Water supply resources that are used in a conjunctive manner (i.e. combining the use of two or more sources in a way that increases yield and minimises negative impacts and costs).

surface water will rise by this amount, as there is evidence of over pressurisation of the chalk aquifer in the Cottonmill allotments area, where watercress farming took place in the early 1900s. The watercress beds here were fed by artesian boreholes that used the aquifer's overpressure to supply groundwater of a constant temperature so as to avoid freezing during the winter months. Some artesian boreholes are still active downstream of the allotments area in other water cress facilities nearby.

3.13. Further, we are participating in an EA led project that is considering proposed river restoration work in the allotment area to alleviate flood risk by returning the river to its natural course so that it is no longer flowing out of its original course, but is instead returned to its natural course.

3.14. Open meetings were held in the St Albans area where discussions took place with local residents, landowners and allotment holders to address concerns arising from these proposals.

## RESPONSE TO REPRESENTATIONS FROM THE EA

3.15. The EA raises various queries in respect of supply which are addressed below.

### *Recommendation 3*

3.16. The EA is of the view that the Preferred Plan does not deliver adequately WINEP (Recommendation 3). In particular, it said that the Preferred Plan does not include the sustainability reductions required to meet the River Basin Management Plan objectives (Recommendation 3.1).

3.17. We have addressed this representation as follows. In the Preferred Plan, we adopted an evidence-based approach derived from the knowledge gained through our National Environment Programme investigations over AMP5 (2010-2015) and AMP6 (2015-2020). Based on this evidence of direct environmental benefits it provided, we proposed sustainability reductions of 10 Ml/day in the Preferred Plan. Following discussions with the EA we are allowing for a comprehensive programme of monitoring to establish the extent of the benefit achieved by the reductions and pending the outcome of this programme of monitoring, we will plan for delivery of the full volume of sustainability reductions identified by the EA through the WINEP3 table. This is consistent with the approach taken in the Alternative Plan.

3.18. The EA has identified a discrepancy between the costs of morphology actions in the Preferred Plan and the Alternative Plan (Recommendation 3.2). The rdWRMP addresses this by referring to the morphological actions in our Business Plan for 2020-25, to ensure consistency. Discussions with the EA are also ongoing to confirm that exact scope and location of the morphology work required. The rdWRMP will reflect the updated position. Our Preferred Plan included a more extensive programme of morphological works than the Alternative Plan as we believed these would deliver greater environmental benefit than the additional 23 Ml/day of sustainability reductions. The rdWRMP will include the full programme to morphology actions listed on WINEP3. We are working with the EA to refine the location and projects to start work in AMP7 (2020-2025).

3.19. The EA also questioned the delivery mechanisms and timing of sustainability changes in the Preferred Plan, finding that it was not acceptable to delay the sustainability reductions for the

Misbourne catchment (Recommendation 3.3). Following discussions with the local EA team, we have agreed that in the rdWRMP the sustainability reduction volume for the CHAL source will be moved to the AMER source instead, for implementation in 2024. This means that the CHAL source will be removed from the abstraction incentive mechanism ("AIM") list, because it is no longer considered to be environmentally sensitive, but AMER will remain on it, as has been the case since 2016. The AIM baseline for the AMER source will be revised to the AMP6 (2015-2020) average volumes following sustainability reductions.

3.20. The EA commented that the implementation date for sustainability reductions was incorrect (Recommendation 3.4). This was an error, so the rdWRMP will record an implementation date of 22 December 2024.

### *Recommendation 4*

3.21. The EA considers that groundwater deployable output assessments may present a "worst case" scenario and therefore underestimate deployable output (Improvement 4.4). A similar concern was expressed regarding the data used to assess the worst historic drought (Improvement I4.6). The use of the lumped parameter groundwater model to assess deployable outputs is a common method used widely in the water industry for hindcasting groundwater levels and linking them to source deployable outputs. Following the production of the main deployable output report, further sensitivity testing took place to understand whether the worst historic droughts in the 1930s and 1940s were indeed the worst in the area. This has been proven to be the case and is consistent with work presented by the British Geological Survey and the Met Office, and is also consistent with Anglian Water's assessment. The report explaining the sensitivity testing (the Water Resources Management Plan and Drought Management Plan Links Report) has now been shared with the EA as a supporting document to the main Deployable Output report. Following discussions with the local EA team, we understand that this evidence is acceptable and, therefore, the deployable output figures used in the rdWRMP will be based on the same methodology. Accordingly, we do not consider that any change is needed in respect of this representation.

3.22. The EA expressed the view that a full conjunctive use model should be developed (Improvement I4.5). The Economics of Balancing Supply and Demand modelling works on a Water Resource Zone ("WRZ") scale while the Miser model operates in more detail, on a Hydraulic Demand Zone scale. We are using both models to understand potential network constraints in transporting water internally that may not be identifiable on a larger scale. A conjunctive use model would be of little assistance because our surface water sources are licence constrained. Also, the majority of our surface sources feed WRZ6, with only one feeding WRZ4 and being available for onward distribution to other zones. We do not agree that any amendment to the rdWRMP is needed in light of this representation.

3.23. We are exploring options to enhance connectivity between all our zones so that even more surface derived water can be available to more zones. Our groundwater sources are mainly drought constrained so the availability of water will reduce depending on the drought severity. Where local issues have been identified through the Miser modelling these are included in our Business Plan for 2020-25, for delivery in AMP7. Conjunctive use modelling would be helpful on the regional scale and to this effect, and we will continue working collaboratively with the Water Resources South East and Water Resources East groups to explore this.

3.24. The EA considers that there is inadequate justification for the conclusion that our surface water sources are not vulnerable to drought (Improvement I4.7). Our surface water sources on the River Thames are licence constrained, not drought constrained. Based on the Lower Thames Operating Agreement we are entitled to our full licensed volume at all times and it is Thames Water's responsibility to maintain flows at Teddington Lock due to their ownership of the bankside storage reservoirs next to the river that provide resilience in a drought. The drought assessment undertaken in AMP5 by Thames Water assumed that our surface sources along with South East Water's surface sources are maximised to licence, with the remaining water assigned to Thames Water to refill the reservoirs and support river flows above the trigger at Teddington. As such, for the purposes of our deployable output assessment, our surface sources have been maximised to licence and any treatment or network constraints are being addressed separately in our Business Plan for 2020-25. No change to the rdWRMP is required in light of this consultation response.

3.25. The EA raises the possibility that the groundwater records used for the assessment of the worst historic drought should be extended to ensure that they are fully representative – the Eastern region in particular is said to be calibrated against an area which is not comparable (Improvement I4.8). This is because our East Region groundwater sources are not considered vulnerable and, therefore, the deployable output methodology used for this area was not the same as for the drought vulnerable sources in our Central region. The Source Reliable Diagrams for our East sources included data from the droughts in the 1990s, 2000s, and 2012 to derive the deployable output figures without linking them to any local observation borehole. For all other water resource zones, the closest representative observed borehole has been selected. This approach is considered to be appropriate and is explained in the dWRMP Technical Report: Deployable Output and Climate Change Assessment. We do not consider that any amendment to the rdWRMP is required in this regard.

3.26. The EA considers that the way in which deployable output has been assessed for high priority and low priority sources requires further explanation and that consideration should be given to applying the methodology used for high priority sources across the board (Improvement I4.9). We have considered applying the high priority methodology across the board as part of the rdWRMP but have concluded that it is not necessary to do so. The issue is largely hypothetical in circumstances where the deployable output figures are not expected to change given the location of the low priority sources at the bottom of valleys, downstream of sewage works outflows, or surface water sources in the River Thames where the Lower Thames Operating Agreement is in place. We chose to prioritise drought vulnerable sources for the deployable output calculation as the greatest changes occurs in these groundwater sources given their known vulnerability to drought.

### *Recommendation 10*

3.27. The EA considers that we may have overestimated the deployable output available from the FRIA source such that baseline deployable output from existing licences should be reviewed so that the values relied on are in line with licence constraints and conditions (EA Recommendation 10). We have considered this consultation response and have been in discussions with the EA over the future use of this source. We will continue these discussions to ensure we come to a practical solution and will include a reduction in our rdWRMP if it is required.

### SUMMARY: KEY FEATURES OF THE RDWRMP - SUPPLY

3.28. Following on from the statutory consultation on the Preferred Plan and the Alternative Plan, the rdWRMP will have the following key features:

- sustainability reductions – the rdWRMP includes sustainability reductions of 36.31 Ml/day by 22 December 2024 (essentially in accordance with the Alternative Plan but updated to reflect the numbers in the WINEP3 table;
- the rdWRMP will not include the development of new chalk groundwater options in the Central region (this is a change to the Alternative Plan);
- drought management - the rdWRMP provides for a 1 in 200 year drought event (as per the Alternative Plan) with no drought permit sources used after 2024. In addition, the rdWRMP will increase drought resilience beyond 1 in 200 year at a future point after 2024 (this is going further than the Alternative Plan);
- the sustainability reduction volume for the CHAL source will be moved upstream to the AMER source instead, for implementation by 22 December 2024 (this represents a change to the Alternative Plan);
- morphological actions and costings will be made with reference to our Business Plan for 2020-25 and with input from the EA to determine the exact scope of what is required (this represents a change to the Alternative Plan); and
- inclusion of a potential reduction at FRIA following discussion with the EA if it is required.

# 4 Demand

### INTRODUCTION

4.1. In terms of demand, the main issues raised by consultees concern:

- housing and population forecasts;
- uncertainties in demand forecasts; and
- a lack of ambition in demand management.

### RESPONSE TO KEY REPRESENTATIONS ON DEMAND

#### *Housing and population forecasts*

4.2. Various consultees requested further explanation of how our housing and population forecasts were calculated given that we relied on a combination of trend-based population forecasts and local authority plan-based forecasts. Some also expressed concern about the extent to which our forecasts are consistent with those of local authorities, particularly in circumstances where significant housing growth is planned.

4.3. For example, the EA considers that demand may have been underestimated by relying on adjustments to out-of-date local authority plan-based figures (EA R8.1). The rdWRMP will contain the latest local plan figures, and we will take into account figures from the Greater London Authority's draft London Plan, as well as the Government's new standard methodology for calculating housing need for local plans. Further explanation of how uncertainties will be managed should also be included.

4.4. In light of the representations received, we have carefully reconsidered our housing and population forecasts. Where an improved approach has been identified, we have adjusted the methodology. As such, we the demand forecasts on which the rdWRMP is based have been developed in accordance with best practice and are as accurate as possible.

4.5. In terms of the specific adjustments we have made:

(a) For the rdWRMP we have adjusted the way the annual property build rate is applied. Previously, for the purposes of the Preferred Plan and Alternative Plan, we calculated the annual build rate on a company-wide level. We then apportioned this to each Water Resource Zone ("WRZ") based on Experian's property projection figures. In response to consultation feedback, we have now calculated the annual property build rate on a WRZ basis. We then applied this so that the final property number for each WRZ matches the Experian forecast for the end point of 2045.

(b) The rebasing of the Experian forecast against our annual return property number at draft plan saw a reduction in new properties of circa 90,000. We have reviewed this and believe a proportion of these should be included and will adjust the annual build rate to reverse this reduction across the 25 year forecast. This recognises that while the forecasted build rates in recent years have not been fully delivered the increase is still required to meet long-term demand for housing in our supply area, although it will be delivered later in the plan than originally forecast. The population forecast will then be calculated using the growth trend from the original Experian forecast and matching the Experian zonal end point in 2045.

4.6. In light of the representations received on housing forecasts, we will compare our revised property forecast (revised as set out above) with detailed information gathered from local authority plans to ensure alignment with local authorities' plans.

4.7. In respect of the London Plan, which is currently at draft stage, we understand that the housing targets will not be finalised until 2020. As a result, we will explore the London Plan property figures in a separate scenario but they will not form part of our baseline assessment.

4.8. We will also provide a fuller explanation – in a technical report appended to the rdWRMP – of the way in which our household and population forecasts were calculated. This will include the rationale for developing a modified trend-based forecast for the plan-based forecasts. In short, the approach taken was informed by advice from Experian who found that plan-based population projections from local authorities were not produced on a consistent basis.

### *Demand forecast uncertainties require further explanation*

4.9. Some consultees queried the fact that our forecast demand is not consistent across all WRZs. The method used to forecast demand is the same across all our water resources zones. The increase in baseline per capita consumption over the planning period is associated with decreasing occupancy rates. Moreover, we have used two models to make our forecasts as accurate as possible. The first model, the micro-component model, produces a breakdown of household consumption by micro-component (WC flushing, shower use, bath use, dish washer use, washing machine use) in the base year and future years. Our Technical Report 2.2 Household Demand Forecast – Micro-component Report provides a detailed explanation of the projections used. The second model is a Multiple Linear Regression model ("MLR"). The MLR model uses historic measured data on consumption from a sample of properties and models future household consumption using explanatory factors such as occupancy, property type, socio-demographics and weather in a dynamic way. Forecast consumption from the MLR model is then used to calibrate the micro-component model results. We have carefully considered this point but do not consider that any change is required.

4.10. The EA has requested greater validation of the MLR approach to determine the household consumption forecast (EA I3.1). Although we recognise that using a MLR model is new for the WRMP 2019, it represents an improvement over the micro-component model used in the WRMP 2014, our previous plan. The MLR model underwent extensive testing and validation, in a way which would have not been possible with the previous model. Our dWRMP Technical Report: Household Demand Forecast – MLR modelling explains the various steps undertaken to test and validate our MLR model.

4.11. The EA has asked for further explanation of the divergence in forecast demand between the WRMP 2014 and the Preferred Plan/Alternative Plan (EA I3.2). We acknowledge this difference in forecast demand, which is primarily driven by the two-year transition period under our Water Savings Programme during which customers have the option whether or not they receive a bill based on metering, changes in population growth forecasts and changes in our understanding of what constitutes a "normal year". We will explain this in our rdWRMP.

4.12. The EA has requested further explanation as to how the occupancy rates were estimated (EA I3.3). We will address this by providing further explanation in a new technical report that will be submitted alongside the rdWRMP.

4.13. The EA has queried the company's reliance on data used for the WRMP 2014 to support its micro-component analysis (see the explanation of this model above). It is not considered that any changes to the data set used are required, although the technical reports will be updated to better explain the company's approach in this regard. We rely on data from the Water Use Survey used for the WRMP 2014 and on industry micro-component data collected from the Market Transformation Programme (reported in 2016). The industry data was further validated against our consultant's (Artesia) silhouette logging data from 2017.

### *Need to consider more ambitious demand management*

4.14. While our work to introduce compulsory metering is generally welcomed, several consultees (including the EA and Ofwat) commented on insufficient ambition in the dWRMP with respect to reduction in leakage and per capita consumption. For example, the EA states that there is insufficient demand management ambition in circumstances where only two WRZs show long-term reductions in total demand, with demand increasing for the remaining WRZs, but at

reduced rates than the baseline position (EA I1.1). Some consultees also consider that we overestimate the effectiveness of our proposals for reducing demand.

4.15. We are currently delivering an ambitious plan of demand and leakage reduction included in our WRMP 2014. This includes our Water Saving Programme (comprising meter installation, customer supply pipe leakage reduction and water efficiency activities) and a further 27 Ml/day through our leakage programme which equates to a 14% leakage reduction, the largest leakage reduction in AMP6 (2015-2020) across the water industry.

4.16. Going forward, we have set a target in our Business Plan for 2020-25 to reduce per capita consumption to 129 l/h/d by 2025 and are aiming to achieve a further reduction to 110 l/h/d by 2040. In the dWRMP consultation customers were asked to comment on the target of 120 l/h/d in the Alternative Plan and 126 l/h/d in the Preferred Plan, in both cases to be achieved by 2045. Consultees supported the more ambitious target of the Alternative Plan and its demand management measures. The rdWRMP will reflect the reductions included in our Business Plan for 2020-25 (i.e. 129 l/h/d by 2025). Compared to our current average consumption of 151.7 l/h/d, this target is ambitious.

4.17. In the baseline demand forecast for our rdWRMP we are predicting an initial reduction in total demand during the remainder of AMP6 (to 2020) and into AMP7 (2020-2025). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area.

4.18. In addition to the points made above, the accuracy of our assumptions about the effectiveness of demand-reduction measures, is supported by data gathered from our Water Saving Programme. This shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is broadly consistent with other metering programmes in the water industry.

4.19. We are carefully considering if there is any scope for reducing demand further over the planning period, while still meeting our duties to supply water to our customers. This will include innovative ways to support and encourage reductions in water consumption such as our partnership with the environmental charity, Hubbub. In addition, we will continue to work proactively with retailers in the competitive non-household market, given that some respondents highlighted the importance of tackling non-household demand.

## SUMMARY OF OUR RESPONSE TO THE EA'S CONCERNS REGARDING THE AMBITION OF OUR DEMAND REDUCTION PROGRAMME

4.20. Our responses to the EA's specific concerns in respect of a lack of ambition for reducing demand are outlined below.

4.21. The EA is concerned that the company's proposals for reducing demand, such as the completion of compulsory metering, rely on previous work and do not go far enough (EA I1.2). This is in circumstances where per capita consumption in a dry year (DYAA) in the dWRMP remains relatively high at 132 l/h/d by 2045 even once proposed interventions are accounted for. To address this, we will be including in the rdWRMP a combination of water efficiency strategies, based on positive communication and engagement with customers, to reduce demand further. We are modelling a wider range of demand management options as well as reviewing some of the assumptions underpinning the options previously explored.

4.22. The EA considers that the savings in demand estimated to be achieved by the demand reduction strategies may be too optimistic, based on a comparison with other data sets (EA I1.3). We will address this by more fully explaining the estimated ambitious demand savings in our revised technical reports on Water Demand Management Framework - Assessment of Demand Options and Headroom to accompany the rdWRMP.

4.23. The EA queried whether demand savings from the installation of the fixed network for smart metering and those from the fast data option have been double-counting (EA I1.4). We have carefully studied this issue and have corrected any incidents of double-counting. The rdWRMP will set out more clearly the assumptions and calculations relied on to find the demand management option yields.

### SUMMARY: KEY FEATURES OF THE RDWRMP - DEMAND

4.24. Following on from our consultation on the Preferred Plan and the Alternative Plan, the rdWRMP will have the following key features in respect of demand:

- for the rdWRMP we are refining our methodology for obtaining housing and population forecasts in light of concerns raised by consultees. It follows that there may be a minor change in our baseline figures. We will also ensure that a technical report accompanying the rdWRMP explains clearly the approach taken and the justification for it;
- we will provide further explanation on how we calculated occupancy rates; and
- in light of the consultation responses received, we are adopting the demanding targets from the Alternative Plan for our rdWRMP (subject to a small adjustment required as explained in section 1.4). This means that we are planning to reduce demand to 129 l/h/d by 2025 and aiming to achieve a further reduction to 110 l/h/d by 2040.

4.25. We also note that, based on preliminary modelling, it seems that the changes to methodology outlined above do not affect our demand forecasting in any significant way.

## 5 Headroom

### RESPONSE TO KEY REPRESENTATIONS ON OUTAGE AND HEADROOM

5.1. The EA points out that although a target headroom assessment has been carried out for the Preferred Plan, it has not for the Alternative Plan (EA R7.4). We recognise this omission and therefore undertaking a full headroom assessment for our revised baseline position and our rdWRMP.

5.2. The EA is of the view that our relatively high target headroom could be more robustly justified through further work (EA I4.1). We are currently undertaking this work, with a particular focus on gaining further certainty of the impact of our intended demand-saving strategies. The results of this work will inform a revised headroom target which will be presented with our rdWRMP.

5.3. The EA considers that we may have been too optimistic in estimating the success of our demand-saving strategies. To protect against this uncertainty, the EA recommends that we set out explicitly how this uncertainty, recognised in the headroom assessment, relates to the assumptions made in the development of our demand management options (EA I1.3). To address this point, we will present a revised headroom technical report which will contain supporting evidence and set out clearly the assumptions behind the ambitious levels of demand management savings contained in our rdWRMP.

### SUMMARY: KEY FEATURES OF THE RDWRMP - HEADROOM

5.4. Following on from our consultation on the Preferred Plan and the Alternative Plan, we will:

- conduct a full headroom assessment for the rdWRMP. A revised technical report will set out details of the work we have done on headroom, and particularly our work on assessing as accurately as possible the effect of our intended demand-reduction measures.

## 6 Leakage

### RESPONSE TO KEY REPRESENTATIONS ON LEAKAGE

6.1. Consultees (including the EA at R11.1) comment that the Preferred Plan offers an 11% leakage reduction between 2020 and 2025 rather than the 15% reduction over the same period recommended by Ofwat. The approach to a 15% leakage reduction in the Alternative Plan attracted significant support and this will therefore be included in the rdWRMP.

6.2. In respect of further leakage reductions, the rdWRMP will go further than the Alternative Plan in that it is aiming to achieve a 50% reduction by 2050 in line with the recommendations of the National Infrastructure Assessment.

6.3. We are already delivering an ambitious leakage reduction programme during AMP6 (2015-2020), reducing leakage by 14% which is the greatest reduction in the water industry for this period. The 15% reduction in the rdWRMP will be in addition to this 14% reduction. We anticipate that our leakage reduction programme will remain at industry leading levels.

6.4. In terms of more specific leakage concerns, the EA raises the points addressed below.

6.5. The EA is questioning the variability of leakage forecasts between WRZs (EA R11.2). To address this, we are including WRZ8 in our Economics of Balancing Supply and Demand ("EBSD") model[5] and we are also adding more leakage options. In addition, we are planning to better spread further leakage reductions after 2025 across our 8 WRZs.

[5] Optimisation model that aims to identify which decisions best achieve one or more criteria given various constraints.

6.6. The EA points out that for WRZs 1, 2 and 4, the new baseline total leakage forecasts are higher than the WRMP 2014 forecasts (EA R11.3). The difference between our latest forecasts and those from 2014 is the incorporation of the new leakage convergence methodology into our base year water balance and change in the prioritisation of different WRZs and DMAs from our AMP6 (2015-2020) leakage strategy. We will ensure that this is fully explained in the leakage strategy report which will accompany the rdWRMP.

6.7. The EA asks for clarity regarding exactly which data sets were available during the leakage assessment, and where analytical techniques were relied on to resolve a lack of data (EA R11.4). We agree that clarity in this regard is important, and we will therefore explain this more fully in the revised Sustainable Economic Level of Leakage (SELL)[6] technical report, clarifying why certain data is not available and justifying the use of industry averages (or similar) as an alternative.

6.8. The EA is concerned that the overall assessment of leakage (the Sustainable Economic Level of Leakage ("SELL")) does not include the trunk main and service reservoirs (EA R11.5). We included this in a technical report which was appended to the Preferred and Alternative Plans. In light of the EA's comments, we will present the SELL figure inclusive of the trunk main and service reservoirs and the issue will be addressed in the main narrative of the rdWRMP.

## SUMMARY: KEY FEATURES OF THE RDWRMP - LEAKAGE

6.9. Following on from our consultation on the Preferred Plan and the Alternative Plan, we have decided that the rdWRMP will have the following key features in respect of leakage:

- 15% leakage reduction between 2020 and 2025 (as per the Alternative Plan) will be included as part of the rdWRMP;
- the rdWRMP also goes beyond the Alternative Plan by aiming to achieve a 50% reduction in leakage by 2050;
- we are adding more leakage options and will spread further leakage reduction after 2025 more evenly across our 8 WRZs. This represents a change to the Preferred Plan and Alternative Plan;
- we will ensure that the leakage strategy report accompanying the rdWRMP explains clearly the reasons for which the leakage forecasts for this plan vary from the WRMP 2014 forecasts;
- we will ensure that the revised SELL technical report accompanying the rdWRMP explains which data sets were available for the leakage assessment and the approach taken where data was not available; and
- we will ensure that the SELL figure presented in the rdWRMP is inclusive of the trunk main and service reservoirs. We will also provide clarity in the rdWRMP narrative.

[6] The level where reducing leakage further is more expensive than balancing supply and demand through an alternative measure.

# 7 Selection of Options and Use of the EBSD Model

## INTRODUCTION

7.1. Consultees (including the EA, Ofwat, Kent County Council, GARD and the Canal & River Trust) observed that, in respect of both the Preferred Plan and the Alternative Plan, the basis on which different options were selected and rejected was not always clear. We accept this. We are improving our decision-making model – the EBSD Model – and we also intend to provide a fuller and clearer explanation of our decision-making processes in the narrative of the rdWRMP and the technical report on this topic. Further details are set out below largely in response to the EA's representations, since these reflect much of what is said by other consultees.

## RESPONSE TO KEY REPRESENTATIONS ON THE SELECTION OF OPTIONS AND USE OF THE EBSD MODEL

7.2. One of the EA's key concerns regarding our decision-making process is that insufficient use has been made of options which could increase resilience (EA R1.2). Linked to this, it is also said that we have not provided sufficient transparency about how measures of environmental sustainability and resilience have informed our multi-criteria analysis tool ("MCA") and that we failed to screen out some environmentally damaging options (EA R7.2). Ofwat makes a similar point regarding lack of clarity: "We expect to see more transparency on how the final programme was selected for both the preferred and alternative plans, to demonstrate that it represents an appropriate package of options".

7.3. We acknowledge that further transparency on the decision-making process is required. We are re-designing our MCA so that the criteria are clear and the various options are scored against them. This will in turn illustrate how the rdWRMP has been designed to minimise environmental impact and promote resilience.

7.4. The EA considers that resilience should be included in the options screening and decision-making process alongside factors such as cost, environmental impact, deliverability, uncertainty on cost and uncertainty on yield. It also observes that positive impacts should be recognised such as reduced dependency on water sources that present known risks (EA R6.2). We are introducing a resilience metric and upgrading the EBSD model to include the ability to optimise on items other than least cost. We will also ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. We will use this updated EBSD to assess the Alternative Plan alongside other options so as to ensure that our selection of options is robust.

7.5. The EA considers that the basis for selecting scenarios and shortlisting portfolios is unclear, with the potential exclusion of more resilient portfolios (EA 7.6 and 7.7). To address this, we are revising our decision-making process as explained above and we are developing a further technical document which will explain clearly our methodology and choices, including selection of shortlists.

7.6. A specific concern was that we have identified options which rely on new abstractions from the River Thames, the viability of which depends on the support of other water companies (EA R4.3; Ofwat made a similar point). We will work further with Thames Water to seek to ensure

that our respective plans are aligned, and will also ensure that our decision-making process includes alternative options to the South East Strategic Reservoir.

7.7. The EA expressed concerns on choices in respect of drought management, questioning the reliance on drought options under the Alternative Plan (while endorsing our planning for a 1 in 200 year drought scenario) (EA R2.1). In view of the endorsement for the 1 in 200 year level of service, we are adopting this aspect of the Alternative Plan for the rdWRMP. We can meet this level of service by 2024 and so will only require drought orders and permits to meet this level in AMP7 (2020-2025). We will explain this fully in the rdWRMP narrative. It should also be noted that drought orders and permits are modelled with the caveat that they are to be selected only as a last resort due to their environmentally damaging nature. Moreover, it is our practice to produce environmental assessment reports for all our drought permit sites which detail the monitoring and mitigation works that we would carry out in the event of implementing a drought permit or order (see EA R2.2). We will also clarify the wording relied on in the rdWRMP to be consistent with our Drought Management Plan (see EA R2.3).

### *Others*

7.8. Various consultees raised the lack of clarity regarding the assessment of alternatives and the selection of options. To address this, we will be producing a technical report which summarises our decision-making process and explains why certain options were chosen over others with reference to the metrics used within our EBSD modelling (such as risk, resilience, deliverability and cost). We will also ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process.

## SUMMARY: KEY FEATURES OF THE RDWRMP – SELECTION OF OPTIONS

7.9. Following on from our consultation on the Preferred Plan and the Alternative Plan, the rdWRMP will be improved as follows in respect of the ESBD model and the selection of options:

- the narrative of the rdWRWP will explain clearly and concisely the decision-making process. This will be accompanied by a technical report on decision-making explaining in more detail the basis for shortlisting and selecting options, as well as the rejection of options. In particular, the way in which the rdWRMP has been influenced by the desire to build resilience while minimising harmful environmental impacts will be set out;

- we will improve the ESBD model so that it includes further metrics (such as resilience). Further, a greater range of alternatives will be explored, including least-cost alternatives, to demonstrate how they compare to the rdWRMP; and

- the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account.

# 8 Resilience

## INTRODUCTION

8.1. The need to increase resilience was highlighted in a number of consultation responses. This includes resilience to drought events, non-drought events, as well as the importance of increasing resilience in general. For example, the Consumer Council for Water commented: "The company must make supply resilience its priority. […] Given the company's recent experience of a prolonged period of dry weather the company must become more resilient to drought." Similarly, the EA said: "We expect the company to be ambitious and look to develop new strategic resources that improve its resilience to drought" (EA Recommendation 2). The EA also highlights that the following are top priorities for Government:

- improving resilience of water companies to droughts and to challenges that put strain on distribution of water such as freeze-thaw and flooding; and
- planning on a twin track approach but clearly investing in new resources to reduce pressure on the environment and improve resilience.

8.2. This reflects other recent communications from Government and regulators. For example, a joint letter dated 9 August 2018 from Defra, the EA, the Drinking Water Inspectorate and Ofwat about the need to increase resilience, said that: "water companies should begin work now on projects and transfers to enhance resilience". Ofwat comments in its Information notice on draft water resources management plans 2019: "Resilience is wider than drought and resilience in the round includes operational, corporate and financial resilience. Resilience has always been important to customers, but there is an increased focus on it through our additional duty with respect to resilience, introduced by the Water Act 2014. There is an emphasis on resilience in the strategic policy statements of both the UK and the Welsh Government and the recent report by the National Infrastructure Commission. Increasing resilience is also identified as a driver for significant new supply-side options by companies.

8.3. Consultees who raised concerns about insufficient resilience include:

- EA;
- Ofwat;
- Natural England;
- National Infrastructure Commission;
- Essex County Council;
- Kent County Council;
- Consumer Council for Water;
- River Chess Association;
- Chilterns Conservation Board;
- National Farmers Union;
- Greater London Authority;
- Blueprint for Water; and
- Angling Trust.

8.4. To address the above concerns, we have decided to go further than the Alternative Plan in the rdWRMP and include a long term strategy to unlock the constraints within our current network. This will enable us to to move water within our Central region by 2040; this strategy is known as “Supply 2040”. It includes a portfolio of new strategic internal transfers to move water more freely from further north and east in our Central region, allowing us to move the forecast surplus in WRZ6 to other WRZs. In the longer term this will create the potential for our supply area to act as a transfer hub for South East England, providing the additional capacity in our infrastructure for future water trading as well as long-term regional supply and environmental resilience.

8.5. Our dWRMP concluded that our need to meet long-term drought resilience beyond 2040 would be most effectively delivered through the creation of a new regional reservoir in the Upper Thames catchment in partnership with Thames Water. The South East Strategic Reservoir was included in the Alternative Plan with a delivery date of 2039. Our Business Plan for 2020-25 includes preparatory planning costs in this respect. We are in the process of carefully considering the need for and suitability of this option, as well as the suitability of other strategic options and appropriate delivery dates.

8.6. We note that many consultees are highly supportive of a new regional reservoir. For example, the Greater London Authority observes that the Reservoir is “a crucial part of providing security and resilience of supply for the people and businesses of London, contributing directly to meeting the Mayor’s Good Growth Policy”. Others comment on the Reservoir’s potential to help reduce groundwater abstractions further in the future. However, we also note that GARD is critical of the proposal and request further scrutiny of the need for the Reservoir.

8.7. In terms of more specific issues relating to resilience, we note that the EA stresses the importance of early investment in key resilience-enhancing options and comments that the Preferred Plan and the Alternative Plan are not providing for this to a sufficient extent (EA R6.1). The rdWRMP will provide a new treatment works at SUND (as in the Alternative Plan) for 2024. This will improve supply to customers throughout our Central region, which will in turn assist us in improving our drought resilience and making sustainability reductions.

8.8. The EA also asks that the effect of non-drought hazards (such as freeze-thaw effects) is given more consideration (EA R6.3), as does Ofwat. This is an important aspect of resilience and, as such, our Business Plan for 2020-25 provides for various additional resilience schemes to address this such as twinning existing assets, increasing pumping capacity (to alleviate constraints) and opening network connectivity to allow movement of water from trapped areas of need. These measures are in addition to our emergency planning.

8.9. Several consultees consider that the Preferred Plan does not offer enough resilience to a drought event. As explained above, we have therefore chosen to proceed with the approach of the Alternative Plan in this regard which provides for a level of service of a 1 in 200 year drought event with no emergency drought permits/orders after 2024. However, given the multiple representations received regarding the importance of resilience, the rdWRMP will also increase drought resilience beyond a 1 in 200-year drought event, at a future point after 2024.

### SUMMARY: KEY FEATURES OF THE RDWRMP - RESILIENCE

8.10. Following on from our consultation on the Preferred Plan and the Alternative Plan, we have decided that the rdWRMP will have the following key features in respect of resilience:

- Drought resilience to a 1 in 200-year event with no use of emergency drought permits / orders after 2024 (as per the Alternative Plan). We will also increase drought resilience beyond 1 in 200 year at a future point after 2024 (this represents a change to the Alternative Plan);

- Supply 2040 – a long-term strategic plan to enable us to move water freely around our Central region (this presents a change to the Alternative Plan); and

- Subject to the results of further assessment of need for and its suitability, alongside assessment of the suitability of other strategic options, development of the Reservoir, working with Thames Water (as per the Preferred Plan and the Alternative Plan).

## 9 Regional Planning

### RESPONSE TO KEY REPRESENTATIONS ON REGIONAL WATER RESOURCE PLANNING

9.1. We note that many responses commend our pro-active approach to working collaboratively with neighbouring companies and the regional groups known as Water Resources South East ("WRSE") and Water Resources East ("WRE") to ensure a joined-up approach to planning. We are pleased that our actions in this regard have been recognised, especially since the joint letter (from Defra, the EA, the Drinking Water Inspectorate and Ofwat) dated 9 August 2018, which stressed the need for regional planning as a means of increasing resilience. We believe the continued efforts that we have made and are planning to take will ensure that we are taking a joined-up approach to long term water resource planning.

9.2. However, we accept that there is more work to be done. In particular, the EA is concerned (as are others such as Ofwat) that the Preferred Plan and Alternative Plan do not make sufficient provision for cohesive, regional water planning (EA Recommendation 4). Specifically, there is a concern that the dWRMP does not align with the strategies of WRSE and WRE because there is no reference to Affinity Water importing water from either Anglian Water or Thames Water (EA R4.1).

9.3. In response to this, we would like to reiterate the following:

- the dWRMP aligned well with WRSE Phase 3 as was outlined in the narrative and our rdWRMP will set out a number of steps to ensure alignment with WRSE and WRE in the future. Our rdWRMP will be informed by the next phase of WRSE modelling (Phase 4).

- we confirm our commitment to continue to participate fully in WRSE and WRE. We will continue working with these groups and our neighbouring water companies to ensure that our plans are aligned;

- as part of this process we have continued to share our modelling results on the timing and the need for transfers which should allow, as per Ofwat's recommendation, the rdWRMP to improve alignment with the plans of neighbouring companies where discrepancies had occurred; and

- we have continued to lead with input at Senior Leadership Team ("SLT") and Programme Management Board ("PMB") level in WRSE, where we have been instrumental in encouraging WRSE to continue its work between now and 2021/22 on a regional plan.

9.4. More specifically, we are planning for:

- the inclusion of a new element into the rdWRMP which is our "Supply 2040" scheme. As explained above, this proposal amounts to long-term strategic initiative to enable us to move water freely around our Central region and to facilitate future water trading within the region to the benefit of all relevant water companies;

- subject to the results of further assessment of the need for and suitability of the Reservoir, alongside assessment of the suitability of other strategic options, development of the South East Strategic Reservoir, working with Thames Water (as per the Preferred Plan and the Alternative Plan);

- delivery of SUND by 2024 – this is a new treatment works scheme which will remove existing treatment constraints at our SUND works. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central Region);

- the sharing of methodologies with other companies in the WRSE to promote transparency of cost of water transfers (we believe this is essential for water transfer arrangements); and

- market opportunities for third parties to provide water to us. We have published our trading and procurement code and have submitted to Ofwat our bid assessment framework as part of our Business Plan for 2020-25, both of which should also help to support future opportunities for market and multi-sector participation in water trading and sharing. Our bid assessment framework will provide third parties with confidence that options they propose will be assessed on a level playing field with in-house options.

9.5. The EA has also identified what it considers are discrepancies between our plan, which presents a reverse trade with Anglian Water by reducing the amount of water we need from an existing import, and Anglian Water's plan. The transfer from Anglian Water's supply area is a transfer from our shared ANGL resource to which we have a statutory entitlement. We are currently unable to utilise our full statutory entitlement because of constraints resulting from different chemical qualities of the water. We are intending to remove these constraints by construction of new treatment works at SUND and we explored with Anglian Water a proposal to allow them to use some of our statutory entitlement on a short-term basis in the interim. We have since held various meetings with Anglian Water and will ensure that the rdWRMP explains our planning assumptions.

## SUMMARY: KEY FEATURES OF THE RDWRMP – REGIONAL PLANNING

9.6. Following on from our consultation on the Preferred Plan and the Alternative Plan, we are improving our rdWRMP plan in the following areas through our regional planning work:

- we are continuing our important work at SLT and PMB level to progress WRSE between now and 2021/22 to develop a regional plan ahead of WRMP 2024. We are also continuing our work with WRE, where we are discussing opportunities to improve alignment with WRE going forward;

- we are continuing our engagement with WRSE and neighbouring water companies, including at a technical level, through the sharing of data and modelling results (for WRSE Phase 4). The rdWRMP will be updated to include the most up-to-date WRSE Phase 4 outputs;

- in WRSE we will explore methodologies that can help to enhance and promote transparency of cost of water transfers (this is an essential for pre-requisite for removing barriers to water trading at regional scale);

- we will include our “Supply 2040” scheme in the rdWRMP. As well as allowing us to move water more freely around our supply area, it will also facilitate the transfer of water supplies from outside of our supply area and should therefore allow for further water trading between companies in the region;

- subject to the results of further assessment of the need for and suitability of the Reservoir, and assessment of the suitability of other strategic options, we will include development of the South East Strategic Reservoir, working with Thames Water (as per the Preferred Plan and the Alternative Plan); and

- we are planning to deliver our water treatment works scheme at SUND by 2024.

# 10 Strategic Environmental Assessment ("SEA") and Habitats Regulations Assessment ("HRA")

## RESPONSE TO KEY REPRESENTATIONS ON SEA AND HRA

### *Environment Agency*

10.1. The EA raised various issues in respect of the SEA and HRA work done to date (EA Recommendation 9). The primary point which the EA makes is although the Preferred Plan was subject to a full SEA, this is not the case for the Alternative Plan. Given that the Alternative Plan has now been superseded, we plan to address this issue by undertaking a full SEA on the rdWRMP.

10.2. The EA also notes that the SEA previously provided does not include sufficient information on cumulative impacts (EA R9.2). We will therefore make sure that the revised environmental report which accompanies the SEA for the rdWRMP contains an assessment of the relevant cumulative effects. We are also now able to include the WRSE cumulative effects assessment in our work.

10.3. In addition, the EA comments on the lack of supporting information and detail in respect of monitoring measures (EA R9.3). To address this, we held a meeting with Natural England on 11 September 2018 at which mitigation and monitoring were discussed at great length. We agreed that the specific nature of monitoring would be something which is agreed at the option design stage rather than at SEA and rdWRMP level. However, the new SEA will suggest the most suitable mitigation and monitoring where possible.

### *Natural England*

10.4. Given Natural England's ("NE") key role and expertise in SEA and HRA, our response deals with their primary concerns separately, below.

10.5. NE's main concern in respect of the HRA is insufficient information to exclude a likely significant effect on protected sites at the screening stage. Likewise, at the appropriate assessment stage there is not enough evidence to be certain that some options will have no adverse effect on integrity, and there is a lack of clarity about how potential impacts will be mitigated.

10.6. As set out above, we subsequently discussed the best way forward with NE at the meeting on 11 September 2018. At this meeting, we clarified that we will update the HRA with increased specificity at subsequent stages of the procedure when more detail is known. To avoid confusion, we will only discuss options that are actually selected for the rdWRMP.

10.7. More generally, the HRA (and accompanying evidence base) will be updated to reflect recent changes in the law, notably the entry into force of The Conservation of Habitats and Species Regulations 2017 and the implications of the judgment of the Court of Justice of the European Union in Case C-323/17 *People Over Wind v Coillte Teoranta* (such that mitigation measures may not be taken into account at the screening stage).

10.8. NE also requires provision for alternatives if by the time of the rdWRMP we are unable to conclude definitively that our preferred options would not have an adverse effect. We have

therefore revised our modelling process to allow for multiple "what if" model runs. This will allow us to use the model to determine which alternative schemes are available to replace selected schemes if it becomes apparent that the latter are no longer deliverable.

10.9. As for SEA, the main concern here is the lack of detail which prevents the environmental impacts of schemes from being understood, as well as the potential to mitigate these impacts. Where the existence of effective mitigation is uncertain, alternative schemes are required.

10.10. As explained above, following the meeting with NE of 11 September 2018 we agreed that there is a limit of the specificity that can be provided at this stage of plan-making (given that many options are still at a high- level pre-design stage). Nonetheless, we accept NE needs sufficient detail to be more confident about the possible effects on protected sites and that acknowledgement is needed where mitigation is required. Both parties agree that this acknowledgement can be addressed within the rdWRMP environmental report, and that the detail will be provided in the option design stages upon delivery. Further, our revised modelling approach will allow us to set out alternative options which can be delivered should a preferred option not be deliverable.

### SUMMARY: KEY FEATURES OF THE RDWRMP – SEA AND HRA

10.11. Following on from our consultation on the Preferred Plan and the Alternative Plan, we have decided to take the following steps in respect of SEA and HRA:

- we will produce a full SEA for the rdWRMP. In so far as possible, this will include information about suitable mitigation and monitoring;
- we will produce a fully updated HRA for the rdWRMP;
- we have adapted our model so that alternative options can be identified in the event that our chosen options prove inappropriate; and
- we will be producing a technical report which explains clearly the alternatives assessed and the basis on which we selected our preferred options.

## 11 Approach to Consultation

### RESPONSE TO KEY REPRESENTATIONS REGARDING OUR APPROACH TO CONSULTATION AND FURTHER CONSULTATION PLANNED

11.1. The EA raised concerns about the way in which the previous consultation was designed (EA R1.1). In particular, it is said there was a risk of directing support towards our Preferred Plan over the Alternative Plan. This was in circumstances where the Preferred Plan did not, in the EA's view, address environmental concerns adequately.

11.2. Given the EA's concerns about the Preferred Plan it recommends that we produce a revised plan that meets the regulatory requirements for the protection of the environment and that we consult on this. This suggested approach is also supported by other stakeholders such as Ofwat and the Consumer Council for Water.

11.3. On considering the responses to the consultation, it became clear to us that the Preferred Plan was not appropriate and that we should instead progress the Alternative Plan. As explained above, the Alternative Plan had been developed to meet all regulatory requirements (in light of earlier feedback from the EA) and the approach taken received strong endorsement in the consultation (unlike the Preferred Plan). We have therefore decided to base the rdWRMP on the Alternative Plan, making any further amendments which, following further consultation, are appropriate.

11.4. We are therefore in the process of producing the rdWRMP and intend to present it to customers and stakeholders for further consultation in Spring 2019. As discussed with our CCG, this is not a statutory consultation but a further consultation which focuses on the aspects of the dWRMP which have changed between the Alternative Plan (which was endorsed by customers through the customer consultation process) and the rdWRMP. We will, however, also consider any comments made about any aspects of the rdWRMP.

11.5. In terms of more specific issues that the EA and other consultees raise, there was a concern that customers have been insufficiently involved in the decision-making process which led to the development of the Preferred Plan and the Alternative Plan (EA R5.1). We have noted this criticism. However, we did undertake extensive engagement, including an online survey with 1,000 customers, ran eight customer focus groups with 66 customers, held eight stakeholder forums and received a number of representations from regulators and stakeholders. We also undertook a range of consultation activity for our Business Plan for 2020-25.

11.6. We will liaise with our CCG to ensure that our further consultation is conducted in a manner which meets with its concerns. For example, we are considering conducting deliberative focus groups to ensure understanding and engagement. In addition, we are considering how customers are presented with the bill implications for particular options (information which we provided as part of our dWRMP consultation).

11.7. We are also taking steps to make our engagement events more effective, for example by shortening them and making them more focused on stakeholder and customer specific needs, and propose engaging in depth with stakeholders across our communities to provide the opportunity for discussion on the rdWRMP. The format for these sessions is to be decided – they could take the form of drop-in sessions, breakfast meetings, local authority Member briefings, and one to one meetings with key staff in partner organisations. It is likely we will use a combination of these methods to allow stakeholders to discuss issues and concerns in detail with Affinity Water, including greater participation from retailers. The results of these engagement activities will be published in the rdWRMP Technical Report: Engaging with Customers, Communities and Stakeholders in Spring 2019.

11.8. The EA notes that customer surveys demonstrate that groundwater abstraction is not preferred by customers and that the Preferred Plan failed to recognise this fully (EA R5.2). We have addressed this through adopting the more ambitious sustainability reductions from the Alternative Plan as well as – in accordance with advice from the EA – removing various groundwater sources from the dWRMP.

11.9. The EA and Ofwat also consider that customer preferences should have been included as part of our criteria for shortlisting options (EA R5.3). In light of this we will also ensure that the

evidence that we have collected on customer preferences is referenced and reflected in our decision-making process.

11.10. Ofwat has raised a concern about the lack of support from customers for our proposal to reduce the frequency of drought orders. We carried out specific customer research in relation to resilience to inform our Business Plan for 2020-25[7]. This demonstrated 78% of customers support Affinity Water investing now to ensure sufficient water in the future. It also showed that 87% of customers think "making sure there is enough water in the future" is important and 84% of customers think "maintaining and updating the infrastructure" is important. Moreover, the Mayor of London, clearly a major stakeholder, is supportive of the proposal. We also understand the EA to be supportive.

## SUMMARY: KEY FEATURES OF THE RDWRMP - CONSULTATION

11.11. Following on from our consultation on the Preferred Plan and the Alternative Plan, we have decided to:

- produce a rdWRMP based on the Alternative Plan (which was endorsed by customers through the customer consultation process). We will present the rdWRMP to customers and stakeholders for further consultation in Spring 2019 so that they can comment on our proposed changes.

[7] Blue Marble, August 2018, Affinity Water Resilience Investment

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Affinity Water

Your local supply, on tap

# Statement of Response

## Appendix One

## Response to representations

# Appendix One: Table of Contents



Appendix One sets out the representations we have received from stakeholders and customers to our draft Water Resources Management Plan (dWRMP) public consultation. Representations are listed in alphabetical order.

We have provided a response to each of these representations individually, and explained how we have made changes to the dWRMP as a result of the representations made. Where we have not made changes, we have explained why not.

The format to each representation made follows the same structure:

- Representation made
- Our response (in bold)
- Summary of any change to our revised dWRMP

The exception to this is the Environment Agency representation (reference number 9). Here we have kept the referencing, format and structure used by the Environment Agency in their representation for ease of cross referencing.

| 1. The Angling Trust | | |
|---|---|---|
| 1.1 | Representation | We have carefully considered Affinity Water's draft Water Resources Management Plan and attended the Affinity Water - Misbourne Community Stakeholder Forum on the 2nd May 2018. The Angling Trust has concluded that as far as our globally rare chalk streams are concerned neither their Preferred Plan nor their Alternative Plan will deliver what is needed to adequately protect the environment. |
| | **Our Response** | **We are developing a revised dWRMP, which builds on our Alternative Plan.** |
| | Summary of any change to our revised dWRMP | See Our Response above, |
| | | |
| 1.2 | Representation | If we are to have any chance of seeing the 'Clean and Plentiful Water' and 'Thriving Plants and Wildlife' envisioned by A Green Future, we believe that Affinity Water must take three bold steps:<br><br>1. End the historical over-reliance on groundwater<br><br>The rivers of the Chilterns are fed by the chalk aquifer and it is deeply troubling that in 2017, a year during which no drought was declared despite significantly low rainfall for many months, large sections of them were completely dry. Despite a relatively wet 2017/8 winter this situation widely persists. Still now, many miles of dry river bed and greatly diminished flows persist, resulting in loss of habitat for invertebrates, fish, birds and mammals, and an accumulation of smothering silt. This situation would be even more severe if a 'true' drought was to occur.<br><br>Affinity's plans suggest that for the next five years, and for the foreseeable future, abstraction of groundwater will remain the foundation of their water supply. There is no extra water available for use - in fact less over the next 5 years - until 2039, at the earliest, when Thames Water's proposed Abingdon Reservoir might come online.<br><br>And should a drought be declared? It will be a disaster for the environment, as the solution to the problem is the issue of drought permits that will allow even more groundwater to be taken from the chalk. Nothing is being done to address this and increase the water industry's resilience to increasingly fluctuating weather patterns.<br><br>Affinity Water supplies eight separate regions and the demand varies significantly. At the Misbourne Community Stakeholder Forum on 2nd May 2018, figures were presented that indicated a wide variance of per capita consumption across these regions, ranging from 169 litres per day per person in the Pinn Region to 127 litres per day per person in the South East Region (figure still to be confirmed by Affinity). It was noted at the forum that the South East Region has greater investment autonomy and has been a focus of Affinity's efforts around leakage reduction, customer metering and improving infrastructure. In addition, we were told the South East Region customers pays a higher price for their water. We strongly believe that all these factors contribute strongly to the much lower levels of water consumption in this region and these should be rolled out more widely into Affinity's other water regions.<br><br>Affinity have some of the lowest water bills in the country, ironically in very affluent areas where many customers could afford to pay more. The water is cheap because it comes from the aquifer, taking water that is destined for chalk rivers. It has been pre-filtered by the chalk so requires little additional processing, and in many cases, it is abstracted at the head of catchments and can therefore be delivered to customers cheaply using gravity. This means that the current Ofwat model dictates that the price charged to customers reflects the cost, hence low prices. This should be reviewed and areas that can and are willing to pay more should do so, with additional resources invested in protecting the environment and significantly reducing the reliance on groundwater.<br><br>We also believe that any consumption reductions should absolutely reflect directly in a reduction in abstraction, and not a reduction in the more costly imported water transferred from other water company regions.<br><br>We consider that the magnitude of the challenge in the South East requires a co-ordinated regional approach to water including the investment in significant infrastructure projects and we insist that Affinity reduce their reliance on groundwater in an urgent and determined |

| 1. The Angling Trust | | |
|---|---|---|
| | | fashion. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**Our revised dWRMP will include a further leakage reduction of 15% in AMP7 (2020-25) and aim to achieve a 50% leakage reduction by 2050.**<br><br>**Our revised dWRMP will include a wider suite of demand management options to achieve more challenging levels of per capita consumption (PCC) aiming towards 110 l/h/d by 2040. We are committed to reducing PCC and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 compared with our current average consumption of 151.7 l/h/d which is ambitious.**<br><br>**Our previous work looking at the sensitivity of customer demand to price, for example rising block tariffs (whereby water increased in price as customers used more of it) and seasonal tariff trials, suggests customer demand is generally unresponsive to price. We will keep the role of tariff structures in assisting with demand management under review in the context of our overall approach to demand management.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**We agree that a co-ordinated regional approach to water resource planning is important and we have taken a leading role in the WRSE project, supported WRE and participated on the steering group of the Water UK Long Term Water Resources Plan, working with the Environment Agency and other water companies to assess strategic water supply opportunities across the regions.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>There will be no new groundwater from chalk aquifers in our Central region. |

| 1. The Angling Trust | | |
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| | | |
| 1.3 | Representation | If we are to have any chance of seeing the 'Clean and Plentiful Water' and 'Thriving Plants and Wildlife' envisioned by A Green Future, we believe that Affinity Water must take three bold steps:<br><br>2. Keep Affinity on target and hold them to account<br><br>Affinity has made some bold plans to balance supply and demand which include ambitious targets. In the South East region, where population and housing are rising steeply, Affinity is projecting a reduction in demand for water over the next WRMP period.<br><br>The company believes that some tried techniques - consumer education, an ambitions leak reduction programme and the increased roll out of water meters - will deliver the significant savings required. It is difficult to have confidence in these assertions, particularly when Affinity's most recent projections for consumer demand in 2016/17 were wide of the mark - consumer consumption rising five litres per head per day when forecast to fall.<br><br>Should Affinity's optimistic forecast prove accurate, our chalk streams will still remain under immense pressure. Should they prove wrong, then groundwater will be called upon to make up the difference and our rivers and environment will pay dearly as there is little supply tolerance or resilience in the plan.<br><br>We call upon government and regulators to scrutinise Affinity's projections in detail and rigorously police whatever forecasts are agreed. Swift action should be taken and suitable penalties applied should leak reduction targets be missed or consumer savings not materialise. |
| | **Our Response** | **We recognise we missed our per capita consumption (PCC) target in 2016/17 primarily due to a slower rate of moving customers to metered charges as part of the Water Savings Programme. However, we achieved our PCC target in 2017/18 and are confident that we are back on track with our demand management savings and delivering our AMP6 plan (2015-2020).**<br><br>**We agree that our dWRMP includes an ambitious level of demand management. Our Business Plan includes performance commitments to reduce our PCC to 129 l/h/d and our leakage by 15% between 2020 and 2025. These performance commitments are underpinned by an outcome delivery incentive providing for financial consequences should we fail to achieve our targets.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
| | | |
| 1.4 | Representation | If we are to have any chance of seeing the 'Clean and Plentiful Water' and 'Thriving Plants and Wildlife' envisioned by A Green Future, we believe that Affinity Water must take three bold steps:<br><br>3. Ensure Thames Water's Abingdon Reservoir is built<br><br>Looking further ahead, we whole-heartedly support Affinity's link to the Upper Thames Regional Development project and the additional water that it will supply to the area. Having the ability to capture water when it is abundant and use it to reduce pressure on groundwater sources during times of water scarcity is essential to the health of our chalk streams and to increasing our resilience to drought events. |

| 1. The Angling Trust | | |
|---|---|---|
| | | We realise that the success of this pivotal project rests mostly outside of Affinity's control and we are concerned that so much of Affinity's future planning hinges on this single project being commissioned and delivered on time. We also believe that the Abingdon Reservoir is essential but see the current timing as too late to be of any benefit for what is already an environmental disaster. Work must start as early as possible on this vital infrastructure project for us to be able to reduce our dependence on groundwater and deliver the environment improvements facilitated by Ofwat's Abstraction Incentive Mechanism (AIM). Without alternative supply options, the AIM is all but useless.<br><br>The Angling Trust would urge Affinity Water to apply as much pressure as possible to guarantee that the Abingdon Reservoir is built, with work starting immediately. |
| | **Our Response** | **Our draft WRMP included plans to invest in a new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Subject to the results of further assessment of its suitability, alongside assessment of the suitability of other strategic options, development of the Reservoir, working with Thames Water. |
| | | |
| 1.5 | Representation | Conclusions<br><br>The Angling Trust believes that it is time for the south east's water companies to take bold steps to more effectively protect our precious aquatic environments for future generations (following the commitments in the government's 25-year Environment Plan) and increase the human population's resilience to drought events in the future. It is essential that Affinity's WRMP reduces the existing over-reliance on groundwater abstractions, ensures ambitious targets to reduce demand are achieved, and safeguards the construction of Abingdon Reservoir in the imminent future. Only then could we have any confidence that "ours can become the first generation to leave the environment in a better state than we found it". |
| | **Our Response** | **Addressed in the responses above.** |
| | Summary of any change to our revised dWRMP | See responses above. |
| | | |
| 1.6 | Representation | Do you yet have a list of forthcoming stakeholder forums and could I please register my interest in attending one (or more) of these? I will be representing the Angling Trust. |
| | **Our Response** | **Dates sent.** |
| | Summary of any change to our revised dWRMP | N/A |

## 2. Buckinghamshire County Council

| | | |
|---|---|---|
| 2.1 | Representation | We are pleased to see the joint working approach included in your plan as an option. It would be good to see this happen going forward. |
| | **Our Response** | **We will continue to prioritise joint working going forward with a wide range of local and national stakeholders and other water companies including through the Water Resources South East and Water Resources East regional groups.** |
| | Summary of any change to our revised dWRMP | N/A. |
| | | |
| 2.2 | Representation | Leakage is a big issue for councillors and residents of Buckinghamshire, and you address many aspects of this and what you are planning to do around this. The target of 15% reduction in leakage as opposed to 11% would be our preferred target. The more ambitious target will result in increased environmental benefits and this is vital for the chalk streams in the Affinity Water area. |
| | **Our Response** | **Our revised dWRMP will include a leakage reduction of 15% in AMP7, which was supported during the consultation, and aim to achieve a 50% reduction in leakage by 2050 as recommended in the National Infrastructure Commission report: *Planning for a drier future*.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
| | | |
| 2.3 | Representation | The demands of new infrastructure projects such as Heathrow, HS2, and Western Rail Link to Heathrow are not specifically mentioned. It would be useful to understand if any analysis has been done on this and to have it presented in the WRMP. |
| | **Our Response** | **Analysis has taken place and is included in the dWRMP (section 9.5.2, page 178). It is recognised that the amount of detail included in the dWRMP was limited and, where possible, further detail will be included in our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Further detail of how the demands of new infrastructure projects such as Heathrow, HS2 and Western Rail Link to Heathrow will be accommodated in our revised dWRMP will be provided where possible. |
| | | |
| 2.4 | Representation | We are pleased to see that your compulsory metering program will complete in 2025. |
| | **Our Response** | **Thank you for your feedback.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 2.5 | Representation | It is good to see ecosystems services and natural capital in your plan as it is something that Buckinghamshire County Council will also be increasing work on in the coming years. |
| | **Our Response** | **Thank you for your feedback.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |

| 2. Buckinghamshire County Council | | |
|---|---|---|
| 2.6 | Representation | We are unsure of the evidence behind the following statement; “an additional 17 Ml/d of available supply by optimising existing groundwater abstractions and licences with minimal environmental effects” how can you be certain that these abstraction increases will only have minimal environmental effects? |
| | **Our Response** | **Where a new abstraction licence is required this would be subject to the standard abstraction licensing process including undertaking an environmental impact assessment. The Environment Agency (EA) would not issue a new licence where an impact was identified. All new licences are also time-limited and therefore have an expiry date. We have an extensive environmental monitoring network of groundwater levels, river flows and lake levels which will be used to help with any assessment.**<br><br>**We will continue to work with the EA to identify groundwater options for inclusion in our revised dWRMP. These will not include new groundwater from chalk aquifers in our Central region.** |
| | Summary of any change to our revised dWRMP | There will be no new groundwater from chalk aquifers in our Central region. |
| | | |
| 2.7 | Representation | Section 2.13.5 - River Basin Management Plans is limited in its ambition on Water Framework Directive (WFD) objectives. It would be good to see a positive ambition to improve the quality of waterbodies impacted by abstractions rather than ensure that the achievement of “good status is not inhibited by abstraction”. |
| | **Our Response** | **We recognise the need to improve the Water Framework Directive (WFD) status of water bodies in our area in order to achieve Good Ecological Status and meet the WFD objectives. To achieve this, alongside our Sustainability Reduction Programme we have adopted an ambitious programme of ongoing river restoration works in AMP6 (2015-20), working in partnership with the Environment Agency and local stakeholders. Our river restoration programme has already started delivering the desired outputs and making a positive impact on the catchments where work has been undertaken. For this reason, we have included a challenging programme of further river restoration work for AMP7 (2020-25) to ensure that our river catchments get the maximum combined benefit from abstraction reductions and morphological works.** |
| | Summary of any change to our revised dWRMP | For sustainability reductions, the revised dWRMP will (essentially in accordance with the Alternative Plan but updated to reflect the numbers in the WINEP3 table rather than the previous WINEP2 table) provides for sustainability reductions of 36.31 Ml/d by 22 December 2024.<br><br>Morphological actions and costings will be made with reference to the AMP7 Business Plan and with input from the EA to determine the exact scope of what is required (this represents a change to the Alternative Plan). |
| | | |
| 2.8 | Representation | It is good to see the extensive work you have done to evaluate and mitigate the predicted impacts that climate change will have on your water resources helping to safeguard access to water into the future. |
| | **Our Response** | **Thank you for your feedback.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 2.9 | 3 Representation | It is disappointing to see very limited adaptation due to climate change with regards to flooding; will you be doing more work in this area? |

## 2. Buckinghamshire County Council

| | | |
|---|---|---|
| | **Our Response** | **We have published our Climate Change Adaptation report on our website which covers how we are working towards addressing this challenge. We will continue to work with Local Resilience Forums on matters including flooding and support the Environment Agency and Local Authorities where appropriate.** |
| | Summary of any change to our revised dWRMP | N/A |
| 2.10 | Representation | The plan mentions a link to the Flood Risk Management Plans with a Strategic Environmental Assessment being carried out which looks at the 14 objectives against which options are screened – one of these is flood risk although this document does not seem to be available as part of this consultation. |
| | **Our Response** | **Flood Risk Management Plans are prepared by the Environment Agency and are not part of our water resources management plan.**<br><br>**The Strategic Environmental Assessment of our revised dWRMP will include assessment of impact on flood risk.** |
| | Summary of any change to our revised dWRMP | N/A |

| 3. Canal & River Trust | | |
|---|---|---|
| 3.1 | Representation | In the opinion of the Trust Affinity Water have produced a comprehensive draft plan. |
| | **Our Response** | **We would like to thank the Trust for their support and input in the development of our plans and the joint work we have undertaken together to date, and look forward to continued collaboration in the future.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 3.2 | Representation | The Trust require reassurance that the proposed canal schemes have been assessed fairly and consistently with other supply options. |
| | **Our Response** | **Since the draft plan submission we have met with the Canal & River Trust (CRT) and provided further reassurance regarding the assessment of the options and we will continue to provide as much information as we can to reassure the CRT that the schemes are being treated fairly and consistently with other supply options.** |
| | Summary of any change to our revised dWRMP | We are including scheme specific updates in our options work as agreed. |
| | | |
| 3.3 | Representation | The Trust would like to see the inclusion of quantified social and environmental cost and benefits for all feasible schemes |
| | **Our Response** | **The CRT can locate this data in our Strategic Environmental Assessment report, which is available on our website. The report will be updated as part of our further consultation submission.** |
| | Summary of any change to our revised dWRMP | The revised dWRMP will be presented for further consultation in Spring 2019. |
| | | |
| 3.4 | Representation | The Trust would like to see the provision of greater cost transparency on the assessment of canal schemes and the assumptions made, ensuring the optimum supply solutions are developed for Affinity Water customers. |
| | **Our Response** | **Through our work with the CRT since the draft plan submission we have addressed a number of cost issues relating to a number of the CRT schemes, including the Grand Union Canal transfer and BREN options. Our understanding is that the additional work we have undertaken is appropriate and to the satisfaction of the CRT at this stage.** |
| | Summary of any change to our revised dWRMP | The changes to the relevant options will be reflected in the option dossiers and modelling. |
| | | |
| 3.5 | Representation | The Trust would like to see provision of suitable justification on why two feasible canal schemes (AFF-RTR-WRZ1-1066 (MINW) & AFF-NGW-WRZ1-1050(COWR)) are not included in the preferred plan for WRZ1. |

| 3. Canal & River Trust | | |
|---|---|---|
| | **Our Response** | **Where deficits occurred in Water Resource Zone 1 (WRZ1), the solution was provided by a combination of demand management options and transfers with additional treatment and storage (which were much later in the planning horizon). It is possible that WRZ1 may have benefited from a new treatment works at SUND which would allow us to utilise our full statutory entitlement which is currently constrained, which in this scenario was by 2030.**<br><br>**The package of solutions for the modelled deficits in WRZ1 were considered appropriate for that WRZ at the time of the publication of our dWRMP. The preferred plan is not a least cost plan, but includes other considerations such as risk, uncertainty and scheme deliverability 'in the round', further transparency on that aspect of the work will be provided in the revised plan submission.**<br><br>**We are updating the information about this option and it will be re-considered using this updated information in development of our revised dWRMP.**<br><br>**All chalk groundwater options in the Central region have now been screened out due to significant concerns over their inclusion in the draft plan. This will impact the COWR option, as discussed with CRT.** |
| | Summary of any change to our revised dWRMP | The inclusion of any CRT options in the revised plan submission will be dependent on the EBSD modelling and decision making. The removal of COWR will be actioned. |
| | | |
| 3.6 | Representation | Why is there a significant increase in the assessed schemes Capex and Opex compared to those originally proposed by the Trust? |
| | **Our Response** | **The reason for this is because we are required to produce costs and scope for schemes at a consistent level for all feasible options, for fairness and transparency. In relation to the canal options, this requires additional costs for taking this water from source to entry into the distribution network. The CRT costs covered the conveyance of canal water to a point whereby it could be abstracted. We then added costs to this option to enable the abstraction of the proposed volumes, treatment and pipework required. This explains the increase when compared to the originally proposed costs and is in line with our other options which have been costed to include all aspects required for the supply of potable water.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 3.7 | Representation | Why are the two feasible schemes in WRZ1 not included in the Affinity Water preferred plan, when seemingly higher cost options are being selected? |
| | **Our Response** | **See response to your representation 3.5** |
| | Summary of any change to our revised dWRMP | The inclusion of any CRT options in the revised plan submission will be dependent on the Economics of Balancing Supply and Demand modelling and decision making. The removal of COWR will be actioned. |
| | | |
| 3.8 | Representation | Why are the two Trust schemes in the preferred plan not scheduled earlier than 2052 and 2070? |

| 3. Canal & River Trust | | |
|---|---|---|
| | **Our Response** | **The BREN scheme (selected in 2052 in the Preferred Plan) was actually selected earlier than other alternative strategic supply solutions for long term deficits in Water Resource Zone 4. However, in this planning scenario the planned sustainability reductions are lower than the Alternative Plan, as were the demand management targets, which means that the supply schemes were not required until later in the planning scenario.**<br><br>**In the Alternative Plan, which had greater sustainability reductions and more challenging demand management targets, the strategic infrastructure was triggered earlier (at 2039). This was to meet higher deficits. The BREN scheme was retained but actually not required until later in that scenario.** |
| | Summary of any change to our revised dWRMP | Any potential changes in the selection or timing of these options in the future will be dependent on the **Economics of Balancing Supply and Demand** modelling and decision making for the revised plan submission. |
| | | |
| 3.9 | Representation | The Trust have just embarked on a 3 year programme to better define the value and impacts from their waterways |
| | **Our Response** | **We would like to take the opportunity to meet with the CRT to learn more about the wider programme and findings. We agree that by doing so the potential benefits from a canal transfer scheme can be better understood. Subsequent to collation of that understanding, Affinity Water will update their environmental assessments more fully. We have contacted CRT and have initially incorporated the social and environmental benefits of canal schemes into our WRMP19 assessments.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 3.10 | Representation | The Trust would like to better understand Affinity Water's option selection process to ensure that their customers are not disadvantaged by their investment decisions. |
| | **Our Response** | **Affinity Water will present a revised decision-making process to the CRT as part of the further consultation process on the revised dWRMP, and will welcome any further comments the CRT has as to the appropriateness of the revised approach.** |
| | Summary of any change to our revised dWRMP | Greater transparency of the option selection process will be included in the revised dWRMP.<br><br>We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
| | | |
| 3.11 | Representation | The trust would like to understand the reasoning behind the assumptions (option yields) so that we are assured that the canal schemes proposed have been evaluated fairly and consistently.<br><br>Why is there a difference in the option benefit (Ml/d) to those originally proposed by the Trust? |

| 3. Canal & River Trust | | |
|---|---|---|
| | **Our Response** | **For the four schemes selected and included within table 2 of the CRT response. Our response is as follows:**<br><br>**1st BREN: Our proposed benefit is 7.5Ml/d, whereas the CRT proposed 8.9Ml/d. The lower value proposed is as a result of an independent assessment of the 'most likely' yield. Email sent to the CRT (05.09.2018) provided a detailed understanding of the assessment undertaken. The CRT proposed yield falls within the yield uncertainty proposed by our assessment.**<br><br>**2nd SLOU: The proposed benefit is 3.0Ml/d whereas the CRT benefit is 1.2Ml/d. The greater value is because of a combined option with another 3rd party borehole in the area which was amalgamated as one scheme to maximise efficiency.**<br><br>**3rd Canal Scheme: The proposed benefit is 50Ml/d, whilst the costs provided by the Trust were for a benefit of 75Ml/d. This is simply due to the fact there are 50/75/100/200 variants of this scheme. Since, and given the points made by the CRT and the requirement for further reassurance, we have asked CRT to provide us with costs for a 50 Ml/d and 100 Ml/d transfer for direct comparison with alternative options (email 04.09.2018). This data has been received and the equivalent options are now included within the work we are undertaking to develop our revised dWRMP.**<br><br>**4th COWR. This yield aligns with the CRT yield as provided.** |
| | Summary of any change to our revised dWRMP | The Canal schemes have now been updated and are included within the revised work we are undertaking to develop our revised dWRMP. |

| 4. Castle Water | | |
|---|---|---|
| 4.1 | Representation | How is demand management split between household and non-household? |
| | **Our Response** | **Demand management is not split between household and non-household properties. Household and non-household consumers' water consumption impacts on the total amount of water available for use.**<br><br>**We work with both retailers and household customers to reduce their water use via education, information, metering and water efficiency checks as well as reducing water lost through leakage. In times of high water demand we undertake additional information campaigns using a range of communication channels such as social media and Retailers Brief.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 4.2 | Representation | Will meters be open protocol i.e. accessible by retailers? If not, Affinity Water will need to provide data to retailers. |
| | **Our Response** | **We provide retailers with the data required by the Wholesale-Retail Code and ensure that our meters meet the requirements of this code. Our meters are already open protocol. We also offer meter reading services to retailers for non-household properties in our water supply area.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 4.3 | Representation | Retailers are keen to work more closely with Wholesalers. Retailers want to understand the issues and future plans. Not be seen as the enemy. |
| | **Our Response** | **We already work closely with retailers across a range of areas and are keen to understand more about how retailers are meeting their duty to promote the efficient use of water by their customers.**<br><br>**As part of our AMP7 Business Plan, we have developed a Bid Assessment Framework which describes the bid assessment process we will use when we identify requirements for new water resources, leakage or demand management services. Details of this framework can be found in Appendix 5 of our AMP7 Business Plan.**<br><br>**We are keen to foster future opportunities in water trading, demand management and leakage services and our bid assessment framework will provide third parties with confidence that options they propose will be assessed on a level playing field with in-house options.**<br><br>**We believe there is scope for us to incentivise retailers to offer creative demand management services to their non-household customers; a model that could ultimately lead to a cascade of water from water-rich areas to water-stressed areas and potentially drive innovation in the market** |
| | Summary of any change to our revised dWRMP | N/A |
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| 4.4 | Representation | Retailers are missing lots of customer data i.e. tell numbers, emails, site address, postcodes, if metered. This is a massive issue for retailers. |

| 4. Castle Water | | |
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| | **Our Response** | **We are working with the non-household market operator, MOSL and retailers, to improve the data for which wholesalers are responsible under the relevant market codes.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 4.5 | Representation | Key to inform and work with Retailers on drought and involve them in regional planning. |
| | **Our Response** | **We have been actively undertaking this in 2017/18. For example, issuing regular updates, calls, individual meetings and through regional bodies such as Water Resources South East.** |
| | Summary of any change to our revised dWRMP | N/A |

| 5. Chenies Parish Council | | |
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| 5.1 | Representation | The River Chess in the Chilterns runs through the Chess Valley to Rickmansworth, where it becomes a tributary of the Colne. Rather more than two miles of the river flow through our Parish in which it represents a very significant feature. It is a chalk stream that depends on groundwater from the chalk aquifer for its flow and is home to a variety of important wildlife, such as water voles, brown trout and stream water crowfoot. The Chess faces many threats - significantly low flows caused by abstraction for the public water supply, sewage discharges, and urban and agricultural runoff. Due largely to the amount of water being abstracted measured against the changing rainfall patterns of recent years it only takes a year's worth of below long-term average rainfall for the river to dry completely in Chesham and for the river level to drop significantly downstream.<br><br>The majority of water supplied for public use in our area comes from the aquifer with both Affinity Water and Thames Water abstracting groundwater from the Chess Catchment. As the Chess is dependent on groundwater for its flow it is in competition with the water companies for this resource - the more that is abstracted the less there is for the river.<br><br>The River Chess in Chesham was dry between October 2016 and April 2018. We have seen record low groundwater levels in the catchment in October, November and December 2017 with a slight improvement in January and March 2018. The recent rains of March and early April have allowed water in Chesham to flow again but judging from the low groundwater levels this will not last for long.<br><br>In our region groundwater is Affinity's only direct source of water supply meaning that they take water from the aquifer regardless of the condition of the aquifer. Neither of Affinity's plans (Preferred or Alternative) address this issue i.e. they propose continuing to pump water from the aquifer in good times and in bad to the detriment of the river Chess and the wider environment. This situation is set to continue at least until 2039 when there is mention of cooperation with Thames Water over the use of an as yet un-built reservoir at Abingdon. Affinity expect to meet increased demand due to population expansion through leakage reductions and customer metering but there is no guarantee their targets will be achieved. Overall there is no plan to reduce the practice of groundwater abstraction and no plan of their own to find an alternative source of supply.<br><br>Should Affinity's optimistic forecast prove accurate, our chalk streams are still in for a tough time. Should they prove wrong, then groundwater will be called upon to make up the difference and our rivers and environment will pay dearly as there is little supply tolerance or resilience in the plan.<br><br>As part of your review we would ask you to:<br><br>• End the reliance on groundwater<br>• Keep Affinity on target and hold them to account<br>• Ensure Abingdon Reservoir is built starting immediately |
| | **Our Response** | ***End the reliance on groundwater***<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we were not requested to implement any sustainability reductions for the River Chess as all water abstracted from the upper catchment (i.e. CHES and CHA sources) returns to the river via the Chesham Sewage Treatment Works (STW) outflow, thus mitigating the impact of abstraction. The section of the river upstream of the STW outfall has been the focus of the AMP6 National Environment Programme (NEP) investigation which is in the Options Appraisal stage. We have allowed for total cessation of CHA and CHES sources as a worst-case scenario should it be required pending the outcome of the Options Appraisal. This volume, which may need to be reduced, is included in the company wide reduction of 36.31 Ml/d planned for AMP7 (2020-25) implementation in the revised dWRMP.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good** |

| 5. Chenies Parish Council | | |
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| | | **ecological status and meet the Water Framework Directive objectives.**<br><br>**We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>***Keep Affinity on target and hold them to account***<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**These activities are reflected in our baseline demand forecast for WRMP 2019 and thus we are forecasting an initial reduction in total demand during the remainder of AMP6 and into AMP7 (2020-25). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 as per Ofwat's challenge and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**Our demand forecast is supported by actual data gathered from our Water Saving Programme which shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is consistent with other metering programmes in the water industry.**<br><br>***Ensure Abingdon Reservoir is built starting immediately***<br><br>**We are committed to working with neighbouring water companies and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part in two regional groups - Water Resources South East and Water Resources East and the Water UK Water Resources Long Term Planning Framework projects.**<br><br>**Within the regional context, our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. Based on work done to date, the preferred strategy is to secure additional reliable water by transferring water from a new regional reservoir in the Upper Thames catchment (referred to as the South East Strategic Reservoir) in partnership with Thames Water. This could support new abstractions in the Lower River Thames reaches. It should also increase our resilience and allow full conjunctive use of the surface and groundwater system. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**However, we are carefully considering the suitability of this option along with the appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional |

| 5. Chenies Parish Council | | |
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| | | supply and environmental resilience. We have named this “Supply 2040”.<br><br>We will continue our work with Water Resources in the South East (WRSE) and Water Resources East (WRE) and will share our activity based costing model with other companies in the WRSE to promote transparency of cost of water transfers, which we believe is essential for water transfer arrangements. |

| 6. Chilterns Conservation Board | | |
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| 6.1 | Representation | Long-term planning<br><br>While Affinity Water's decision to plan for the long-term is welcomed, the Board believes that the Preferred Plan lacks sufficient resilience and ambition to cope with increasing water demand in the face of climate change, while meeting its legal obligations and commitments to improve the freshwater environment. If we are to have any chance of seeing the vision of 'Clean and Plentiful Water' and 'Thriving Plants and Wildlife' set out in Defra's 25year plan for the Environment, a more radical approach is required.<br><br>The Board is supportive of the mechanisms that Affinity have identified to meet growing demand in a sustainable way through, demand and leakage reductions, increased flexibility and development of new water resources. However, the proposals set out in the Preferred Plan will not reduce Affinity's over-reliance on groundwater as its main source of supply and will not meaningfully reduce the detrimental impact of its abstraction activities on flows in the Chilterns' Chalk Streams.<br><br>As we have identified in our response to Thames Water's draft WRMP, we believe that the development of major new surface water storage resources, such as the proposed reservoir at Abingdon, are needed to meet future demand growth, increase supply resilience in the face of climate change and end the over-reliance on groundwater resources by both companies. Only significant, strategic reserves like this, which enable the harvesting of water during times of plenty for use during times when water is scarce, will relieve the chronic pressure on chalk stream flows, in the long-term.<br><br>However, the Board is concerned that a significant portion of both plan options on a new strategic water resource in the Upper Thames area (Abingdon reservoir), being developed and delivered on time. While we support Affinity's link to the Upper Thames Regional Development Project (UTRDP) and the additional water that it will bring, the success of this vital project lies mostly outside of Affinity's control.<br><br>As previously set out in its response to Thames Water's WRMP, the Board believes that the (Thames Water) plan to delay the development of the Abingdon reservoir until the 2040's, at the earliest is unacceptable and will lead to greater environmental damage being done to the Chilterns Chalk streams, in the meantime. We believe that Thames Water should bring forward the development of Abingdon Reservoir to the beginning of the AMP period to ensure that this new resource is made available as early as possible to cater for the levels of development proposed in the region, increase supply resilience and ease the pressure on over-abstracted rivers. This approach would fit with the UK government's own views as set out in the National Policy Statement for Water which recognises the necessity of strategic water resource development alongside leakage reduction and demand management efforts.<br><br>We ask that Affinity Water lobbies Thames Water to ensure the development of this vital new resource is fast-tracked to ensure it is built and commissioned as soon as possible. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**The rdWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**We are committed to working with neighbouring water companies and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part in two regional groups - Water Resources South East and Water Resources East and the Water UK Water Resources Long Term Planning Framework projects (at national level).** |

| 6. Chilterns Conservation Board | | |
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| | | **Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>There will be no new groundwater from chalk aquifers in our Central region. |
| | | |
| 6.2 | Representation | Climate Change<br><br>The Board has previously expressed its concern that Affinity Water's Drought Management Plan does not provide sufficient protection chalk streams because it does not recognise drought early enough or allow for the introduction of water efficiency measures at an early enough stage in a developing drought scenario to protect the water environment. For example, in 2017 despite groundwater levels reaching their lowest levels on record (for November) for the Chess and Misbourne and despite over 57% of the total length of chalk stream in the Chilterns AONB being dry, Affinity did not introduce any measures to restrict water use or even call a drought.<br><br>While the Board support Affinity's position of becoming more resilient, the approach to drought, set out in the PP of the dWRMP19 does not offer any significant improvement in terms of protection for the environment. Although it represents an improvement on the approach set out in fWRMP14, the PP would involve the implementation of drought permits in a 1 in 60/80 drought which would result in chalk stream catchments, already suffering environmental damage through low/no flow, being subjected to even greater levels of abstraction that could do severe, permanent harm to these fragile habitats. It is worth noting that the three worst droughts on record have occurred in the last 40 years and as droughts become more frequent and more severe, the approach set out in the PP will not provide sufficient protection to the environment over the plan period. The approach set out in the AP is preferable (drought permits considered in a 1 in 200year drought). However, the Board believes that Affinity should do more to ensure that drought permits, that would result in additional abstraction in chalk streams catchments, are avoided entirely. Contrary to what is stated in the plan, droughts, exacerbated by abstraction can cause long term harm to chalk stream habitats. Whilst it is true that sections that experience drying so recover to an extent, many do not recover fully at all. The Hughenden Stream for example, lost its trout population to drought in 2006 and the upper Chess lost its population in 1992. Neither population has ever recovered. |
| | **Our Response** | **Our revised dWRMP will build on our AP providing for drought resilience to a 1 in 200-year event with no use of emergency drought permits / orders after 2024 (as per the Alternative Plan). We will also increase drought resilience beyond 1 in 200 year at a future point after 2024 (this represents a change to the Alternative Plan).**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced groundwater abstraction by 42 Ml/d4 at the company scale. In our revised dWRMP, a further reduction of 36.31 Ml/d is planned by 2024.**<br><br>**Our extensive monitoring programme will enable us to identify these benefits in river flows and the ecology as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.** |

| 6. Chilterns Conservation Board | | |
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| | | **We are committed to increase our resilience in droughts and to this end we are changing our levels of service to a 1 in 200-year drought event with no drought permit sources used by 2024. To achieve this significant investment is included in our AMP7 Business Plan.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024. |
| | | |
| 6.3 | Representation | Managing Leakage<br><br>The Board does not support the leakage reduction target of 11% as set out in the PP. This represents a reduction in the target from the previous plan and falls short of Ofwat's target for Affinity Water. The target set out in the AP is more appropriate and matches the target of Thames Water and Ofwat. We believe that Affinity should consider the environmental benefits of leakage reduction as well rather than simply the economics. |
| | **Our Response** | **We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 (2020-25) which was supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
| | | |
| 6.4 | Representation | Reducing Per Capita Consumption<br><br>The Board welcomes Affinity Water's continued focus on driving down PCC and continuing with its programme of metering. However, it does not support the targeted reduction set out in the PP as it is not sufficiently ambitious. We would like to see the target of 110l/d adopted. The Board has worked with Affinity Water (and its predecessors Veolia and Three Valleys Water) over the last 20 years to help improve water efficiency across the Chilterns area through the Chilterns Chalk Streams Project and will happily work in partnership with Affinity in future to help attain the target. Working with Thames Water, the Chiltern Chalk Stream Project is developing an Education and Engagement Project to help drive down PCC across the South Chilterns area. The Project is due to start in September 2018. We would be keen to work with Affinity on this project to help deliver increase water efficiency across Affinity's Misbourne & Colne water supply areas.<br><br>Although the Board is willing and ready to be part of a partnership approach to drive down water usage across the Chilterns area, we believe that any reduction in PCC achieved at a local catchment level should result in a direct benefit to local rivers (and their local communities) rather than simply resulting in a reduction of the, more costly, imported water transferred from other water companies. River & environmental groups can be important allies of Affinity Water, helping to increase awareness of water issues |

| 6. Chilterns Conservation Board | | |
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| | | and driving change in water use habits at local community level. However, if they feel that their efforts will not result in benefit to their local rivers, they will not assist Affinity in delivering on its water efficiency objectives.<br><br>The Board recognises the need for greater regulation in building codes, local authority planning, water regulations and incentives for developers, to enable the government's PCC target to be met. The Board will continue to lobby government, both national and local, to ensure that steps are taken to ensure water efficiency measures are adopted as routine in new developments.<br><br>The Board notes that Affinity Water customers have some of the lowest water bills in the country (8% lower than the national average in 2016/17) and that the average cost has been falling in recent years. The Board believes that water is being priced too cheaply and this is hindering greater water efficiency savings as customers are not being encourage to value the water they use. We note that in Affinity's South East Region, customers pay a higher price for their water and believe that this is a significant factor behind the lower levels of water consumption in that region. The pricing structure and water efficiency strategies being employed in the South East region clearly provide a model which Affinity should consider employing across its entire operational area. |
| | **Our Response** | **In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**Our revised dWRMP will include a further leakage reduction of 15% in AMP7 (2020-25) and aim to achieve a 50% leakage reduction by 2050.**<br><br>**Our revised dWRMP will include a wider suite of demand management options to achieve more challenging levels of per capita consumption (PCC) aiming towards 110 l/h/d by 2040. We are committed to reducing PCC and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 compared with our current average consumption of 151.7 l/h/d which is ambitious.**<br><br>**Our previous work looking at the sensitivity of customer demand to price, for example rising block tariffs (whereby water increased in price as customers used more of it) and seasonal tariff trials, suggests customer demand is generally unresponsive to price. We will keep the role of tariff structures in assisting with demand management under review in the context of our overall approach to demand management.**<br><br>**We welcome the Board's offer of support to lobby local and national government to ensure that steps are taken to ensure water efficiency measures are adopted as routine in new developments.** |
| | Summary of any change to our revised dWRMP | A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 6.5 | Representation | Sustainability Reduction Options<br><br>The Board opposes the sustainability reductions of 10Ml/d as set out in the PP as it represents a significant reduction in the amount committed to by Affinity in its current Plan (27.7ML/d) and would mean that abstraction reductions proposed for chalk streams including the Misbourne would not now go ahead. Affinity Water quite rightly, received acclaim for its ambitious sustainability reductions programme as set out in fWRMP14 and it would be extremely disappointing if the abstraction reductions that it committed to previously were not now delivered. The Board questions the rationale that Affinity has used to justify such a figure which is so far below that being requested by the Environment Agency. Although we would be happy to support the more ambitious targeted reduction of 39ML/d as outlined in the AP, the Board feels that at the very least |

| 6. Chilterns Conservation Board | | |
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| | | the previously committed target of 27.7Ml/d should be honoured.<br><br>The Board notes that there are no abstraction reduction and/or morphological improvement options for the R. Chess included in the plan, despite the fact that the Chess is currently being investigated by both Thames Water and Affinity. We accept that the investigations into low flows in the Chess have not yet reached the options appraisal phase but note that Thames Water have included an abstraction reduction option for the Chess catchment in their draft plan. The R. Chess is perhaps the finest example of a chalk stream left in the Chilterns AONB but is suffering from chronic low flows, particularly in its upper reaches. Investigations into the flow problems in the Chess are lagging behind other chalk streams in the Chilterns and as a consequence, The Chess was not included in the sustainability reductions programme in fWRMP14. Now that a link between low flows in its headwaters and catchment abstraction has been established, it would be regrettable if options to address the issue were not included in the final WRMP. |
| | **Our Response** | **Following consultation with our regulators and local stakeholders we will adopt a 36.31 Ml/d sustainability reduction volume in our revised dWRMP which will be delivered by 2024.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In relation to the River Chess, in AMP6 we were not requested by the EA to reduce our level of abstraction in this area. This is because all the water abstracted from the upper catchment of the River Chess (i.e. CHES and CHAR sources) returns to the river via the Chesham Sewage Treatment Works ("STW") outflow, thus mitigating impacts of abstraction. The section of the river upstream of the STW outfall is the focus of the ongoing AMP6 National Environment Programme investigation, in collaboration with Thames Water and the EA, the results of which have been shared with local stakeholders. The investigation is now at the "Options Appraisal" stage, through which solutions will be developed to address any issues identified during the study. A potential reduction is included in the company wide reduction of 36.31 Ml/d planned for AMP7 to be implemented through the revised dWRMP.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
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| 6.6 | Representation | Working with water companies and third parties<br><br>In order to develop a robust, flexible and environmentally sustainable WRMP which is, less reliant on chalk groundwater sources and that is able to meet the challenges of the future, Affinity Water will need to work with water companies across the South East to develop a co-ordinated, regional approach to the development of new strategic water resources. It will also need to continue with and increase the level to which it works with partners at a local level to help deliver long lasting behavioural change in water usage.<br><br>The development of major new strategic water resources such as the UTRDP are absolutely essential if water companies in the South East are to meet the level of demand expected as the population grows over the next 60 years whilst leaving more water in the environment. However, the development of these new resources cannot wait until 2055 or even 2040. Our chalk streams are dying and need help now. The development of new strategic water resources of the size needed require a joined-up approach from water companies and government if the challenges facing us are to be met and we are to be the first generation to leave the natural environment in a better condition than we found it. |
| | **Our Response** | **We are committed to working with neighbouring water companies and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part in two regional groups - Water Resources South East and Water Resources East and the Water UK Water Resources Long Term Planning Framework projects (at national level).** |

| 6. Chilterns Conservation Board | | |
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| | | **Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | N/A. |

| 7. Consumer Council for Water | | |
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| 7.1 | Representation | Given the challenges faced by water companies operating in the seriously water stressed south east of England, we have welcomed the commitment by Affinity Water and its neighbouring companies to explore and establish a more strategic approach to long-term water resources management and planning through the Water Resources in the South East Group and Water Resources East. We expect this commitment to be reflected in the companies' individual water resources management plans. |
| | **Our Response** | **We continue our commitment to two regional groups, Water Resources South East (WRSE) and Water Resources East, long term planning. Our revised dWRMP will be informed by the next phase of WRSE modelling (Phase 4).** |
| | Summary of any change to our revised dWRMP | N/A. |
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| 7.2 | Representation | Planning for the longer term, and working in partnership with other water companies, provides the opportunity to consider new, more strategic supply options that will deliver resilient supplies for the region. It is therefore important that Affinity Water's final plan addresses the concerns raised by the Environment Agency, and through the Customer Challenge Group, and in doing so ensures that the regional water companies' plans are aligned and the development of new strategic water resources can be agreed; planned for and delivered in a timely and appropriate manner. We understand that recent changes in population forecasts for Affinity Water's area could potentially have a material impact on the timing of a key strategic resource development in the region, proposed by a neighbouring company, if Affinity seeks a larger bulk supply earlier on in the planning period. |
| | **Our Response** | **We are working with our neighbouring companies to ensure our respective plans are aligned where appropriate.**<br><br>**We have carefully reconsidered our housing and population forecasts. Where room for improvement was identified, we have adjusted the methodology. As such, we are confident that the demand forecasts on which the revised dWRMP is based have been developed in accordance with best practice and are as accurate as possible.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | We have updated our property and population forecasts. |
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| 7.3 | Representation | The pressures on existing water supplies in Affinity Water's areas of operation are significant, particularly in the Central area, and will grow with continued population and housing growth and the effects of climate change. The sustainability of the groundwater sources on which Affinity Water relies is therefore of crucial importance, as they not only provide the bulk of the water supply at present but are in themselves important for sustaining natural habitats and local wildlife which people in the area value. |

| 7. Consumer Council for Water | | |
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| | **Our Response** | **We have taken into account many factors such as population and housing growth and the effects of climate change in our water resources planning and assessed the impact to supply available and demand projected. We plan to implement further sustainability reductions in our revised dWRMP. There will be no new groundwater from chalk aquifers in our Central region.** |
| | Summary of any change to our revised dWRMP | We have updated our property and population forecasts.<br><br>Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>There will be no new groundwater from chalk aquifers in our Central region. |
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| 7.4 | Representation | Affinity Water has consulted on two possible approaches, a preferred plan and an alternative plan. The preferred plan is said to represent “best value” for customers and the environment, the alternative plan includes further options for improved levels of service under severe drought, larger demand reductions (leakage and per capita consumption) and greater sustainability reductions. Through the Customer Challenge Group the company has been challenged on the way it has engaged with its customers and the options presented. Given the significant issues raised by the Environment Agency we would support the call for any significantly revised plan to be retested with customers and stakeholders. |
| | **Our Response** | **We have taken on board feedback and with the changes we have proposed from our dWRMP, we will further consult with our stakeholders and customers on a revised dWRMP.** |
| | Summary of any change to our revised dWRMP | The revised dWRMP will be presented for further consultation in Spring 2019. |
| | | |
| 7.5 | Representation | The company must make supply resilience its priority. Only the alternative plan seems to achieve the level of resilience to drought and other challenges that we and consumers would expect from the company. Given the company’s recent experience of a prolonged period of dry weather the company must become more resilient to drought. It needs to ensure that it is able to maintain supplies to its customers even in severe drought situations and certainly without the need to use emergency measures like standpipes or rota cuts or by causing unnecessary damage to the local environment. |
| | **Our Response** | **We have chosen to proceed with the approach of the Alternative Plan in this regard which provides for a level of service of a 1 in 200 year drought event with no emergency drought permits/orders after 2024. However, given the multiple representations received regarding the importance of resilience, the rdWRMP will also increase drought resilience beyond a 1 in 200-year drought event, at a future point after 2024.** |
| | Summary of any change to our revised dWRMP | Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024 |
| | | |
| 7.6 | Representation | The Water Saving Programme will hopefully help to deliver further reductions in household usage but it is important that the company follows a twin track approach by also securing new water sources, particularly given the uncertainty and risk attached to some of the planning assumptions. This should also allow for the further sustainability reductions set out in the Water Industry National Environment Programme. |
| | **Our Response** | **In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of options is selected that increases our resilience to drought and population growth.** |

| 7. Consumer Council for Water | | |
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| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards further reduction to 110 l/h/d by 2040. |
| 7.7 | Representation | The initial focus in both plans being consulted on is demand management and central to this is a continuation of the compulsory metering and water efficiency programme. There is, however, likely to be a growing expectation from customers that are being metered that the company is at the forefront of leakage reduction. Only the alternative plan achieves the 15% reduction that Ofwat has challenged the water companies to deliver by 2025. We think it is essential that the company sets itself stretching targets for leakage reduction. |
| | **Our Response** | **Our revised dWRMP will include a leakage reduction of 15% in AMP7 and we plan to further include aim to achieve a 50% reduction by 2050 as recommended in the National Infrastructure Commission report.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |

| 8. Customers | | |
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| 8.1 | Representation | I have looked on the web and cannot find your dWRMP 19. Please could you send me the link. |
| | **Our Response** | **Link sent.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 8.2 | Representation | Dear Sir,<br><br>In response to the Affinity Water Draft Water Resources Management Plan Consultation I would like to urge the Secretary of State to do all that is possible to reverse the significant damage to chalk streams that is being caused by the over-abstraction of groundwater. The areas that most need your attention and action are as follows:<br><br>1. End the over-reliance on groundwater<br><br>In 2017 the River Ver, a globally rare chalk stream, suffered badly from significant stretches of dry river bed and greatly diminished flow - resulting in loss of habitat for invertebrates, fish, birds and mammals, and a build-up of smothering silt. This was in a year when no drought was declared.<br><br>Affinity Water's plans suggest that in the next 5 years, and for the foreseeable future, abstraction of groundwater remains the cornerstone of their water supply. I consider that the magnitude of the challenge in the South East requires a coordinated regional approach to water including investment in significant infrastructure projects to increase drought resilience.<br><br>Please bring the full powers of government and regulators to assist but also demand that Affinity reduce their reliance on groundwater in a speedy and determined fashion.<br><br>2. Keep Affinity on target and hold them to account<br><br>In the South East region, where population and housing are rising steeply, Affinity Water is projecting a fall in demand for water over the next 5 years. It is also forecasting significant water savings based on a consumer education, an ambitious leak reduction programme and the roll out of water meters.<br><br>I call upon government and regulators to scrutinise Affinity's projections in detail and rigorously police whatever forecasts are agreed. Swift action should be taken and suitable penalties applied should leak reduction targets be missed or consumer savings fail to materialise.<br><br>3. Ensure Abingdon Reservoir is built<br><br>I whole-heartedly support Affinity Water's link to the Upper Thames Regional Development project and the additional water that it will bring to the Affinity area. Having the ability to capture water when it's in abundance and use it to reduce pressure on groundwater is essential to the health of our chalk streams.<br><br>I ask that you bring all pressure to bear to guarantee that the proposed Abingdon Reservoir is built, with work starting as soon as possible. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced abstraction by 42 Ml/d per day across our operating area. This includes a 5.8 Ml/d reduction in groundwater abstraction from the Ver catchment (cessation of BOWB source). If this reduction is added to the FRIA reduction in 1993 (approximately 13 Ml/d) it accounts for an approximate 40% reduction in the Ver catchment to date. In our revised dWRMP, a further reduction of 9.1 Ml/d is** |

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| | | **planned which will bring the total reduction in abstraction above 50% since the 1990s.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We agree that a co-ordinated regional approach to water resource planning is important and we have taken a leading role in the WRSE project, supported WRE and participated on the steering group of the Water UK Long Term Water Resources Plan, working with the Environment Agency and other water companies to assess strategic water supply opportunities across the regions.**<br><br>**Our Business Plan includes performance commitments to reduce our per capita consumption (PCC) to 129 l/h/d and our leakage by 15% between 2020 and 2025. These performance commitments are underpinned by an outcome delivery incentive providing for financial consequences should we fail to achieve our targets. Our revised dWRMP will also include aim to achieve a 50% leakage reduction by 2050.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |

| 8. Customers | | |
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| | | A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>Conditioning treatment of our supply from Anglian Water, enabling us to move water freely around our Central region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this “Supply 2040”. |
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| 8.3 | Representation | As a long standing member of The Ver Valley Society and living for the last 54 years within 100 yards of the River Ver, I am writing to convey my current concerns over Affinity Water's latest Water Resources Management Plan. Their draft for 2020-2025 and beyond, is out for public consultation at https://stakeholder.affinitywater.co.uk/dwrmp-consultation.aspx<br><br>I consider that the future health of the River Ver requires more than Affinity is promising, even in its more ambitious Alternative Plan.<br><br>In 2017 the River Ver, a globally rare chalk stream, suffered badly from significant stretches of dry river bed and greatly diminished flow - resulting in loss of habitat for invertebrates, fish, birds and mammals, and a build-up of smothering silt. This was in a year when no drought was declared.<br><br>Affinity Water’s plans suggest that in the next 5 years, and for the foreseeable future, abstraction of groundwater remains the cornerstone of their water supply.<br><br>I consider that the magnitude of the challenge in the South East, where population and housing are rising steeply, requires a co-ordinated regional approach to water including investment in significant infrastructure projects to increase drought resilience.<br><br>Affinity Water is projecting a fall in demand for water over the next 5 years. It is also forecasting significant water savings based on a consumer education, an ambitious leak reduction programme and the roll out of water meters so I call upon government and regulators to scrutinise Affinity’s projections in detail and rigorously police whatever forecasts are agreed.<br><br>The St Albans Strategic Plan predicts very significant housing development in the Redbourn area in the foreseeable future. The present water resources will not sustain this demand so I whole-heartedly support Affinity Water’s link to the Upper Thames Regional Development project and the additional water that it will bring to the Affinity area.<br><br>Having the ability to capture water when it’s in abundance and use it to reduce pressure on groundwater is essential to the health of our chalk streams.<br><br>I therefore ask that you bring all pressure to bear to guarantee that the proposed Abingdon Reservoir is built, with work starting as soon as possible. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced abstraction by 42 Ml/d per day across our operating area. This includes a 5.8 Ml/d reduction in groundwater abstraction from the Ver catchment (cessation of BOWB source). If this reduction is added to the FRIA reduction in 1993 (approximately 13 Ml/d) it accounts for an approximate 40% reduction in the Ver catchment to date. In our revised dWRMP, a further reduction of 9.1 Ml/d is planned which will bring the total reduction in abstraction above 50% since the 1990s.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our** |

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| | | **knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We agree that a co-ordinated regional approach to water resource planning is important and we have taken a leading role in the WRSE project, supported WRE and participated on the steering group of the Water UK Long Term Water Resources Plan, working with the Environment Agency and other water companies to assess strategic water supply opportunities across the regions.**<br><br>**Our Business Plan includes performance commitments to reduce our per capita consumption (PCC) to 129 l/h/d and our leakage by 15% between 2020 and 2025. These performance commitments are underpinned by an outcome delivery incentive providing for financial consequences should we fail to achieve our targets. Our revised dWRMP will also include aim to achieve a 50% leakage reduction by 2050.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |

| 8. Customers | | |
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| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>Conditioning treatment of our supply from Anglian Water, enabling us to move water freely around our Central region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this “Supply 2040”. |
| | | |
| 8.4 | Representation | In 2017, a year in which no drought was declared, the River Ver, an important chalk stream flowing from the groundwater resources of the Chiltern Hills, suffered badly from significant stretches of dry river bed and greatly diminished flow. The result was a loss of habitat for invertebrates, fish, birds and mammals and a built-up of smothering silt.<br><br>Affinity Water’s plans suggest that for the next five years and for the foreseeable future, abstraction of groundwater remains the cornerstone of their water supply plans. The magnitude of the challenge to supply the South East’s water demands cannot be solved by a combination of leakage reduction, abstraction licence adjustment, education and groundwater control projects. The solution requires a co-ordinated regional approach with significant investment in infrastructure projects to increase drought resilience.<br><br>Affinity Water’s proposals include groundwater abstraction from new Greensand boreholes and boreholes in confined aquifers. The proposals suggest that there will be no effect on overlying or adjacent water bodies! Any groundwater textbook impresses that all groundwater abstraction will result in some kind of effects on adjacent waterbodies however impermeable the overlying layer may appear to be. It was this lack of awareness of groundwater abstraction effects that in the 1950s and '60s that lead to reduced River Ver and other chalk stream flows.<br><br>I whole-heartedly support Affinity Water’s link to the Upper Thames Regional Development project and the additional water that it will bring to the Affinity area. It is essential the Abingdon Reservoir is constructed as soon as possible so that its additional resources can be brought into the area and thus reduce reliance on the groundwater resources of our chalk streams. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced abstraction by 42 Ml/d per day across our operating area. This includes a 5.8 Ml/d reduction in groundwater abstraction from the Ver catchment (cessation of BOWB source). If this reduction is added to the FRIA reduction in 1993 (approximately 13Ml/d) it accounts for an approximate 40% reduction in the Ver catchment to date. In our revised dWRMP, a further reduction of 9.1Ml/d is planned which will bring the total reduction in abstraction above 50% since the 1990s.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from** |

| 8. Customers | | |
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| | | **ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3.**<br><br>**We are carefully considering the Lower Greensand options. Where a new abstraction licence is required this would be subject to the standard abstraction licensing process including undertaking an environmental impact assessment. The Environment Agency (EA) would not issue a new licence where an impact was identified. All new licences are also time-limited and therefore have an expiry date. We have an extensive environmental monitoring network of groundwater levels, river flows and lake levels which will be used to help with any assessment.**<br><br>**We will continue to work with the EA to identify groundwater options for inclusion in our revised dWRMP. These will not include new groundwater from chalk aquifers in our Central region.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Conditioning treatment of our supply from Anglian Water, enabling us to move water freely around our Central region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this “Supply 2040”. |

| 8. Customers | | |
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| 8.5 | Representation | I am writing with regard to Affinity Water's proposal to reduce reliance on groundwater abstraction. Although this has to be supported as a general principle it must be balanced with a realistic plan to provide water to the increasing population of St Albans (an extra 900+ homes per year). Additionally, any reduction in abstraction cannot be allowed to put existing homes at risk.<br><br>In particular I am concerned that the risks to homes in the St Albans area may not have been fully considered in the plans to reduce abstraction from the River Ver valley, especially at the Mud Lane and Holywell Hill pumping stations in St Albans. This is on the basis of information provided in a letter dated 27th April 2018 to my husband from Liam Dennis of the Environment Agency and Daniel Flitton of St Albans Council in response to issues raised with regard to the project to revitalise the River Ver and relocate the Cottonmill Allotment site. I am attaching a copy of that letter for your information. The relevant part is Question 4 on pages 2-6, and especially Figure 2 on page 4.<br><br>The justification provided for the allotment relocation is that with the reductions in abstraction the allotments will become unsustainable as allotments because of frequent flooding resulting from a rise in groundwater which they anticipate will be in the region of 1.5 metres. Specifically, the information provided on the basis of the LIDAR mapping of the area (figure 2) (which they accept cannot be totally accurate) to illustrate this shows that emergence of groundwater is expected extremely close to homes in De Tany Court and Old Sopwell Gardens St Albans, although it is stated that they are confident that no homes will be affected. It is especially worrying that the part of the map of De Tany Court is not accurate and does not show the full development on the estate down towards the river. There are a number of properties including my own which are much closer to the dashed line showing likely groundwater emergence, and which must therefore be at risk of flooding, particularly given the inherent difficulties in accurate prediction.<br><br>Any increased risk of flooding will inevitably lead to an increase in property insurance premiums and adversely affect the saleability and value of the homes affected, for which homeowners will require compensation. Any reduction in abstraction from the Mud Lane and Holywell Hill pumping stations shows a reckless disregard for these residents of the area, and should not be allowed to take place in the absence of convincing evidence that no homes are at risk. |
| | **Our Response** | **Our WRMP is the mechanism by which we set out how we will meet both existing and new demand using our available supplies and forecasting into 2080.**<br><br>**The EA is the authority responsible for alleviating any flood risk arising from abstraction reduction required to meet the objectives of the Water Framework Directive. We have therefore been working closely with the EA and will, of course, follow their advice in this regard.**<br><br>**The EA has shared the Ver Groundwater Emergence Technical Memo which addresses flood risk. The anticipated rise in water levels in the allotments area as modelled by the Environment Agency, is considered to be worst case based on the anticipated groundwater level recovery of an unconfined chalk aquifer, using LiDAR (Laser Imaging, Detection And Ranging) data to specify the surface elevations. It shows that, as a result of the planned sustainability reductions, the groundwater level is expected to rise to about 1.3m. Importantly, however, this does not mean that the surface water will rise by this amount, as there is evidence of over pressurisation of the chalk aquifer in the allotments area, where watercress farming took place in the early 1900s. The watercress beds here were fed by artesian boreholes that used the aquifer's overpressure to supply groundwater of a constant temperature so as to avoid freezing during the winter months. Some artesian boreholes are still active downstream of the allotments area in other water cress facilities nearby.**<br><br>**Further, we are participating in an Environment Agency led project that is considering proposed river restoration work in the allotment area to alleviate flood risk by returning the river to its natural course so that it is no longer elevated and routed away from its original course, but is instead returned to its natural course.**<br><br>**Open meetings in the St Albans area have been held where discussions took place with local residents, landowners and allotment holders to address any concerns arising from these proposals.** |

| 8. Customers | | |
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| | Summary of any change to our revised dWRMP | N/A |
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| 8.6 | Representation | Dear Sir<br><br>I refer to Affinity Water's proposal to reduce reliance on groundwater abstraction & understand that it is intended to reduce abstraction from the River Ver valley, especially at the Mud Lane & Holywell Hill pumping stations in St Albans ( "the Reduction").<br><br>It is important that all material factors are taken into account prior to the Reduction, with adequate consultation of any properties which may be subject to potential increased flood risk, after obtaining a flooding expert report as to this. The Reduction will lead to a rise in ground water levels & this report should consider how any potential increased flood risk may be minimised to prevent financial loss arising from this situation. If a property is subject to an increased potential flood risk, then this may reduce the value of the property or render it unsalable. In addition the property insurance premiums may rise or the property become uninsurable.<br><br>If the Reduction leads to an increase in ground water levels, then there will be an increased flood risk for the low lying properties in De Tany Court, Albeny Gate, Riverside Road, Nunnery Stables & Old Sopwell Gardens St Albans, together with the Cottonmill Lane Allotments. This is a considerable number of properties & their owners will have the protection of the rules of Natural Justice (including the right to a fair hearing) together with their rights under the Human Rights Act 1998. If these rights are breached, then those affected would have the right to bring a court action for judicial review of the Reduction. |
| | **Our Response** | **The EA is the authority responsible for alleviating any flood risk arising from abstraction reduction required to meet the objectives of the Water Framework Directive. We have therefore been working closely with the EA and will, of course, follow their advice in this regard.**<br><br>**The EA has shared the Ver Groundwater Emergence Technical Memo which addresses flood risk. The anticipated rise in water levels in the allotments area as modelled by the Environment Agency, is considered to be worst case based on the anticipated groundwater level recovery of an unconfined chalk aquifer, using LiDAR (Laser Imaging, Detection And Ranging) data to specify the surface elevations. It shows that, as a result of the planned sustainability reductions, the groundwater level is expected to rise to about 1.3m. Importantly, however, this does not mean that the surface water will rise by this amount, as there is evidence of over pressurisation of the chalk aquifer in the allotments area, where watercress farming took place in the early 1900s. The watercress beds here were fed by artesian boreholes that used the aquifer's overpressure to supply groundwater of a constant temperature so as to avoid freezing during the winter months. Some artesian boreholes are still active downstream of the allotments area in other water cress facilities nearby.**<br><br>**Further, we are participating in an Environment Agency led project that is considering proposed river restoration work in the allotment area to alleviate flood risk by returning the river to its natural course so that it is no longer elevated and routed away from its original course, but is instead returned to its natural course.**<br><br>**Open meetings in the St Albans area have been held where discussions took place with local residents, landowners and allotment holders to address any concerns arising from these proposals.** |
| | Summary of any change to our revised dWRMP | N/A |

| 8. Customers | | |
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| 8.7 | Representation | Dear Sirs,<br><br>I am writing in relation to proposed works to the River Ver in St Albans. I am aware that others have written to you in the last few days expressing concern as to these proposed works. The area of my serious concern is that of increased flooding risks to homes. I live at 1 Old Sopwell Gardens, AL1 2BY, and also own 3 Old Sopwell Gardens, next door. Within the last few years, there has been flooding of the area of grassland immediately to the north of these properties when it has rained heavily. Such flooding has come within metres of the rear gardens, which are very small. The intentional raising of ground water levels will surely cause flooding, and I am extremely concerned that (a) this has not been assessed, or (b) this has not been assessed adequately, given that official categorisation does not give a realistic figure for the frequency of flooding to the relevant area.<br><br>I therefore object to the proposals.<br><br>Please let me know what reassurance you can give as to what assessment has been carried out and what degree of confidence there is that there will be no material risk of flooding to houses that are essentially on a flood plain.<br><br>I would be happy to give more information if it is requested. |
| | **Our Response** | **The EA is the authority responsible for alleviating any flood risk arising from abstraction reduction required to meet the objectives of the Water Framework Directive. We have therefore been working closely with the EA and will, of course, follow their advice in this regard.**<br><br>**The EA has shared the Ver Groundwater Emergence Technical Memo which addresses flood risk. The anticipated rise in water levels in the allotments area as modelled by the Environment Agency, is considered to be worst case based on the anticipated groundwater level recovery of an unconfined chalk aquifer, using LiDAR (Laser Imaging, Detection And Ranging) data to specify the surface elevations. It shows that, as a result of the planned sustainability reductions, the groundwater level is expected to rise to about 1.3m. Importantly, however, this does not mean that the surface water will rise by this amount, as there is evidence of over pressurisation of the chalk aquifer in the allotments area, where watercress farming took place in the early 1900s. The watercress beds here were fed by artesian boreholes that used the aquifer's overpressure to supply groundwater of a constant temperature so as to avoid freezing during the winter months. Some artesian boreholes are still active downstream of the allotments area in other water cress facilities nearby.**<br><br>**Further, we are participating in an Environment Agency led project that is considering proposed river restoration work in the allotment area to alleviate flood risk by returning the river to its natural course so that it is no longer elevated and routed away from its original course, but is instead returned to its natural course.**<br><br>**Open meetings in the St Albans area have been held where discussions took place with local residents, landowners and allotment holders to address any concerns arising from these proposals.** |
| | Summary of any change to our revised dWRMP | N/A |

| 8. Customers | | |
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| 8.8 | Representation | I am writing with regard to Affinity Water's proposal to reduce reliance on groundwater abstraction particularly at the Mud Lane and Holywell Hill pumping stations in St Albans. Whilst there may be good reasons for this any decision the safety of people's homes must take priority and hence it is essential that they fully evaluate the additional risk of flooding to all properties which border the river including De Tany Court, Albany Gate, Riverside Road, Riverside Court, Nunnery Stables & Old Sopwell Gardens.<br><br>My property is on the edge of the Cottonmill allotment site which I am told will be unsustainable as a result of the reduced water extraction. If groundwater levels rise sufficiently on this site then there is a risk that Cottonmill Lane will flood from time to time; if this were to happen then any flood water would flow downhill and directly into Nunnery Stables flooding the 5 properties in that road. We are told that theoretically this is unlikely based on computer modelling but has anyone actually walked the area and taken into account of such things as the camber of road etc?<br><br>Not only do floods have a devastating effect on people's lives but even a potential increased flood risk is sufficient to increase insurance premiums and property values so it would be reckless for Affinity Water to proceed with their plans without the very highest level of confidence that there is NO risk to any existing properties and in making their evaluations they should not rely solely on computer modelling. |
| | **Our Response** | **The EA is the authority responsible for alleviating any flood risk arising from abstraction reduction required to meet the objectives of the Water Framework Directive. We have therefore been working closely with the EA and will, of course, follow their advice in this regard.**<br><br>**The EA has shared the Ver Groundwater Emergence Technical Memo which addresses flood risk. The anticipated rise in water levels in the allotments area as modelled by the Environment Agency, is considered to be worst case based on the anticipated groundwater level recovery of an unconfined chalk aquifer, using LiDAR (Laser Imaging, Detection And Ranging) data to specify the surface elevations. It shows that, as a result of the planned sustainability reductions, the groundwater level is expected to rise to about 1.3m. Importantly, however, this does not mean that the surface water will rise by this amount, as there is evidence of over pressurisation of the chalk aquifer in the allotments area, where watercress farming took place in the early 1900s. The watercress beds here were fed by artesian boreholes that used the aquifer's overpressure to supply groundwater of a constant temperature so as to avoid freezing during the winter months. Some artesian boreholes are still active downstream of the allotments area in other water cress facilities nearby.**<br><br>**Further, we are participating in an Environment Agency led project that is considering proposed river restoration work in the allotment area to alleviate flood risk by returning the river to its natural course so that it is no longer elevated and routed away from its original course, but is instead returned to its natural course.**<br><br>**Open meetings in the St Albans area have been held where discussions took place with local residents, landowners and allotment holders to address any concerns arising from these proposals.** |
| | Summary of any change to our revised dWRMP | N/A |

| 8. Customers | | |
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| 8.9 | Representation | Re: Affinity Water draft water resources management plan<br><br>As a lover of the Chess Valley I would like Mr Gove and Affinity water to take heed of the River Chess Associations view, which are the same as mine.<br><br>They have carefully considered Affinity Water's draft Water Resources Management Plan and attended the Affinity Water - Misbourne Community Stakeholder Forum, on the 2nd May 2018 and have come to the conclusion that as far as our the globally rare chalk streams are concerned neither their Preferred Plan nor their Alternative Plan contains much good news.<br><br>If we are to have any chance of seeing the 'Clean and Plentiful Water' and 'Thriving Plants and Wildlife' envisioned by A Green Future we ask you to take these 4 steps:<br><br>1. End the over-reliance on groundwater<br><br>2. Keep Affinity on target and hold them to account<br><br>3. Ensure Abingdon Reservoir is built<br><br>4. Over Abstraction in the River Chess Catchment<br><br>It is time to take bold steps and in respect of Affinity's WRMP, reduce the over-reliance on groundwater, place their overly ambitious targets under close scrutiny and ensure that the construction of Abingdon Reservoir goes ahead. Only then could the Chiltern chalk streams have any confidence that "ours can become the first generation to leave the environment in a better state than we found it".<br><br>I also have strongly felt it's high time there was a national water network, after all we have an existing network of canals. Any issues that come up are trivial to solve to avoid water shortages in the south-southwest. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In relation to the River Chess, in AMP6 we were not requested by the EA to reduce our level of abstraction in this area. This is because all the water abstracted from the upper catchment of the River Chess (i.e. CHES and CHAR sources) returns to the river via the Chesham Sewage Treatment Works ("STW") outflow, thus mitigating impacts of abstraction. The section of the river upstream of the STW outfall is the focus of the ongoing AMP6 National Environment Programme investigation, in collaboration with Thames Water and the EA, the results of which have been shared with local stakeholders. The investigation is now at the "Options Appraisal" stage, through which solutions will be developed to address any issues identified during the study. A potential reduction is included in the company wide reduction of 36.31 Ml/d planned for AMP7 to be implemented through the revised dWRMP.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.** |

| 8. Customers | | |
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| | | **We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200-year drought at a future point after 2024.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**Our Business Plan includes performance commitments to reduce our per capita consumption (PCC) to 129 l/h/d and our leakage by 15% between 2020 and 2025. These performance commitments are underpinned by an outcome delivery incentive providing for financial consequences should we fail to achieve our targets. Our revised dWRMP will also include aim to achieve a 50% leakage reduction by 2050.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>Conditioning treatment of our supply from Anglian Water, enabling us to move water freely around our Central region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this “Supply 2040”. |
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| 8.10 | Representation | The mains water pressure in High Roding, Essex CM6 has always been weak but is something we learn to live with in this rural area. However, since Uttlesford District Council saw fit to allow the erection of 30+ new domestic properties in the village, which are not yet fully occupied, the extra demand on our mains supply has reduced our water pressure to little more than a trickle.<br><br>Kindly look to improve this situation as part of the above plan, or reduce your water charges to High Roding by a considerable amount; the current charges paid by residents for this substandard service do not reflect value for money and we are consequently being overcharged. |
| | **Our Response** | **Over the last year we completed a large trunk main reinforcement in the area to ensure new developments do not have an adverse effect on existing customers properties. Following the work done, the overall pressure should be improved.** |

| 8. Customers | | |
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| | | **We will be carrying out further work to balance flows over exceptional peak flow periods such as those experienced this summer.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 8.11 | Representation | 1. End the over-reliance on groundwater<br><br>In 2017 the River Ver, a globally rare chalk stream, suffered badly from significant stretches of dry river bed and greatly diminished flow - resulting in loss of habitat for invertebrates, fish, birds and mammals, and a build-up of smothering silt. This was in a year when no drought was declared.<br><br>Affinity Water's plans suggest that in the next 5 years, and for the foreseeable future, abstraction of groundwater remains the cornerstone of their water supply. I consider that the magnitude of the challenge in the South East requires a co-ordinated regional approach to water including investment in significant infrastructure projects to increase drought resilience.<br><br>Please bring the full powers of government and regulators to assist but also demand that Affinity reduce their reliance on groundwater in a speedy and determined fashion.<br><br>2. Keep Affinity on target and hold them to account<br><br>In the South East region, where population and housing are rising steeply, Affinity Water is projecting a fall in demand for water over the next 5 years. It is also forecasting significant water savings based on a consumer education, an ambitious leak reduction programme and the roll out of water meters.<br><br>I call upon government and regulators to scrutinise Affinity's projections in detail and rigorously police whatever forecasts are agreed. Swift action should be taken and suitable penalties applied should leak reduction targets be missed or consumer savings fail to materialise.<br><br>3. Ensure Abingdon Reservoir is built<br><br>I whole-heartedly support Affinity Water's link to the Upper Thames Regional Development project and the additional water that it will bring to the Affinity area. Having the ability to capture water when it's in abundance and use it to reduce pressure on groundwater is essential to the health of our chalk streams.<br><br>I ask that you bring all pressure to bear to guarantee that the proposed Abingdon Reservoir is built, with work starting as soon as possible. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced abstraction by 42 Ml/d per day across our operating area. This includes a 5.8 Ml/d reduction in groundwater abstraction from the Ver catchment (cessation of BOWB source). If this reduction is added to the FRIA reduction in 1993 (approximately 13 Ml/d) it accounts for an approximate 40% reduction in the Ver catchment to date. In our revised dWRMP, a further reduction of 9.1 Ml/d is planned which will bring the total reduction in abstraction above 50% since the 1990s.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024.** |

| 8. Customers | | |
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| | | **This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We agree that a co-ordinated regional approach to water resource planning is important and we have taken a leading role in the WRSE project, supported WRE and participated on the steering group of the Water UK Long Term Water Resources Plan, working with the Environment Agency and other water companies to assess strategic water supply opportunities across the regions.**<br><br>**Our Business Plan includes performance commitments to reduce our per capita consumption (PCC) to 129 l/h/d and our leakage by 15% between 2020 and 2025. These performance commitments are underpinned by an outcome delivery incentive providing for financial consequences should we fail to achieve our targets. Our revised dWRMP will also include aim to achieve a 50% leakage reduction by 2050.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 8.12 | Representation | I am writing to express my concern that recent plans for future water management by Affinity appear to take no substantive account of what is a growing environmental crisis in this area, exacerbated daily by the practice of taking water for Affinity customers exclusively from the Aquifers which supply the feeders in the Colne valley.<br><br>Unlike many other companies, Affinity takes its water exclusively from the aquifers, in quantities that have demonstrably degraded the flows of rivers into the Colne valley. This is an area of growing population so demand pressures increase. The aquifers concerned will also/ are now being tapped for construction work for HS2.<br><br>Prior to approval of HS2 over 80% of the flow of the Colne in Denham was accounted for by sewage farm outlets from the 2 Sewage works above (Watford and Maple Cross). Last year there was no water in the Colne above its confluence with the Ver, and in recent years the sources of the Bulbourne and Misbourne (both feeders) have fluctuated wildly in response to declining aquifer levels. Dry winters (which are unpredictable in their timing but inevitable in their occurrence) merely exacerbate an already critical position.<br><br>I mention these facts as background to what is without doubt a very precarious position. One would have hoped that future plans from Affinity would have looked to alternative and complimentary strategies to ameliorate the position. It seems obvious to me that continuation with existing policies given the background will lead to inevitable crisis, but the salami slicing/tinkering/more of the same approach of reducing leakage (commendable but common sense), consumption through metering (helpful but not fundamental) will suffice. It will not, unless we accept dry rivers and degradation of habitat as acceptable. What is needed is a plan for water capture and storage on a scale that will significantly reduce the current unsustainable levels of abstraction from the Aquifers. This requires significant investment. There is no such plan.<br><br>I would strongly urge that such a plan is properly investigated with specific reference to long term sustainability rather than short term gain. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**As part of our National Environment Programme studies we have calculated the water balance for the Mid Colne catchment. The combined outflow from the Sewerage Treatment Works is approximately one third of the total flow of the River Colne at Denham and whilst it may be more significant in dry conditions, there is a large amount of chalk baseflow during most years. A large proportion of the groundwater abstracted for public supply purposes in the Colne catchment returns to the catchment at the two locations mentioned, resulting in limited net loss of water out of the catchment.**<br><br>**Our studies undertaken as part of the National Environment Programme have indicated that the River Colne upstream of the Ver confluence is an atypical chalk stream due to the presence of boulder clay which hydraulically separates the upper gravels from the lower gravels and chalk where the groundwater abstraction is taking place from. As a result, the top of the Upper Colne through London Colney and up to Colney Street would experience low flows every summer of an average year due to the natural depletion of the gravel storage.** |

| 8. Customers | | |
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| | | **The upper reaches of all chalk streams have the "winterbourne" sections that seasonally dry up as the groundwater table fluctuates between summer and winter months. Despite historic abstraction reductions at the top of the catchments (Misbourne, Bulbourne and Ver) these rivers have continued to experience low or no flows in their upper reaches. Recent studies have identified that the stratification of the chalk aquifer does not allow enhanced vertical hydraulic connectivity hence causing the upper reaches to reach low flows.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 8.13 | Representation | Having seen my local River – the Ver run dry over the past 2 winters when we are apparently not in a period of drought it seems incredulous that Affinities Water Resources Plan places such a heavy reliance on groundwater abstraction. The recent reductions in abstraction have made little or no impact on the available water to the river and clearly illustrate that Affinity and the Agencies do not fully understand how the Chalk Aquifer works.<br><br>The forecast water consumption in the plan is based on the idea that users can be persuaded to use less water. Water is a relatively cheap product. If users are paying for water, via their meter, then there is little incentive to reduce consumption. Indeed, there could be a reverse reaction – of "I am paying for the water so I will use what I can afford". This approach has the feel of a slight of hand to make the numbers in the planning model work.<br><br>On a positive note the concept of a reservoir at Abingdon is sound. But the work should be accelerated so that winter rain water can be captured and stored for use in the summer thereby placing less reliance on groundwater. It would be better to have the reservoir built before it is absolutely necessary to reduce the risk of water shortage. |

| 8. Customers | | |
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| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced abstraction by 42 Ml/d per day across our operating area. This includes a 5.8 Ml/d reduction in groundwater abstraction from the Ver catchment (cessation of BOWB source). If this reduction is added to the FRIA reduction in 1993 (approximately 13 Ml/d) it accounts for an approximate 40% reduction in the Ver catchment to date. In our revised dWRMP, a further reduction of 9.1 Ml/d is planned which will bring the total reduction in abstraction above 50% since the 1990s.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**Our previous work looking at the sensitivity of customer demand to price, for example rising block tariffs (whereby water increased in price as customers used more of it) and seasonal tariff trials, suggests customer demand is generally unresponsive to price. We will, however, keep the role of tariff structures in assisting with demand management under review in the context of our overall approach to demand management.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |

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| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>“Supply 2040” – a long-term strategic plan to enable us to move water freely around our Central region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>There will be no new groundwater from chalk aquifers in our Central region. |
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| 8.14 | Representation | The River Ver is suffering very badly from over extraction and basically is dead North of Redbourn. As you are aware the Ver is one of few rare chalk streams and its sad state is affecting the habitat, the wildlife, recreational activities and the environment through which it should flow.<br><br>Can you please end your reliance on ground water extraction particularly when that practice has such disastrous effects.<br><br>South East house building without sustainable water supplies is clearly a no brainer for both the short term and the longer term. There seems to be no apparent attempt at a National Water Grid and other reliable methods of increasing water supplies to the SE and yet developers are pressing for more houses in this area without solid plans for water supply. There has always been plenty of water 'Up North' and if that was available all over England then the proposed massive house building programme around London might be a consideration.<br><br>Without that reliable source then this area is at saturation if we are to protect the supplies and the environment for future generations.<br><br>Could you please check the Affinity Plans in detail and look at the long term effects and problems and how they are going to be overcome. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced abstraction by 42 Ml/d per day across our operating area. This includes a 5.8 Ml/d reduction in groundwater abstraction from the Ver catchment (cessation of BOWB source). If this reduction is added to the FRIA reduction in 1993 (approximately 13 Ml/d) it accounts for an approximate 40% reduction in the Ver catchment to date. In our revised dWRMP, a further reduction of 9.1 Ml/d is planned which will bring the total reduction in abstraction above 50% since the 1990s.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.** |

| 8. Customers | | |
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| | | **We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We agree that a co-ordinated regional approach to water resource planning is important and we have taken a leading role in the WRSE project, supported WRE and participated on the steering group of the Water UK Long Term Water Resources Plan, working with the Environment Agency and other water companies to assess strategic water supply opportunities across the regions.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>There will be no new groundwater from chalk aquifers in our Central region.<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this “Supply 2040”. |

| 8. Customers | | |
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| 8.15 | Representation | Dear Secretary of State for the Environment,<br><br>Please read the email below as this issue matters.<br><br>End the over-reliance on groundwater<br><br>In 2017 the River Ver, a globally rare chalk stream, suffered badly from significant stretches of dry river bed and greatly diminished flow - resulting in loss of habitat for invertebrates, fish, birds and mammals, and a build-up of smothering silt. This was in a year when no drought was declared.<br><br>Affinity Water's plans suggest that in the next 5 years, and for the foreseeable future, abstraction of groundwater remains the cornerstone of their water supply.<br>I consider that the magnitude of the challenge in the South East requires a co-ordinated regional approach to water including investment in significant infrastructure projects to increase drought resilience.<br><br>Please bring the full powers of government and regulators to assist but also demand that Affinity reduce their reliance on groundwater in a speedy and determined fashion.<br><br>Keep Affinity on target and hold them to account<br><br>In the South East region, where population and housing are rising steeply, Affinity Water is projecting a fall in demand for water over the next 5 years.<br><br>It is also forecasting significant water savings based on a consumer education, an ambitious leak reduction programme and the roll out of water meters.<br><br>I call upon government and regulators to scrutinise Affinity's projections in detail and rigorously police whatever forecasts are agreed.<br>Swift action should be taken and suitable penalties applied should leak reduction targets be missed or consumer savings fail to materialise.<br><br>Ensure Abingdon Reservoir is built<br><br>I whole-heartedly support Affinity Water's link to the Upper Thames Regional Development project and the additional water that it will bring to the Affinity area.<br>Having the ability to capture water when it's in abundance and use it to reduce pressure on groundwater is essential to the health of our chalk streams.<br><br>I ask that you bring all pressure to bear to guarantee that the proposed Abingdon Reservoir is built, with work starting as soon as possible. |
| | **Our Response** | **We currently source approximately 40% from surface water sources and 60% from groundwater sources.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced abstraction by 42 Ml/d per day across our operating area. This includes a 5.8 Ml/d reduction in groundwater abstraction from the Ver catchment (cessation of BOWB source). If this reduction is added to the FRIA reduction in 1993 (approximately 13 Ml/d) it accounts for an approximate 40% reduction in the Ver catchment to date. In our revised dWRMP, a further reduction of 9.1 Ml/d is planned which will bring the total reduction in abstraction above 50% since the 1990s.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and to support achievement of good ecological status.**<br><br>**The revised dWRMP will provide a new treatment works scheme at SUND for 2024. This will allow us to maximise our statutory entitlement to receive water from ANGL by addressing differences in the chemical qualities of the water thereby allowing us to move water freely around our Central region. This will allow us to deliver the sustainability reductions included on WINEP3. We have also removed** |

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| | | **all new chalk groundwater options that were proposed in our draft WRMP.**<br><br>**In the longer term, we plan to include a new strategic import that will be surface water derived. These planned changes will change the ratio to a greater use of surface water. This will improve resilience by allowing better conjunctive use of our sources.**<br><br>**We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We agree that a co-ordinated regional approach to water resource planning is important and we have taken a leading role in the WRSE project, supported WRE and participated on the steering group of the Water UK Long Term Water Resources Plan, working with the Environment Agency and other water companies to assess strategic water supply opportunities across the regions.**<br><br>**Our Business Plan includes performance commitments to reduce our per capita consumption (PCC) to 129 l/h/d and our leakage by 15% between 2020 and 2025. These performance commitments are underpinned by an outcome delivery incentive providing for financial consequences should we fail to achieve our targets. Our revised dWRMP will also include aim to achieve a 50% leakage reduction by 2050.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>There will be no new groundwater from chalk aquifers in our Central region.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this “Supply 2040”. |
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| 8. Customers | | |
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| 8.16 | Representation | I see that you are consulting on your WRMP at present and wondered if you were planning any events in the Folkestone area? I am a household customer and also associated with a local environmental group. |
| | **Our Response** | **Details of Dour forum sent.** |
| | Summary of any change to our revised dWRMP | N/A |

## 9. Environment Agency

**Table 1: evidence, details and reasons to support the recommendations made in Section 3 of representation**

**Recommendation 1: Present a new plan that delivers secure supplies, protects the environment, and consult with its customers**

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| R1.1 | Area of Issue | Approach to consultation and understating the risks of the preferred plan |
| | Issues and evidence | We have significant concerns that in its draft plan consultation document the company has asked leading questions, against the advice of its customer challenge group. This risks inappropriately directing support for its preferred plan that does not sufficiently address environmental concerns with potentially damaging abstractions.<br><br>The company presents the alternative plan as an ambitious and higher risk plan and does not make it clear to stakeholders that the preferred plan fails to deliver minimum environmental requirements (for example, delivery of the Water Industry National Environment Programme (WINEP) green and amber schemes). The alternative plan also falls short of delivering some key requirements relating to the WINEP (reduced commitment to delivery of habitat enhancement and river restoration measures), and both plans utilise options that have a high environmental risk and may not be viable. |
| | Implications | The preferred plan is presented as a lower risk plan despite failing to address the WINEP, posing a high degree of risk to its delivery. This approach to presentation may influence the consultation in favour of a less resilient, less sustainable plan that carries a high risk of failure. |
| | Information or changes required | The company should develop a revised preferred plan that meets regulatory requirements for the protection of the environment and reflects customer, regulator and Government expectations for resilience to drought and non- drought events.<br><br>The company should re-consult on a revised draft plan that clearly sets out the company's ambition to enhance resilience and protect the environment. See also Recommendation 5.<br><br>Reference can be made to Table 3 below for further details of options that present a high environmental risk. |
| | **Our response** | **We will be further consulting on a revised dWRMP that clearly sets out the company's ambition to enhance resilience and protect the environment.**<br><br>**We will liaise closely with our Customer Challenge Group (CCG) in developing our approach to the further consultation.**<br><br>**It is important to recognise that, although the dWRMP19 public consultation had room for improvement, it successfully obtained the view of customers and stakeholders via a number of channels. The consultation encompassed:**<br><br>• **A representative customer survey with 1,000 participants.**<br>• **Customer focus groups with 66 participants.**<br>• **Stakeholder forums attended by 65 participants.**<br>• **Future Customers focus groups and survey with 1002 participants.**<br>• **A variety of other customer engagement via our PR19 programme.** |
| | Summary of any change to our revised dWRMP | The revised dWRMP will be presented for further consultation in Spring 2019. |
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| R1.2 | Area of Issue | Both the preferred plan and the alternative plan risk not delivering secure supplies and increased resilience |
| | Issues and evidence | In both the preferred plan and the alternative plan, the company has selected portfolios of investment that carry a high degree of uncertainty, present significant risks to the environment or fail to deliver resilience to drought and non-drought hazards. |
| | Implications | The preferred plan and alternative plan make insufficient use of key options that could |

| 9. Environment Agency | | |
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| | | improve resilience whilst reducing uncertainty and environmental impacts. |
| | Information or changes required | The company should develop a revised preferred plan that offers security of supply and resilience in line with customer and regulator expectations. |
| | **Our response** | **We believe our draft WRMP offered security of supply and resilience. We will be presenting our revised decision-making process that will allow us to select options and portfolios that offer resilience whilst minimising environmental impacts and uncertainty. We will continue to work with the EA on this important area of our plan.** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
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| R1.3 | Area of Issue | The alternative plan has not undergone a full and complete assessment |
| | Issues and evidence | The preferred plan and the alternative plan are presented as equally likely outcomes for the final WRMP. As such, the company should present the same level of assessment for both plans, including the assessment of impacts on the environment and risks to delivery – see Recommendations 7 and 9. |
| | Implications | The supporting information for the alternative plan is insufficient to allow a proper comparison against the preferred plan. |
| | Information or changes required | The company should present a revised plan that is supported by a complete assessment of option feasibility, risks and environmental impacts. |
| | **Our response** | **Our revised dWRMP will be fully assessed.** |
| | Summary of any change to our revised dWRMP | We will present a full set of data for our revised dWRMP, including completion of the WRP tables |
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| R1.4 | Area of Issue | Water Resources Planning (WRP) tables are not provided for the alternative plan |
| | Issues and evidence | The company has not completed the WRP tables for the alternative plan. |
| | Implications | Both the preferred plan and the alternative plan are being presented as equally likely outcomes. As such both should be represented in the planning tables with baseline and final planning scenarios. |
| | Information or changes required | The company should present a full set of data for its revised plan, including completion of the WRP tables. |
| | **Our response** | **Our revised dWRMP will present a full set of WRP tables.** |
| | Summary of any change to our revised dWRMP | N/A |
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| R1.5 | Area of Issue | Supply demand balance – transfer volumes, water available for use and deficits |
| | Issues and evidence | The company's planning tables indicate that it seems to try to get as close a supply demand balance as possible, rather than having a positive balance. This is often achieved through intra water company transfers between water resource zones and adjustments to water available for use of sources. This means that surpluses and deficits are difficult to identify and the company has a number of small unresolved deficits in its final planning scenario in a number of water resource zones. |
| | Implications | The plan does not reflect the true surplus or deficit in each zone or reconcile with capacity of transfer options. The plan will not solve all deficits in all zones. |

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| | Information or changes required | Affinity Water should ensure the supply demand balance for each water resource zone accurately reflects the availability of water from transfers and sources of supply and reconciles with the capacity of transfer options in table 5 and 6 of the WRP tables.<br><br>The company should ensure that its final plan scenario tables do not have any unresolved deficits. |
| | **Our response** | **Following submission of the draft plan Water Resources Planning (WRP) Tables, we have discussed this issue with the Environment Agency and believe both parties understand it will be addressed going forwards.** |
| | Summary of any change to our revised dWRMP | WRP Tables will be completed for the revised dWRMP and will present any unresolved deficits and surpluses in a clear and transparent way. |
| **Recommendation 2: Invest to provide customers with a higher level of resilience that does not damage the environment** | | |
| R2.1 | Area of Issue | Reliance on options that pose a high environmental risk to provide resilience to drought |
| | Issues and evidence | The alternative plan (after 2024) avoids the use of potentially environmentally damaging supply-side drought options until a severe drought of 1 in 200 return period, but does so by also employing options that present significant environmental concern – see Table 3.<br><br>The preferred plan accepts the use of drought permits to provide resilience for droughts of a severity between the worst historic and a 1 in 200-year event. It also relies on additional options that present a significant environmental concern. See Table 3. |
| | Implications | The company is relying on options that carry a high risk of failure and pose a significant risk to the environment to provide resilience. |
| | Information or changes required | The company should develop a revised plan that does not rely on options that pose a significant risk to the environment, including drought options, to improve resilience.<br><br>The company should develop a set of long term strategic options working with neighbouring companies that provide resilience that is sustainable in the long term.<br><br>The company's preferred options must not risk causing deterioration of water body status or compromise other Water Framework Directive objectives. |
| | **Our response** | **We have removed all the new chalk groundwater options in our Central region identified as having risks in Table 3 of the Environment Agency's representations.**<br><br>**We have worked with neighbouring water companies to develop a set of long term strategic options which look to provide sustainable, long term resilience. However, in the near-term, we recognise that we cannot meet a 1 in 200 level of service (LoS) without the use of drought options and permits until the benefits of investments can be realised. We will meet a 1 in 200 LoS by 2024.**<br><br>**Ref: R4.1** |
| | Summary of any change to our revised dWRMP | Increasing drought resilience beyond a 1 in 200-year drought at a future point after 2024.<br><br>Removal of new chalk groundwater options in our Central region. |
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| R2.2 | Area of Issue | R2.2 Minimising environmental impact of drought permit use |
| | Issues and evidence | Drought options have been assessed in the Strategic Environment Assessment (SEA). Differences between them are found in terms of their potential negative impacts, but it is not clear how this assessment relates to the company's drought plan commitment to sequence the use of drought permits so that the least environmentally damaging permits are used first. |

| 9. Environment Agency | | |
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| | Implications | The company has not selected the most environmentally sustainable set of preferred options.<br><br>Use of drought permits should be minimised and should be implemented to minimise potential environmental impacts, consistent with the company's drought plan. |
| | Information or changes required | The company should clearly set out how the use of drought options relates to the company's commitment in its drought plan to use the least environmentally damaging permits first.<br><br>The company's options assessment and SEA should reflect the relative environmental impact of drought options and explain how this has influenced the selection and sequencing of options to ensure that impacts to the environment are minimised. |
| | **Our response** | **The Economics of Balancing Supply and Demand (EBSD) model will select options, including drought permits, in zones where deficits occur. This means that the sequencing of drought permits, which is based on the expected severity of environmental impacts, may differ should a deficit occur in a different zone.**<br><br>**In any case, the use of drought permits will end in 2024 under a 1 in 200-year drought as a result of the SUND water conditioning scheme, which will enable us to use our full statutory entitlement from ANGL.** |
| | Summary of any change to our revised dWRMP | Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024. |
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| R2.3 | Area of Issue | Clarity regarding the use of emergency drought orders |
| | Issues and evidence | In the preferred plan (main report, table 12), the company differentiates between the use of emergency drought orders for two drought severities: a drought more severe than the Worst Historic Drought; and for a severe drought (1 in 200-years). This suggests that there is a split in the actions to be taken under emergency drought orders, depending on the drought severity. The actions that the company would take in these two circumstances are not made clear. |
| | Implications | Customers do not have sufficient information to understand the restrictions that the company plans to introduce. |
| | Information or changes required | The company should clarify the level of service and demand savings associated with emergency drought orders.<br><br>The company should set out what are the actions proposed under 'restrictions in essential use', and how this enables security of supply to be maintained without resorting to rota cuts. |
| | **Our response** | **The use of supply-side drought permits and drought orders will end in 2024 under a 1 in 200 year drought as a result of the SUND water conditioning scheme, which will enable us to use our full statutory entitlement from ANGL. We will also increase drought resilience beyond a 1 in 200-year drought at a future point after 2024.**<br><br>**This will be presented more clearly in our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | We will amend this in the revised dWRMP to ensure consistency with our Drought Management Plan.<br><br>We will increase drought resilience beyond a 1 in 200-year drought at a future point after 2024. |
| **Recommendation 3: Ensure that the plan protects the environment by delivering the Water Industry National Environment Programme** | | |
| R3.1 | Area of Issue | The preferred plan does not include sustainability changes required to meet River Basin Management Plan (RBMP) objectives. |
| | Issues and evidence | The preferred plan does not include green and amber schemes as set out in Water Industry National Environment Programme (WINEP). |

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| | | The alternative plan delivers the minimum requirements for sustainability reductions.<br><br>The Environment Agency recognise that recent changes in the deployable output assessment of sources may necessitate a review of the magnitude of sustainability changes. Further assessment and discussion between the Environment Agency and Affinity Water will be needed to resolve this issue. However, changes in deployable output must not affect the achievement of RBMP targets. |
| | Implications | The preferred plan does not include reductions in abstraction needed to protect and improve the environment.<br><br>Failing to account for sustainability changes in the supply-demand balance risks presenting customers with an inaccurate view of the investment required to protect the environment. |
| | Information or changes required | The company must produce a plan that reflects the full requirements of the latest version of the WINEP. |
| | **Our response** | **In the dWRMP we adopted an evidence based approach derived from the knowledge gained through our Water Industry National Environment Programme (WINEP) investigations in AMP5 (2010-15) and AMP6 (2015-20). Based on these, the 10 Ml/d sustainability reduction volume selected in the draft Preferred Plan would have a direct benefit to the environment.**<br><br>**Following discussions with the EA we have agreed to adopt the full volume of 36.31 Ml/d identified by the EA in our revised dWRMP whilst allowing for continuous monitoring to identify the benefit achieved.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
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| R3.2 | Area of Issue | Morphology actions in the alternative plan |
| | Issues and evidence | The cost and option information presented for the alternative plan shows a lower level of funding for morphology actions than in the preferred plan.<br><br>The agreed sustainability changes included in the Water Industry Environment Programme are designed to work in conjunction with morphological actions to achieve good<br>ecological status. |
| | Implications | Without actions to improve morphology, good ecological status is unlikely to be achieved and further reductions in abstraction may be required.<br><br>Although the company has adequately incorporated sustainability changes into the alternative plan, it has failed to account for the full suite of actions it is required to deliver as RBMP objectives. |
| | Information or changes required | The company must ensure its plan includes the full suite of actions required to deliver RBMP objectives. This must include required reductions to abstraction and complementary river and habitats enhancement measures needed to achieve good ecological status. |
| | **Our response** | **Ongoing discussions with the Environment Agency area offices have helped us clarify the reaches of rivers where work is required and confirmed the lengths of river that would benefit from such work.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>In the revised dWRMP we will use the morphological actions as described in our Business Plan to ensure consistency. |
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| 9. Environment Agency | | |
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| R3.3 | Area of Issue | Delivery mechanisms and timing of sustainability changes |
| | Issues and evidence | The Misbourne sustainability changes are noted in the plan to be delayed to AMP8. This is not acceptable.<br><br>The plan proposes to include this source in the abstraction incentive mechanism (AIM) process. This is not appropriate as alternative solutions to delivering the required sustainability, but could form part of a short-term solution ahead of the formal licence change in 2024. |
| | Implications | Delayed delivery of these sustainability changes risks failure to achieve RBMP objectives. |
| | Information or changes required | The timing and mechanisms for delivery of the Misbourne sustainability changes should be corrected. AIM should not be considered as an alternative to delivering the WINEP, but could form part of an interim solution during AMP7. |
| | **Our response** | **We have had discussions with the local Environment Agency team to agree a way forward.** |
| | Summary of any change to our revised dWRMP | The CHAL sustainability reductions volume will be moved to AMER instead, for implementation in 2024 in the revised dWRMP. Consequently, CHAL source will be removed from the AIM list but AMER will remain in it, as has been the case since 2016. The AIM baseline for AMER source will be revised based on the AMP6 post sustainability reductions volumes at average. |
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| R3.4 | R3.4 | R3.4 Implementation dates of sustainability changes |
| | Issues and evidence | The plan proposes 31 March 2025 as the implementation date for sustainability changes. This is incorrect. The required delivery data is 22 December 2024. |
| | Implications | The plan does not reflect the correct timing for implementation of sustainability changes. |
| | Information or changes required | The company should update the plan to reflect the correct deadline for delivery of sustainability changes. |
| | **Our response** | **We will update the revised dWRMP to reflect the correct deadline for delivery of sustainability changes.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
| **Recommendation 4: Seek new strategic options by developing new shared resources with neighbouring companies** | | |
| R4.1 | Area of Issue | New shared resources with neighbouring companies |
| | Issues and evidence | Affinity Water may need new additional water from either Anglian Water, Thames Water, or both. This need is highlighted in the Water Resources South East (WRSE) and Water Resources East (WRE) strategies.<br><br>The timings and volumes of water are not consistent between the companies' plans and it is unclear how the company's need for shared resources and new transfers aligns with WRSE and WRE.<br><br>We note Anglian Water has included an allowance for a new export of water to Affinity Water in its adaptive plan, but this is not required in either Affinity's preferred or alternative planning scenarios. |

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| | Implications | There is uncertainty over the timing and volume of when a significant additional import (or imports) is required. This presents a risk to Affinity Water's supply demand balance and increases the uncertainty in neighbouring companies' plans.<br><br>If new transfers or shared resources are required, these will take time to develop and implement. All three companies need to ensure they are progressing the options needed to secure supplies and improve resilience in their own and in neighbouring supply areas. |
| | Information or changes required | The company should develop a set of long term strategic options working with neighbouring companies that provide resilience that is sustainable in the long term.<br><br>Transfers and shared resources must be consistently presented between plans, including timings and volumes.<br><br>We support the joint work of the WRSE and WRE groups to ensure water supplies in the South East and East are secure and resilient. We would expect Affinity Water to use the outcomes of the work of these groups to fully inform its preferred plan. |
| | **Our response** | **We have developed a set of options that can provide resilience that is sustainable in the long term. We are continuing to improve our understanding of these long term strategic options, through our work with neighbouring companies and third parties. We have presented our interim work on these options to the Environment Agency (EA) as part of our ongoing WRMP consultation with the EA. We will report our understanding of the potential costs, risks and uncertainties relating to these options in revised dWRMP submission.**<br><br>**We have undertaken further work with neighbouring companies since the dWRMP submission to improve any inconsistencies. We will continue to make efforts to reduce and remove such inconsistencies in the future.**<br><br>**We continue our commitment to two regional groups, Water Resources South East (WRSE) and Water Resources East, long term planning. Our revised dWRMP will be informed by the next phase of WRSE modelling (Phase 4).**<br><br>**Our revised dWRMP will clearly set out our proposals for a set of long term strategic options that provide resilience that is sustainable in the long term and will include an updated comparison of our revised dWRMP with any new regional outputs received since our dWRMP submission.**<br><br>**Ref: R2.1** |
| | Summary of any change to our revised dWRMP | Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this "Supply 2040".<br><br>We will ensure that our intercompany transfers utilisation and timings are consistent. |
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| R4.2 | Area of Issue | Anglian Water imports and shared resources |
| | Issues and evidence | The company has presented a reverse trade with Anglian Water by reducing the amount of water it needs from an existing import from Anglian Water. This allows Anglian Water to keep more water in its supply area. The trade is presented in both Affinity's preferred and alternative plan scenarios. See also Recommendation 6.<br><br>There are discrepancies in the timing and volume of this import between Anglian Water and Affinity Water's plans.<br><br>Affinity Water may require more water more quickly. There are also differences in the way in which uncertainty in this transfer has been considered.<br><br>There are some minor discrepancies between recipient and donor water companies including timing of change of amended share of Ardleigh reservoir with Affinity Water.<br><br>It is also expected that future deployable output estimates will also change with new levels of service proposed by Anglian Water in its plan and Affinity Water in its alternative plan. |

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| | Implications | The implication of donor and recipient transfers being inconsistent may lead to over or under estimation of water available for use.<br><br>This uncertainty presents a risk to both Anglian Water's and Affinity Water's supply demand balance if Affinity Water requires more water or requires it more quickly than currently assumed in both plans. |
| | Information or changes required | Affinity Water should work closely with Anglian Water to ensure that planning assumptions reliant on neighbouring companies are valid. See also Recommendations 1, 2 and 6 |
| | **Our response** | **Affinity Water offered an option to Anglian Water to make use of a proportion of our statutory entitlement that we are currently unable to use because of issues regarding differences in chemical qualities of surface and groundwater that prevents us from supplying it freely within our supply area. We intend to install a conditioning treatment at SUND that will allow us to use our full statutory entitlement from 2024 onwards. The offer was made when we did not expect to use our statutory entitlement until a later date.**<br><br>**The three companies (Affinity Water, Anglian Water and Thames Water) have since met with Defra and the Environment Agency and have discussed this option. We now believe that any misinterpretation of the option has since been resolved. We have continued to work closely with Anglian Water who have since declined the opportunity to take up the option as Affinity Water have now brought forward the scheme at SUND which meant the timing would no longer be favourable.** |
| | Summary of any change to our revised dWRMP | N/A. |
| | | |
| R4.3 | Area of Issue | Sustainability and risks of increased abstraction linked to the Upper Thames Resource Development (UTRD) |
| | Issues and evidence | The company describes the dependencies on Thames Water's plan and the UTRD in section 14.5.1.7 of the main report. The company has identified options that are reliant on new abstractions from the River Thames (up to 100 Ml/d in the alternative plan). The abstraction is assumed to be supported thanks to regional solutions which depend on other water companies in the South East.<br><br>The option is considered in the company's SEA, but mitigation depends on compensatory flows made possible by the UTRD. The preliminary Water Framework Directive assessment identified that the new / increased abstractions could cause deterioration in status in the River Thames. It states that the increased abstraction will require Thames Water to instigate a scheme to provide compensation flows, dependent on the UTRD.<br><br>The headroom assessment noted uncertainty in bulk imports, and the options report (Technical Report 4.6) notes a 20% uncertainty in water available for use for the options associated with new abstraction from the Thames.<br><br>This assessment of uncertainty does not reflect the potential scenario that the UTRD may not be developed. In this case Affinity Water would have a significant deficit later in its planning period and would need to develop alternative strategic options. |
| | Implications | In the event that the UTRD is not progressed, the company would lose the significant benefit provided by development, including providing mitigation for Affinity Water's proposed new abstraction from the River Thames.<br><br>The company does not present a scenario for what it would do if the UTRD is not progressed. |

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| | Information or changes required | The company should confirm with Thames Water that its plan reflects the needs of Affinity Water.<br><br>Any new abstraction from the River Thames must be sustainable. Thames Water and Affinity Water should ensure that their plans both demonstrate how they have assessed the sustainability of a new supported abstraction, or other shared resources, and that appropriate mitigation measures will be in place to manage any risks.<br><br>Affinity Water should ensure that the plan has appropriately accounted for the level of uncertainty, and the significance of this on the supply demand balance, for supply options dependent on the UTRD.<br><br>Affinity Water should consider alternative options, including whether it needs additional water from Anglian Water if there is uncertainty about the deliverability of the UTRD or the sustainability of a new abstraction from the River Thames. |
| | **Our response** | **Affinity Water and Thames Water are working together to make sure that both plans reflect consistently the needs of Affinity Water where shared schemes exist.**<br><br>**Should the South East Strategic Reservoir scheme planning progress, it is understood that the abstraction from the River Thames will be on the basis that it will use a winter flow/high flow abstraction licence and there would be a flow constraint to protect the river.**<br><br>**We are assessing the need for and suitability of the Reservoir. We are also carefully considering the alternatives to the South East Strategic Reservoir in the form of other strategic imports.**<br><br>**We will present what the plan might look like should the South East Strategic Reservoir option or alternative import schemes not be available through 'what if' analysis and modelling.** |
| | Summary of any change to our revised dWRMP | Affinity Water are considering alternative options to the South East Strategic Reservoir. the work to support the assessment of alternatives will be more transparent in the revised dWRMP. |
| **Recommendation 5: Consults on a new plan that is clear to customers on its future strategy** | | |
| R5.1 | Area of Issue | Customer engagement and preferences |
| | Issues and evidence | The manner in which the plan is presented suggests that insufficient customer engagement and consideration of customer preferences has taken place in the decision-making process. |
| | Implications | Customers may not have been fully engaged in the development of the preferred plan and alternative plan.<br><br>The level of information presented is insufficient to allow customers to determine whether the preferred plan and alternative plan reflect their preferences. |
| | Information or changes required | The company should produce a revised plan that clearly demonstrate how customer engagement and preferences have influenced the development of the plan.<br><br>We expect Affinity Water to consult its customers again and to clarify its proposals to enhance resilience to droughts and non-drought hazards and ensure the environment is not put at risk. |
| | **Our response** | **We will produce a revised dWRMP in which the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account.**<br>**We will further consult customers on the revised dWRMP to clarify our new proposals to enhance resilience to droughts and non-drought hazards and ensure the environment is not put at risk.**<br><br>**As per R1.1, the comments referring to our dWRMP consultation document do not** |

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| | | **take into account the other consultation methods with customers and stakeholders that were utilised for the dWRMP.** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process.<br>The revised dWRMP will be presented for further consultation in Spring 2019. |
| | | |
| R5.2 | Area of Issue | Options selection fails to reflect customer views |
| | Issues and evidence | Groundwater supply options play a significant role in meeting deficits in both the preferred plan and alternative plan despite frequent reference in technical report 4.6 to the fact the WRMP 2014 customer surveys indicated that groundwater abstraction is not preferred by customers. |
| | Implications | The company risk presenting a preferred plan and alternative plan that are contrary to customer views on the selection of options. |
| | Information or changes required | The company should take account of customer preferences in its selection and justification for its choice of preferred options. |
| | **Our response** | **We will produce a revised dWRMP in which the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account.** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
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| R5.3 | Area of Issue | Considering customer preferences as part of Multi-Criteria Assessment (MCA) |
| | Issues and evidence | The company has used the following criteria for the purpose of shortlisting of portfolios in its MCA: cost, environmental impacts (positive and negative), deliverability, uncertainty on cost and uncertainty on yield. A measure for customer preferences could have been incorporated at this stage. |
| | Implications | The option appraisal process would have benefited from a more comprehensive set of criteria, including customer preferences, following the supporting guidance. |
| | Information or changes required | The company should consider additional criteria in MCA to better demonstrate how customer preferences have influenced the selection of options. |
| | **Our response** | **We have considered including a customer preference metric in our Multi-Criteria Assessment (MCA) and based on the information we have we do not believe it will be an effective mechanism to reflect customer preference.**<br><br>**We will produce a revised dWRMP in which the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account.**<br><br>**Ref: R6.2 and R7.5** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
| **Recommendation 6: Ensure that the resilience benefits of strategic options with neighbouring companies are fully considered in the option selection** | | |
| R6.1 | Area of Issue | Delayed investment in key resilience-enhancing options |

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| | Issues and evidence | As an enabling option, investment in a new treatment works is required to ensure it can make full use of its existing bulk import from Anglian Water. Without this option early in the planning period, there is a risk of failure to meet obligations under the River Ver section 20 operating agreement and an impact on the company's resilience to drought and non-drought events. See also Recommendation 4. |
| | Implications | Delayed investment in new treatment poses a risk of failure to meet the River Ver section 20 operating agreement and inhibits the company's ability to deliver agreed sustainability reductions.<br><br>It also means the company delays or is unable to improve its resilience to severe droughts, and will continue to rely on drought permits that risk damaging the environment to avoid rota cuts and standpipes, for events less severe than 1 in 200 years.<br><br>It also reduces the options that the company has to use water from alternative sources of supply and to improve resilience to non-drought events, such as freeze thaw and pollution. |
| | Information or changes required | The company should set out the consequences of its decision to delay investment in new treatment and how this contrasts with the Government's request to explore options to improve resilience to drought and non-drought events, including freeze-thaw. |
| | **Our response** | **The revised dWRMP will include 2024as the delivery date for conditioning treatment at SUND, which is the earliest possible delivery date.** |
| | Summary of any change to our revised dWRMP | The revised dWRMP will include 2024 as the earliest possible date for the SUND option. |
| | | |
| R6.2 | Area of Issue | Reflecting the associated benefits of investment in strategic options within the options screening process |
| | Issues and evidence | The company has used the following criteria for the purpose of shortlisting of portfolios in its MCA: cost, environmental impacts (positive and negative), deliverability, uncertainty on cost and uncertainty on yield. A measure of the resilience of options could have been incorporated at this stage.<br><br>Furthermore, the positive impacts enabled by certain strategic options have not been included during the option screening process. For example, the benefits from supporting the delivery of the Water Industry National Environment Programme and reduced dependency on sources that present known risks, or improved resilience to non-drought hazards. |
| | Implications | The company fails to reflect the benefits of delivering environmental improvements that early investment in strategic options enables. |
| | Information or changes required | The company should revise its options screening and decision-making process to reflect the benefits of resilience-enhancing measures. This could be achieved through the use of additional criteria within the MCA, for example, resilience to non- drought hazards. |
| | **Our response** | **Affinity Water are working on a revised decision-making process which incorporates aspects such as resilience as quantifiable metrics supported by technical work. We have shared our ongoing work on this aspect of our plan with the Environment Agency, and will report more fully on this work in our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Additional criteria will be used, such as a resilience metric, and a transparent process for promoting resilience enhancing measures will be reported in the revised dWRMP. |
| | | |
| R6.3 | Area of Issue | Resilience to non-drought events |
| | Issues and evidence | The company broadly describes its approach to resilience in chapter 7 of the main plan. Several non-drought hazards are noted to be outside of the scope of the WRMP19. However, freeze-thaw is not mentioned here. Nor is it mentioned in the context of the company's critical period assessment. |

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| | Implications | The company has not assessed the resilience of its plan to periods of high demand caused by non-drought hazards. |
| | Information or changes required | The company should further consider the impact of non- drought hazards on the supply demand balance. Specifically freeze-thaw effects. |
| | **Our response** | **There are additional resilience schemes included in our Business Plan that twin existing assets, increase pumping capacity (to alleviate constraints) and open network connectivity to allow movement of water from trapped areas to areas of need, some of these are non-drought operational resilience schemes.**<br><br>**Freeze - thaw is an emergency planning issue for Affinity Water. It was experienced only locally in North West London where some network issues prevailed. Those network issues are planned for investment which will remove the risk in those areas.**<br><br>**The Business Plan is comprehensively addressing resilience, this includes our plans for "Supply 2040". Within those plans Affinity Water will address network constraints and present twinning schemes, to provide further enhance operational resilience in the event of a burst.**<br><br>**Although Ofwat's overall assessment was that we largely met our customers' expectations, they did consider that there were gaps and room for improvement. Lessons learnt from the freeze-thaw event in managing our resources in extreme demand conditions were demonstrated during the exceptionally dry and hot summer recently experienced where there were no widespread loss of supplies to customers.**<br><br>**We had one specific area which suffered water loss over an extended period due to a strategic pipeline being out of service for repair. Although we have since made this zone more resilient with the introduction of an alternative controlled supply the lessons learnt during the freeze-thaw in dealing with our customers, especially those who are more vulnerable, during such an event are now incorporated in our emergency planning procedures. This includes the provision of alternative water during the period of supply shortage. The issue of the significant increase in customer side leakage and the impact on the overall supply position is now recognised and a direct communication strategy to both household and non-household (retail) customers is now improved and will be articulated in the revised dWRMP.** |
| | Summary of any change to our revised dWRMP | No change – this is addressed through investments included in our Business Plan and through our emergency planning. |
| **Recommendation 7: Promote options that deliver a resilient plan and do not risk damaging the environment** | | |
| R7.1 | Area of Issue | The company has selected options that pose a significant risk to the environment |
| | Issues and evidence | We expect the company to deliver its environmental obligations as set out in the Water Industry National Environment Programme. This includes its obligations to support delivery of pathway to good schemes and the separate obligation to ensure its operations do not cause deterioration in the status of surface water and groundwater bodies.<br><br>The company has selected options that are known to pose a significant risk to the environment or where the SEA has raised uncertainty regarding their delivery subject to detailed environmental assessment (as detailed in options screening report section 4.5, SEA report section 4.11 and WFD report section 4.13). See Table 3 for more information.<br><br>The decision-making process does present an opportunity to define an acceptable level of negative impact for portfolios of options. However, applying a filter for environmental risk at this stage is too late if the portfolios all contain options that have unacceptable environmental impacts because they have been allowed to pass through option screening to become feasible options.<br><br>The SEA report section 4.11 describes the negative effects of a number of options that have been allowed to pass through screening to become feasible options, and ultimately form part of the preferred plan and alternative plan. |

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| | Implications | The option screening and SEA process has not informed the decision- making process in a way that secures protection of the environment.<br><br>The company's decision making appears dominated by cost considerations and this overrides environmental concerns. This means the plan carries a high risk of failure because some preferred options are unlikely to gain regulatory approval. |
| | Information or changes required | The company should develop a portfolio of options that does not pose an unacceptable threat to the environment and takes account of the likelihood of the options gaining regulatory approval.<br><br>The company should review the outputs of the SEA and options screening and review which options are feasible.<br><br>The company should confirm that options that involve an increase in abstraction above recent actual rates will not cause deterioration in water body status. If it does risk causing deterioration, the option should be excluded from the preferred portfolio.<br><br>Reference should be made to Table 3 below for further details of options that present a high environmental risk. |
| | **Our response** | **We believe our options screening process was compliant with the Environment Agency Guideline. We deem all constrained options to be feasible as they have passed through our option screening process.**<br><br>**We have, nevertheless, committed to removing all new chalk groundwater options from our revised dWRMP in our Central region.** |
| | Summary of any change to our revised dWRMP | There will be no new groundwater from chalk aquifers in our Central region. |
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| R7.2 | Area of Issue | Use of the decision-making process to screen out environmentally damaging portfolios |
| | Issues and evidence | The company has not provided sufficient transparency about how measures of environmental sustainability and resilience have informed the decision-making process, specifically through the company's MCA. This process has not resulted in the selection of options and portfolios that minimise risk to the environment or enhance resilience to drought and non-drought hazards. |
| | Implications | The MCA has failed to account for the limitations of the options screening process in that the portfolios selected include options with a high degree of uncertainty and unacceptable environment impact. |
| | Information of changes required | The company should clarify how the MCA has influenced the plan and helped to minimise impacts on the environment. |
| | **Our Response** | **A revised decision-making process with transparent Multi Criteria Assessment (MCA) will help to provide further clarity in our revised dWRMP by developing** |

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| | | **scores at option level that can be used for portfolio level analysis.** |
| | Summary of any change to our revised dWRMP | The revised MCA will show how the revised dWRMP has helped to minimise the impact on the environment and has promoted the resilience enhancing options. |
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| R7.3 | Area of Issue | Risk to the environment caused by increasing abstraction in water resource zone 8 |
| | Issues and evidence | The company is planning to increase abstraction from existing sources to meet rising demand in resource zone 8. The company reports the zone has a surplus and has not completed options appraisal.<br><br>Abstraction at a number of the company's groundwater sources in this zone have been highlighted in the Water Industry National Environment Programme as presenting a potential risk to the environment. Planned increases in abstraction could cause deterioration in water body status and failure of RBMP objectives. |
| | Implications | The company's plan to increase abstraction in water resource zone 8 presents a significant risk to the environment. |
| | Information or changes required | The company should ensure that its plan does not risk causing deterioration in water body status. It should ensure that there are alternative, sustainable solutions in place to meet demand.<br><br>The company should consider undertaking an options appraisal for water resource zone 8 to help identify a best value solution. |
| | **Our response** | **All our groundwater sources in Water Resource Zone (WRZ) 8 are already maximised up to their annual licence limits hence there is no further headroom available. As such our draft WRMP does not include any increase in groundwater abstraction in WRZ8 and the no deterioration assessment would not apply here.**<br><br>**The Ardleigh Reservoir is co-owned 50:50 with Anglian Water but at present is utilised at a 70:30 split with 30% assigned to us. From this 30% available to us approximately half is currently utilised so our plan was to utilise the full 30% volume to meet rising demand. This does not affect the quantity of water abstracted into the Reservoir and therefore the no deterioration assessment does not apply.**<br><br>**However, since the Environment Agency (EA) informed us of the requirement to carry out an investigation and Options Appraisal in AMP7 (2020-25), some of our groundwater sources are now at risk for sustainability reductions in AMP7.**<br><br>**The volume identified in the WINEP 3 tables was 2.6 Ml/d at this stage. The EA has, however, stated in correspondence that sustainability change of up to 20 Ml/day may be required and that although this is not included within WINEP3 we should nevertheless be prepared to implement such a sustainability change by 2024 unless it is technically infeasible. Our Business Plan includes a mechanism to provide funding for investment to deliver this sustainability change should it be required.**<br><br>**The EA has agreed that we do not need to include these further potential sustainability changes in our revised dWRMP at this stage. If the conclusion of the investigation is that these are required then an options appraisal will be completed by 2024 and we would include it in WRMP24.**<br><br>**We will model the East region in our Economics of Balancing Supply and Demand (EBSD) work and will include demand management options to ensure that per capita consumption and leakage do not rise in the long-term.** |
| | Summary of any change to our revised dWRMP | Inclusion of EBSD modelling of our East region and application of demand management options. |
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| R7.4 | Area of Issue | Target headroom assessment |

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| | Issues and evidence | The company has not adequately assessed the uncertainty in its alternative plan through target headroom assessment. The headroom assessment report section 3.2 only reviews the "final plan" which is assumed to be the final plan represented in the planning tables (the preferred plan).<br><br>The company states (main plan section 10.1.3) that the target headroom risk profile would be adjusted for less risk if the plan was based on a 1 in 200-year drought event, drought, the risk profile should be altered. rather than the worst historic drought. As the alternative plan is based on resilience to a 1 in 200-year |
| | Implications | Without a thorough assessment of uncertainty for both the preferred plan and the alternative plan the risks associated with both plans cannot be fully understood. |
| | Information or changes required | The company should complete a full assessment of target headroom for its planning scenarios and show how this affects the supply-demand deficit and choice of options. |
| | **Our response** | **We are undertaking a full target headroom assessment for our revised baseline position and our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Inclusion of full target headroom assessment for our revised baseline position and our revised dWRMP. |
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| R7.5 | Area of Issue | R7.5 Development of planning scenarios |
| | Issues and evidence | The method used to justify the selection of scenarios leading to the development of 163 portfolios is unclear. While a large number of permutations were produced by combining different scenario criteria, the approach and the way in which these scenarios were subsequently shortlisted is not adequately explained. Insufficient information is provided in both the technical report and main plan report to demonstrate how shortlisting was undertaken, or why certain decisions were taken. |
| | Implications | Although a large number of permutations and alternative levels of service have been considered, the process is not transparent. There appears to have been limited customer engagement to inform the decision- making process. |
| | Information or changes required | The company should re-evaluate and provide further explanation of its decision-making process, specifically the methodology used to characterise and shortlist scenarios.<br><br>The company should show how customer preferences and environmental considerations have been used to identify and shortlist portfolios of options. |
| | **Our response** | **We will be presenting a revised decision-making process that provides additional transparency and will re-evaluate the choice of options in the revised dWRMP.**<br><br>**We will produce a revised dWRMP in which the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account.**<br><br>**Ref: Ref: R6.2 and R7.5** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
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| R7.6 | Area of Issue | Portfolio shortlisting and scenario testing |
| | Issues and evidence | The company's approach to developing portfolios and the scenarios they seek to address (apparently simultaneously shortlisting portfolios and scenarios), has led to a number of potentially more resilient portfolios or more appropriate scenarios being excluded. As these are excluded, the Infogap analysis fails to demonstrate that the plans developed are the best performing plans. |

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| | Implications | The company's approach may have led to the adoption of relatively poorly performing portfolios of options that result in poor resilience and unacceptable risks to the environment and customers. |
| | Information or changes required | The company should separate scenario testing from portfolio shortlisting to ensure that the highest performing portfolios are identified and tested. |
| | **Our response** | **The revised decision-making framework will provide more clarity and explain better our approach.** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
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| R7.7 | Area of Issue | Resilience of shortlisted portfolios |
| | Issues and evidence | The shortlisting of portfolios is potentially flawed and the graphical depiction of stress testing of options is not clear.<br><br>There is insufficient information presented in the plan to understand why certain portfolios were progressed and others rejected.<br><br>Although high distribution input scenarios were identified using MCA, these were subsequently excluded in the shortlist of portfolios. It is not possible to ascertain why or how the company reduced the number of portfolios to 11 and how the preferred portfolios for consultation were selected. |
| | Implications | It is not possible to determine whether the shortlisted portfolios reflect least cost or best value, as insufficient information is provided to confirm this. |
| | Information or changes required | The shortlisting process is flawed and requires a number of amendments to ensure bias has not negatively impacted the shortlisting of portfolios or scenarios.<br><br>The methodology and supporting rationale leading to the shortlisting of portfolios needs to be reviewed and updated.<br><br>Graphical results should be reproduced using alternative plots which show differences between portfolios. Further explanation is required to understand why certain portfolios were progressed and how these will result in a resilient plan that protects the environment. |
| | **Our response** | **The shortlisting process will be updated and linked to the wider decision-making process. Resilience will be explored at both portfolio and option level to ensure we show differences between portfolios.** |
| | Summary of any change to our revised dWRMP | N/A |
| **Recommendation 8: Include the latest population and property forecasts from Local Plans** | | |
| R8.1 | Area of Issue | Accounting for planned growth |

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| | Issues and evidence | The company has chosen to develop its forecasts on local authority plan- based trends. This is the lowest of 4 scenarios available to them. These plan-based forecasts have been adjusted based on recent billing data which results in lower household numbers than the original plan-based forecast. The adjusted figures have a lower forecast than the original in each year until 2045. The company has not examined how it would respond if the unadjusted original forecasts (that more directly relate to local authority plans) were realised.<br><br>Since submission of the draft WRMP to Defra, the Greater London Authority's London Plan has been published. The property figures have been revised upwards and could result in additional properties affecting Affinity Water's Central water resource zones.<br><br>The company also note that population forecasts are likely to be reviewed (section 2.13.6 of the main plan) following a recent indication from central government that local authorities will need to use an updated method for calculating housing need. Affinity Water believe this is likely to lead to an increase in the housing projections.<br><br>While component D2 in the target headroom analysis represents a significant proportion of headroom across the company, uncertainty in the population scenario used is not explicitly dealt with in the assessment. |
| | Implications | There is a risk of underestimating demand and a further risk that the WRMP may constrain the growth planned by local authorities. |
| | Information or changes required | The company should update the plan with the latest Local Plan figures and consider the implications for the company's population and demand forecasts.<br><br>It should also provide additional justification for selection of the adopted population growth scenario and further information as to how uncertainty in this has been appropriately incorporated into the target headroom assessment.<br><br>The company should complete work it has identified as needed to improve the accuracy of its demand forecast for its revised plan. Additional detail about the required improvements are set out in Improvement 4 below. |
| | **Our response** | **We have improved our population and property forecast following feedback received through the public consultation. We adjusted the way the annual property build rate is applied. At draft plan, we calculated the company level annual build rate and then applied it based on the proportion of additional properties in each Water Resource Zone (WRZ).**<br><br>**We will calculate an annual build rather per WRZ and applied this so that our final property number in each WRZ matches the Experian forecast end point (2044/45).**<br><br>**The rebasing of the Experian forecast against our annual return property number at draft plan saw a reduction in new properties of circa 90,000. We have reviewed this and believe a proportion of these should be included and will adjust the annual build rate to reverse this reduction across the 25 year forecast. This is in recognition that the forecasted build rates in recent years have been too ambitious but the increase is still required to meet long-term demand for housing in our supply area, although it will be delivered later in the plan than originally forecast. The population forecast will then be calculated using the growth trend from the original Experian forecast and matching the Experian zonal end point in 2045.**<br><br>**We will compare our revised property forecast with detailed information gathered from local authority plans to ensure alignment with local authorities plans.**<br><br>**We recognise that since publication of our dWRMP, the Great London Authority's (GLA) London Plan has been published. However, the London Plan is at its draft stage and it is our understanding that the housing targets set in the London Plan will be finalised at the beginning of 2020. For this reason, we will explore GLA property figures in a separate scenario but they will not form part of our baseline assessment.** |

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| | Summary of any change to our revised dWRMP | We have updated our property and population forecasts. |
| **Recommendation 9: The company must carry out a review of its Strategic Environmental Assessment of both the preferred plan and the alternative plan** | | |
| R9.1 | Area of Issue | The alternative plan has not been subject to a full SEA |
| | Issues and evidence | The plan explains that consultation is based on the preferred plan and the alternative plan. However, the revised SEA Environmental Report only considers in detail the preferred plan (chapter 5) and the cumulative effects of the preferred plan (chapter 6).<br><br>Section 4.7 of the SEA Environmental Report indicates the preferred plan was progressed on the basis of cost and deliverability but does not clearly explain and justify why the alternative plan has been discounted for further assessment. |
| | Implications | The final plan could include aspects from the alternative plan and preferred plan. However only the preferred plan has been subject to the full SEA assessment. It is not clear why the alternative plan has not been assessed. This is confusing to customers and risks presenting a plan that has not been subject to SEA and it not compliant with relevant legislation.<br><br>There is concern that significant environmental effects (positive and negative) of the alternative plan and its component options (supply-side and demand-side) have not been appropriately assessed and there is a risk to compliance with the SEA Regulations. |
| | Information or changes required | The company must ensure its preferred options, including under alternative planning scenarios, are subject to a full SEA.<br><br>The company should produce a revised SEA Environment Report that reflects the company's choice of options under its preferred and any adaptive or alternative planning scenarios. The company should re-consult on the SEA alongside a revised version of its draft plan (see Recommendation 1) so that customers are informed about the potential environmental impact of the revised plan and can see how the SEA has been used to influence the plan and to help minimise risks to the environment. See also Recommendations 2 and 7 above. |
| | **Our response** | **We will carry out a full Strategic Environmental Assessment (SEA) of the revised dWRMP which is built upon the previously supported alternative plan.** |
| | Summary of any change to our revised dWRMP | The revised dWRMP will be subject to a full SEA and we will also consult on this revised SEA alongside the revised dWRMP further consultation. |
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| R9.2 | Area of Issue | Cumulative assessment |
| | Issues and evidence | The SEA does not include sufficient information on cumulative assessment and impacts. For example, change within the River Lea catchment could impact water availability downstream linked to existing sustainability change investigations on the Lower Lea. |
| | Implications | Without consideration of downstream impacts, cumulative impacts are not properly assessed. |
| | Information or changes required | The cumulative impact, particularly on downstream water bodies, should be better reflected in the SEA. |
| | **Our response** | **A Strategic Environmental Assessment will be completed for the revised dWRMP, this will include a revised environmental report. This report will contain an assessment of the cumulative effects of selected options. We also have Water Resources South East Phase 4 Cumulative Effects Assessment outputs and will use this information when compiling the environmental report.** |

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| | Summary of any change to our revised dWRMP | A Strategic Environmental Assessment will be completed for the revised dWRMP, this will include a revised environmental report. |
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| R9.3 | Area of Issue | Monitoring measures |
| | Issues and evidence | Section 7.3 of the SEA Environmental Report (monitoring) lists 3 main monitoring measures based on the findings of the SEA. There is no supporting information on which schemes and in which water resource zones the monitoring measures relate to. |
| | Implications | The proposed monitoring measures may not fully reflect the significant environmental effects of implementing the plan. |
| | Information or changes required | The company should provide further information for proposed monitoring measures and ensure this aligns with the environmental risks identified in the assessment. |
| | **Our response** | **At the meeting, we had between Natural England and Affinity Water on the 11th September, we discussed mitigation and monitoring at great length. We agreed that the specific nature of monitoring would be something which is agreed at the option design stage rather than at Strategic Environmental Assessment (SEA) and revised dWRMP level. Where we are able to propose monitoring measures in the SEA these will be included.** |
| | Summary of any change to our revised dWRMP | Preparation of a revised SEA. |
| **Recommendation 10: Ensure the deployable output of the company's 'FRIA' source reflects local licensing conditions** | | |
| R10.1 | Area of Issue | Licence details |
| | Issues and evidence | The FRIA source is governed by a section 20 agreement which specifies that "the undertaker shall seek not to use FRIA source unless the other sources supplying the system are unable to meet the demand for water." The circumstances under which it can be used are limited. |
| | Implications | The company may have overestimated the deployable output available from the FRIA source. This poses a risk to the supply-demand balance. |
| | Information or changes required | The company should review the baseline deployable output to account for licence constraints and conditions, including operating agreements. |
| | **Our response** | **We have been operating our FRIA source under the terms of the S20 agreement and have been doing so at the same deployable output for the last 20+ years. We are continuing the discussions with the local Environment Agency area office.** |
| | Summary of any change to our revised dWRMP | To be confirmed. |
| **Recommendation 11: Be more ambitious by reducing leakage further in both the short and long term** | | |
| R11.1 | Area of Issue | Leakage targets |
| | Issues and evidence | The preferred plan currently has an 11% reduction in leakage by 2024/25. This does not meet the 15% reduction challenge by Ofwat that the government supported in the 25-year environment plan. |

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| | Implications | Managing leakage and water use is a top priority for customers and the government. It is important for delivering a resilient network in the long term and reducing over-abstraction.<br><br>There is a risk that customers and stakeholders will not have confidence that the company is managing its water resources effectively and that any proposed resource developments are needed. |
| | Information or changes required | The company should further explore its proposed leakage levels with its customers and Board to consider whether it can meet a more ambitious target.<br><br>The company should explore how it can use innovative approaches to achieve leakage reductions in line with leading companies and the findings of the recent National Infrastructure Commission report on England's Water Infrastructure Needs. If further leakage reductions cannot be achieved, the company should clearly explain and justify why this is the case.<br><br>Where the proposed level of leakage is changed, the company should show the impact on the supply-demand balance and the options in its revised plan. |
| | **Our response** | **Our revised dWRMP will include a 15% leakage reduction by 2025.**<br><br>**Further to this, it will also include an aim to achieve a 50% leakage reduction by 2050 in line with the findings of the National Infrastructure Commission report.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
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| R11.2 | Area of Issue | Variability of leakage targets between water resource zones |
| | Issues and evidence | The company presents a plan with a large variance in leakage targets between water resource zones.<br><br>The company has not considered options to reduce leakage in all water resource zones. |
| | Implications | It is not clear how leakage reduction at a zonal scale links to the company- wide leakage reduction goals. There is a risk that customer views, or the intention of creating a best value plan have not been taken into account in all water resource zones. |
| | Information or changes required | The company should provide additional justification for any variation in leakage across the company supply area.<br><br>The company should provide additional justification for not assessing a full range of demand management and distribution loss options in all water resource zones. |
| | **Our response** | **Our options appraisal has assessed a full range of demand management and distribution loss options in all water resource zones. In our revised dWRMP we will present a short-term leakage reduction target of 15% in AMP7 (2020-25) and aim to achieve a long-term reduction target of 50% by 2050.**<br><br>**These targets will allow us to select different degrees of leakage reduction in all of our eight Water Resource Zones.** |
| | Summary of any change to our revised dWRMP | We will spread the leakage reduction more evenly across our eight Water Resource Zones from 2025 onwards.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
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| R11.3 | Area of Issue | Baseline leakage forecasts |
| | Issues and evidence | There is an issue in water resource zones 1, 2, and 4 that the new baseline total leakage forecasts are higher than the WRMP 2014 forecasts. |

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| | Implications | This assessment shows that leakage performance is worse than planned for in WRMP 2014. This may have implications for leakage actions in WRMP 2019. |
| | Information or changes required | The company should provide clarification as to the differences in leakage assessment between the previous WRMP and this current draft plan. |
| | **Our response** | **The difference between our latest forecasts and those from 2014 is the incorporation of the new leakage convergence methodology into our base year water balance and change in the prioritisation of different Water Resource Zones and District Metered Areas from our AMP6 (2015-2020) leakage strategy. We will ensure that this is fully explained in the leakage strategy report which will accompany the revised dWRMP.** |
| | Summary of any change to our revised dWRMP | N/A |
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| R11.4 | Area of Issue | Sensitivity to data assumptions |
| | Issues and evidence | The company indicates that certain data sets were not available during the leakage assessment and that it has relied on analytical techniques to resolve this. However, there is a lack of clarity regarding which data was not available. |
| | Implications | It is not possible to fully understand the validity of the leakage models. |
| | Information or changes required | The company should clarify what data is not available and the sensitivity of using industry averages or inferring values. |
| | **Our response** | **Where data sets are not available and we have relied upon analytical techniques, we will identify this and clarify why it is not available and explain our use of industry averages or an alternative.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| R11.5 | Area of Issue | Trunk main and service reservoir leakage |
| | Issues and evidence | The approach used for trunk main and service reservoirs is not included in the overall assessment of leakage (SELL report section 1.2)<br><br>No economic model is in place to assess whether trunk main leakage reduction is more economic than other options in the plan. This raises a question of whether the company has sufficient evidence to develop a best value plan. |
| | Implications | Due to lack of a defined approach for understanding upstream losses, the overall water balance uncertainty and approach to managing risk on these assets is not comparable to other elements of its leakage assessment.<br><br>There is uncertainty as to whether the company has sufficient evidence to develop a best value plan. |
| | Information or changes required | It is recommended that the company undertake an assessment of the level of risk associated with its trunk main and service reservoir network. |
| | **Our response** | **This assessment was included in our Sustainable Economic Level of Leakage report in the draft WRMP. We will provide further detail in the revised dWRMP.** |
| | Summary of any change to our revised dWRMP | N/A |

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**Recommendation 12: Ensure your plan is legally compliant by adhering to the WRMP Directions**

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| R12.1 | Area of Issue | Direction 3(b) Describe the annual average risk of all restrictions as a percentage, and how they change through the planning period |
| | Issues and evidence | The company has not set out how it expects the annual risk of the need to impose prohibitions or restrictions on its customers to change over the course of the planning period as a result of the measures which it has identified through its options appraisal.<br><br>Table 12 (p.77 of main report) provides a useful summary of actions/restrictions alongside return period. However, the annual risk (expressed as a percentage) of the restrictions are not presented. Nor does the company present how it expects this risk to change over the course of the planning period. |
| | Implications | Customers are not able to understand how the risk of restrictions changes through the planning period. |
| | Information or changes required | The company must state how the annual risk of all restrictions will change over the planning period following the implementation of the options set out in its water resources management plan. |
| | **Our response** | **Within our revised dWRMP we will amend Table 12 to ensure the annual risk is presented as a percentage and how we expect this percentage to change in response to the implementation of options selected within the plan.** |
| | Summary of any change to our revised dWRMP | Table 12 to be amended. |
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| R12.2 | Area of Issue | Direction 3(c) Describe the assumptions it has made to determine the annual average risk of all restrictions |
| | Issues and evidence | The company has not described the assumptions or methodology it has used to estimate the annual average risk for temporary use restrictions, ordinary drought orders and emergency drought orders that should be set out as part of Direction 3(b). |
| | Implications | Customers are not able to understand how the risk of restrictions changes through the planning period. |
| | Information or changes required | The company must describe the assumptions it has used to estimate its level of service and the planned annual risk in the planning period of temporary water use restrictions, ordinary drought orders and emergency drought orders under Direction 3(b). |
| | **Our response** | **We shall ensure the current section 4 of our draft WRMP is updated to include an explanation of how our levels of service have been estimated making an explicit link to the work carried out for our Drought Management Plan.** |
| | Summary of any change to our revised dWRMP | As per 'Our response'. |
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| R12.3 | Area of Issue | R12.3 Direction 3(d) Describe the emission of greenhouse gases likely to arise as a result of each measure in its plan |

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| | Issues and evidence | The company has presented in s.15.8.5 (main plan) the company-level carbon emissions associated with baseline activity and the preferred plan. However, it does not present the equivalent information for the alternative plan which the company are also consulting on.<br><br>In addition, while technical report 4.6 gives the greenhouse gas emission costs at the option level for supply options, the information is not displayed in terms of carbon emissions. In order to derive the carbon costs, the company must have determined the carbon emissions. These must be presented for each option.<br><br>Carbon costs for demand options are included within the planning tables. Technical report 4.7 states that carbon costs and savings have been calculated for each feasible option and outlines the method for doing so. However, the actual figures are not present in the report.<br><br>It is also noted that carbon costs in the methods for supply and demand options differ. It is not clear that the demand option costs have been updated to reflect 2018 prices. |
| | Implications | Stakeholders cannot view the carbon implications of the individual feasible options or for the alternative plan as a whole. |
| | Information or changes required | The company must present the carbon emissions associated with both its preferred plan and alternative plan and provide additional information for each of its preferred options of greenhouse gas emissions, rather than just the costs. |
| | **Our response** | **We recognise at draft plan we only included a 'tonnes of Carbon' graph for the Preferred Plan and not the Alternative Plan.** |
| | Summary of any change to our revised dWRMP | We will include this graph in our revised dWRMP. |
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| R12.4 | Area of Issue | Direction 3(e)(i) Describe the assumptions made regarding the implications of climate change, including in relation to the impact on each of its supply and demand measures |
| | | Climate change impacts on deployable output are shown for each water resource zone in Technical report 1.1. The figures are built up from data at the individual source level, but this information is not presented. The “most likely” climate change impact was used within Affinity’s economic model to determine the supply demand balance. The upper and lower range estimates of climate change impacts were used in the headroom assessment (but again, information is presented at the WRZ level).<br><br>The company has not presented the climate change impacts on individual supply options.<br><br>Supply headroom for the final plan scenario has been adjusted using component S9 to account for supply uncertainty. It is not clear how much of this is owing to climate change impact. It is not clear if the impact of climate change on demand options has been accounted for. Demand forecast impacts are included in the micro- component model (Report 2.2) however it is not clear how climate change impact has been assessed for demand options and then taken through to the final plan scenario. The impacts are likely to be minor, but no explicit reference is made as to how climate change impacts have been accounted for or influenced demand option selection. |
| | **Our Response** | This direction was placed on the agenda and discussed at an Affinity Water / Environment Agency meeting in August 2018.<br><br>We proposed to take the climate change uncertainty elements from the headroom assessment and present this data at the option level to satisfy this legal direction (3ei). The uncertainty element associated with climate change on option yields will be included within the WRP tables within headroom, but to satisfy the direction it will be presented as a separate element within the Headroom technical report.<br><br>The Environment Agency acknowledged this work had already been completed, but presentation needs to be improved. |

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| | Summary of any change to our revised dWRMP | We will improve the presentation of the work undertaken in our revised dWRMP. |
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| R12.5 | Area of Issue | Direction 3(f) Describe its metering programme, including costs, approach, implementation and timing of the programme |
| | Issues and evidence | The company has not presented the costs of its metering programme (in isolation). Costs are presented as part of a bundle of actions under the Water Saving Programme.<br>The company's metering programme forms part of the Water Saving Programme (which is a baseline activity). The costs of the Water Saving Programme are set out in the main plan in tables 80-83 for the preferred plan, and tables 97-99 for the alternative plan, but the cost of the metering programme alone are not given.<br><br>It is also not clear whether these costs incorporate the costs of compulsory metering in the Central region as well as optant metering in the South East and East regions. |
| | Implications | The costs of the company's domestic metering programme are not visible. |
| | Information or changes required | The company must disaggregate the costs of its metering programme from its Water Saving Programme and present these. |
| | **Our response** | **We will disaggregate the costs of the metering programme from our wider Water Saving Programme.** |
| | Summary of any change to our revised dWRMP | We will present those costs in isolation in our revised dWRMP. |
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| R12.6 | Area of Issue | Direction 3(h) Describe its assessment of the cost-effectiveness of domestic metering types |
| | Issues and evidence | The company has not set out explicitly the costs and benefits of adopting different metering strategies (e.g. optant, change of occupancy, selective). It should be noted that the company is already a significant way into its baseline compulsory metering programme. |
| | Implications | The company must set out the cost- effectiveness of domestic metering as a mechanism for reducing demand for water by comparison with other measures which it might take to meet its obligations under Part III of the Act. |
| | Information or changes required | The company must provide an assessment of the cost- effectiveness of the following types of metering:<br><br>• Compulsory<br>• Selective<br>• Change of occupier<br>• Optant. |
| | **Our response** | **We will include a cost benefit assessment for household metering types (e.g. Dumb metering, Automatic Meter Reading (AMR), Advanced Metering Infrastructure (AMI)). It should be noted that the company is already a significant way into its baseline universal metering programme to be completed by 2025.** |
| | Summary of any change to our revised dWRMP | We will include a cost benefit assessment for household metering types (e.g. Dumb, AMR, AMI metering). |
| **Table 2: evidence, details and reasons to support improvements suggested in Section 4 of representation** | | |
| **Improvement 1: The company should give further consideration of more ambitions demand management** | | |
| I1.1 | Area of Issue | Forecast rising demand |

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| | Issues and evidence | Only two water resource zones (1 and 2) show long-term reductions in total demand in the preferred plan (zone 2 only just achieves an overall reduction). Other zones with baseline deficits forecast that final plan demand will increase, but at lower rates than in the baseline. |
| | Implications | There is insufficient demand management ambition relative to the issues the company faces. |
| | Information or changes required | The company should provide further justification for not developing a preferred plan that seeks to limit growth in total demand in all water resource zones. |
| | **Our response** | **Following feedback and consultation responses we have opted to adopted our Alternative Plan as the basis for our revised dWRMP. This was more ambitious with its demand management commitments then our draft WRMP Preferred Plan and therefore saw greater reductions in demand. In addition to this we will also include a commitment to reduce Per Capita Consumption (PCC) further in the long term and will aim to meet the recommendation to reduce leakage by 50% reduction by 2050 as set out in the National Infrastructure Commission report.** |
| | Summary of any change to our revised dWRMP | 15% leakage reduction between 2020 and 2025 and aim to achieve a 50% leakage reduction by 2050.<br><br>PCC target of 129 l/h/d by 2025 and aiming towards 110 l/h/d by 2040. |
| | | |
| I1.2 | Area of issue | Ambition in demand management |
| | Issues and evidence | The relatively high level of water savings delivered in AMP7 appear to be largely thanks to continuation of the company's baseline AMP6 water saving programme (which includes completion of compulsory metering).<br><br>Continuation of baseline universal metering in AMP7 and a shift to smart metering from AMP8 onwards demonstrates a good commitment to delivering further savings. However, the company begin the planning period from a relatively high per capita consumption (PCC), and the residual PCC after the metering interventions remains at around 132 l/h/d by 2045. Other companies are proposing greater reductions and this suggests that there is potential to reduce PCC further. |
| | Implications | Despite relatively high savings, and the company starting from a high level of per capita demand, other companies are proposing to deliver lower PCC over the planning period.<br><br>There are many water efficiency strategies that can be enabled with the high levels of metering that the company will achieve. Whilst the company states that it would like to do more, it is possible that it has missed opportunities to do that by failing to identify and carry through a complete range of demand management options. |
| | Information or changes required | The company should review its demand management option identification and screening process to ensure that cost beneficial measures can be identified to support its desire to do more to reduce household consumption.<br><br>The company should consider a higher level of customer engagement, interaction and communication to accompany the metering programmes.<br><br>Evidence of this type of activity is not clear from the options descriptions given. |
| | **Our response** | **We have offered the Economics of Balancing Supply and Demand (EBSD) model a wider suite of demand management options whilst at the same time reviewed some of the assumptions behind those options.** |
| | Summary of any change to our revised dWRMP | Our revised dWRMP will include a combination of water efficiency strategies that take advantage of the high meter penetration that we will achieve during AMP7 (2020-25) and beyond. We will make full use of customer engagement and widespread communication to achieve the more challenging levels of per capita consumption (PCC).<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| I1.3 | Area of Issue | Ambition versus uncertainty |
| | Issues and evidence | The company's smart metering option is assumed to deliver a 6% demand saving. This appears optimistic compared to the suggested assumptions set out in the UKWIR (2012) report ""Smart Metering in the Water Sector: Phase 3 - Making the Case."" This UKWIR report suggests 0.5-1.5% savings are achievable (based on smart metering with feedback to customers without additional price signals). It is not clear in Technical report 4.7 what evidence has been used to support the assumption of a central estimate of 6% saving.<br><br>The company's ""fast data"" option is assumed to deliver 3% savings for non-water saving programme metered households and 4.8% for metered households in the water saving programme. The accuracy of these estimates is unclear without trial data.<br><br>The company's smart metering option is assumed to deliver a 6% demand saving. This appears optimistic compared to the suggested assumptions set out in the UKWIR (2012) report ""Smart Metering in the Water Sector: Phase 3 - Making the Case."" This UKWIR report suggests 0.5-1.5% savings are achievable (based on smart metering with feedback to customers without additional price signals). It is not clear in Technical report 4.7 what evidence has been used to support the assumption of a central estimate of 6% saving.<br><br>The company's ""fast data"" option is assumed to deliver 3% savings for non-water saving programme metered households and 4.8% for metered households in the water saving programme. The accuracy of these estimates is unclear without trial data to support. This is particularly important considering the planned implementation and dependency on savings early in AMP7. The company notes a need for further research before the ""fast data"" option is ready for implementation, yet the savings are assumed to commence at the start of AMP7. |
| | Implications | While the optimism in demand savings arising from smart metering schemes shows a level of ambition in demand management, this must be supported by evidence and clear assumptions. A high level of uncertainty in the savings planned very early in the planning period presents a risk to resilient supplies. |
| | Information or changes required | Target headroom component D4 accounts for uncertainty in the savings delivered through demand management options in the final plan scenario. The company should set out explicitly how this uncertainty relates to the specific assumptions made in the development of these options. |
| | **Our response** | **Affinity Water will present a revised Headroom technical report which will contain supporting evidence and clear assumptions behind the ambitious levels of demand management savings put forward in our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | As per 'Our response'. |
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| I1.4 | Area of Issue | Transparency in demand saving calculations |
| | Issues and evidence | The company projects a saving of 35 Ml/d as a result of the installation of the fixed network for smart metering from 2025, over and above the 14 Ml/d achieved through the company's fast data option in AMP7. It is not clear whether the savings already achieved in AMP7 have been double counted. |
| | Implications | Greater visibility of the assumptions and calculations leading to these savings would be useful to add clarity and certainty in the supply demand balance. |
| | Information or changes required | The company should provide additional visibility of the assumptions and calculations for the savings expected from demand management options. |
| | **Our response** | **We have studied our demand management options in great depth following the public consultation period. Specifically, we have looked at potential double counting of option benefits**. |

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| | Summary of any change to our revised dWRMP | Our revised dWRMP will provide additional visibility of the assumptions and calculations used to support the demand management option yields. Directly relating to this comment around 'fast data' option, we have profiled the savings of both to avoid potential option benefit double counting and will present this clearly in the revised dWRMP. |
| **Improvement 2: The company should ensure the information provided on drought options is appropriate and clear under all scenarios** | | |
| I2.1 | Area of Issue | Selection of supply-side drought options |
| | Issues and evidence | WRP tables have not been completed for the alternative plan so it is not clear how and which drought options would be utilised under that plan.<br><br>Under the alternative plan, the main report states that drought permits would be needed prior to 2025 in droughts of severity less than 1 in 200 years. However, without the completed planning tables (in particular table 10) it is not possible to identify which are required during AMP7, and which are required to maintain supply after 2025 for events more severe than 1 in 200. |
| | Implications | Stakeholders do not have sight of all options being proposed under the alternative plan.<br><br>The company may not have selected the most environmentally sustainable set of preferred options under the preferred plan and alternative plan. |
| | Information or changes required | The company should clearly set out how it has selected drought options under both the preferred plan and alternative plan and how this aligns with the commitment in its drought plan to use the least environmentally damaging permits first.<br><br>See also Recommendation 2. |
| | **Our response** | **We will present a full set of Water Resource Planning tables for our revised dWRMP which will give sight of all options proposed and how this aligns with the commitment in our Drought Management Plan to use the 'least environmentally damaging permits' first (i.e. drought orders and permits).**<br><br>**In any case, the use of drought permits will end in 2024 under a 1 in 200 year drought as a result of the SUND water conditioning scheme, which will enable us to use our full statutory entitlement from ANGL.** |
| | Summary of any change to our revised dWRMP | We will present a full set of Water Resources Planning tables for our revised dWRMP. |
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| I2.2 | Area of Issue | WRP table 10 - presentation of the 1 in 500-year drought scenario |
| | Issues and evidence | The company has assessed the impact of a 1 in 500-year drought scenario, but this information has not been carried through to planning table 10. |
| | Implications | Customers are not able to understand the implications for the full range of droughts tested in the plan. |
| | Information or changes required | The company should add the 1 in 500-year drought scenario to planning table 10 for all water resource zones. |
| | **Our response** | **We will present the 1 in 500-year drought scenario within planning table 10 for all Water Resource Zones.** |
| | Summary of any change to our revised dWRMP | Inclusion of the 1 in 500-year drought scenario in planning table 10. |
| **Improvement 3: The company should explain demand forecast uncertainties** | | |
| I3.1 | Area of Issue | Uncertainty in the regression forecast |

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| | Issues and evidence | The company has used a Multi Linear Regression (MLR) approach to determine its household consumption forecast. MLR is a new approach for WRMP 2019 and the forecast presented in the draft plan provides a proof of concept. However, greater certainty and validation of the models is required in order to gain greater confidence in this approach and the forecast produced. |
| | Implications | There is a risk that the company may have over or under estimated the household demand forecast. |
| | Information or changes required | The company should continue to improve the certainty in its household consumption forecast and explain the impact of any changes in its final plan. |
| | **Our response** | **Although we recognise that using a Multi Linear Regression (MLR) model is a different method for WRMP 2019, it represents an improvement from the micro-component model used for WRMP 2014. The model developed for WRMP 2019 has undergone an extensive phase of model testing and validation that we would have not been able to carry out with the previous micro-component model. We have also been able to determine the uncertainty of our demand forecast.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| I3.2 | Area of Issue | Changes in demand forecasts between WRMP 2014 and draft WRMP 2019 |
| | Issues and evidence | The company has used a different method to forecast demand in this plan and they state that results are difficult to compare to WRMP 2014.<br><br>Water resource zones 1 and 2 shift from declining demand forecasts to increasing demand forecasts between WRMP 2014 and the draft WRMP 2019.<br><br>Water resource zone 8 previously forecast a relatively stable distribution input in WRMP 2014 but the draft WRMP 2019 baseline forecasts a steep increase, exceeding the WRMP 2014 forecast by 2034.<br><br>Significantly reduced distribution input (compared to the previous WRMP) in all other zones is not clearly explained. |
| | Implications | This large divergence in forecast demand between the previous WRMP and latest draft plan requires further explanation. |
| | Information or changes required | The divergence between the previous plan and this draft plan should be better explained. |
| | **Our response** | **We recognise that there is a change in the demand forecast between WRMP14 and dWRMP19. The predominant factors that have affected the patterns include changes to the roll out of the Water Savings Programme, population growth and updates to the normal year and peak factor assessments.** |
| | Summary of any change to our revised dWRMP | We will ensure we provide a more detailed explanation of the change in demand forecast patterns at the Water Resource Zone level between WRMP14 and 19 within our revised dWRMP. |
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| I3.3 | Area of Issue | Occupancy rates |
| | Issues and evidence | Insufficient explanation is provided on how occupancy values (in the base year and in future) were estimated, or how they were used to allocate population between new-build, optant and other metered and unmetered households. The different meter status groups usually have different average occupancy and different consumption rates.<br><br>The company indicates (Technical report 2.3 section 6) that they plan to test the sensitivity of the population forecast to changing occupancy rates. |

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| | Implications | There is concern that the household population and PCC forecasts may not be sufficiently accurate. The allocation between metered and unmetered properties is especially significant due to very different PCC values. |
| | Information or changes required | The company should provide further information regarding how occupancy values were estimated. |
| | **Our response** | **We have developed a model that forecasts occupancy rates and this will be explained in a new technical report that will be published as part of our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | As per 'Our response'. |
| | | |
| I3.4 | Area of Issue | Understanding of customer behaviour |
| | Issues and evidence | The company has used WRMP 2014 survey data to support micro- component analysis. The company has not indicated how sufficient micro- component data will be collected in this planning period to support development of WRMP 2024. |
| | Implications | Use of WRMP 2014 data suggests that the company has not gathered an up to date view of its customer base and the impact their changing behaviours might have on demand forecasts.<br><br>Without a method in place to continue to collect this data, the WRMP 2024 plan risks using data that is 10 years old. |
| | Information or changes required | The company should provide an explanation of how it plans to rectify this data gap to ensure robust forecasts are made. |
| | **Our response** | **The micro-component model for the base year is built on the data collected in the Water Use survey for PR14 and Market Transformation Programme (MTP) industry micro-component data collected and reported in a recent UKWIR study - UKWIR report on integrating behavioural change into demand forecasting and water efficiency practices, 2016. The industry data was further validated against Artesia's 2017 Silhouette logging data.** |
| | Summary of any change to our revised dWRMP | As per 'Our response'. |
| **Improvement 4: Ensure that the company is data-ready for WRMP 2024** | | |
| I4.1 | Area of Issue | High final plan scenario target headroom as a percentage of deployable output |
| | Issues and evidence | The overall company-wide target headroom, expressed as a percentage of deployable output, is higher than that given in WRMP 2014 and is relatively high when benchmarked against other companies.<br><br>The company outlines several improvements in Technical report 3.2 that could be made to the headroom assessment before the submission of the revised plan.<br><br>The company cite the main contributor to this as increased uncertainty in the demand forecast (Technical report 3.2). This has occurred in part due to the inclusion of additional sub- components of uncertainty and relatively large uncertainty around the savings from the baseline water saving programme. |
| | Implications | Adequate justification has been presented for the relatively high target headroom. However, further work to improve these figures would be supported. |
| | Information or changes required | The company should proceed with the improvements to the headroom calculations recommended in Technical report 3.2. |

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| | **Our response** | **Improvement I4.1 suggests that a large factor for the headroom being a greater percentage of our Deployable Output when benchmarked against most companies is due to a relatively large uncertainty around baseline Water Saving Programme savings. We have carried out further work since publication of the dWRMP to improve our calculations of headroom.** |
| | Summary of any change to our revised dWRMP | We will present a revised target headroom with our revised dWRMP. |
| | | |
| I4.2 | Area of Issue | More than 3% difference between sum of the micro-components and report PCC values |
| | Issues and evidence | For some baseline and final plan measured households and un- measured households the sum of the micro-components is more than 3% different to the reported PCC. |
| | Implications | The micro-component values cannot be accurately compared with other companies and do not reflect the full breakdown of PCC. |
| | Information or changes required | Affinity Water should update its micro-component data to better reflect PCC. |
| | **Our response** | Our micro-component model will be updated to better reflect the reported per capita consumption in the Water Resources Planning Tables submission. |
| | Summary of any change to our revised dWRMP | See Our response. |
| | | |
| I4.3 | Area of Issue | Internal transfers |
| | Issues and evidence | Affinity Water has preferred transfer options that do not appear as feasible options within the WRP planning tables. |
| | Implications | No costing information is provided for these transfer options. |
| | Information or changes required | Affinity Water should add these transfer options to Table 5. |
| | **Our response** | **We have not provided costs for the preferred transfer options as they are existing transfers and therefore not 'feasible options'. We will continue to include the volumetric benefit of these existing transfers in the Water Resources Planning tables.** |
| | Summary of any change to our revised dWRMP | No change. |
| | | |
| I4.4 | Area of Issue | Groundwater deployable output assessments present a "worst case" scenario and may underestimate deployable output |
| | Issues and evidence | The lumped parameter groundwater models used to assess deployable output, using data at the monthly time step, may not have accounted for short-lived recharge events arising from higher intensity rainfall. |
| | Implications | Groundwater level recessions under drought scenarios may be exaggerated and represent a worst- case scenario. |
| | Information or changes required | Affinity Water should explore the use of a distributed groundwater deployable output model which runs at a daily time step. |
| | **Our response** | **The use of the lumped parameter groundwater model to assess deployable outputs is a common method used widely in the water industry for hindcasting groundwater levels and linking it to source deployable outputs. Following the production of the main Deployable Output (DO) report, further sensitivity testing took place to understand whether the worst historic droughts in the 1930s and** |

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| | | **1940s were indeed the worst in the area. This has been proven to be the case and is consistent with work presented from BGS and the Met Office and also consistent with Anglian Water's assessment.**<br><br>**The WRMP-DMP links report that explains this assessment has been shared with the Environment Agency (EA) as a supporting document to the main Deployable Output (DO) report. Following discussions with the local Environment Agency (EA) team, it is understood that this evidence presented is acceptable to the EA and the DOs to be used in the revised dWRMP will be based on the same methodology.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| I4.5 | Area of Issue | Development of a full conjunctive use model |
| | Issues and evidence | Water resource zone models used in the current plan are Microsoft Excel- based and may be limited in their ability to model distribution issues and constraints to deployable output.<br><br>Furthermore, a full conjunctive use model may allow an improved representation of surface water sources which are currently modelled in a simplistic manner.<br><br>Technical report 1.1 notes that there are no expected distribution constraints, but does not present evidence to support this statement. Section 8.6.8 of the main plan goes on to state that the Economics of Balancing Supply and Demand (EBSD) and Miser modelling has highlighted a number of network constraints. This represents an inconsistency in reporting. |
| | Implications | The company may not fully understand the range of constraints to water resource zone deployable output. |
| | Information or changes required | The company should explore the development and use of more sophisticated conjunctive use water resource zone models. |
| | **Our response** | **The Economics of Balancing Supply and Demand (EBSD) modelling works at the Water Resource Zone (WRZ) scale whilst the Miser model at an Hydraulic Demand Zone (HDZ) scale. We are using both models to understand potential network constraints in transporting water internally that may not be identifiable at a larger scale.**<br><br>**Our surface water sources are licence constrained, so developing a conjunctive use model for these would not help. Also, the majority of our surface sources feed WRZ6 with only one feeding WRZ4 and being available for onward distribution to other zones.**<br><br>**We are exploring options to enhance connectivity between all our zones so that more surface derived water can be available to more zones. Our groundwater sources are mainly drought constrained so the availability of water will reduce depending on the drought severity. Where local issues have been identified through the Miser modelling, these will be addressed in the business plan for delivery in AMP7 (2020-25).** |
| | Summary of any change to our revised dWRMP | The inclusion of “Supply 2040” – a long-term strategic plan which will enable us to move water freely around our Central region. |
| | | |
| I4.6 | Area of Issue | Reduced deployable output from existing sources. |
| | Issues and evidence | A review of the worst historic drought has been used to assess deployable output. We are concerned that the data used to assess the worst historic drought could lead to an underestimation of deployable output<br><br>Local groundwater and river level data suggests that 1934 was not a particularly severe event. The implication is that the assessments of deployable output may extrapolate beyond the real worst historic drought to a more severe event which didn’t actually occur. |

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| | Implications | The company may be underestimating the yield available to them from existing sources. |
| | Information or changes required | The company should undertake further work on its deployable output assessment to provide confidence of these changes in deployable output. This includes making best use of available local data and providing further explanation of the data and assumptions in its modelling. |
| | **Our response** | **Following the production of the main Deployable Output (DO) report, further sensitivity testing took place to understand whether the worst historic droughts in the 1930s and 1940s were indeed the worst in the area. This has been proven to be the case and is consistent with work presented from BGS and the Met Office and also consistent with Anglian Water's assessment. The WRMP-DMP links report that explains this further sensitivity assessment has been shared with the Environment Agency (EA) as a supporting document to the main DO report. Following discussions with the local EA team, it is understood that this evidence presented is acceptable to the EA and the DOs to be used in the revised dWRMP will be based on the same methodology.**<br><br>**Following the EA's guidance and being consistent with neighbouring water companies, the intention is to move to a Level of Service of 1 in 200-year drought scenario with no drought permit use to increase our resilience. In order to do this, for the revised dWRMP we will be adopting the 1 in 200 DOs derived from the same methodology used in the dWRMP but hindcasting in a drought that has not been experienced in the last century. We recognise that this involves a level of uncertainty however given the available datasets we are using best practice to calculate these deployable outputs.** |
| | Summary of any change to our revised dWRMP | Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024. |
| | | |
| I4.7 | Area of Issue | Source response to drought |
| | Issues and evidence | The company has not adequately justified the conclusion that its surface water sources are not vulnerable to drought (Technical report 1.1 section 4.2.3). |
| | Implications | Deployable output under certain drought scenarios may have been overestimated. |
| | Information or changes required | The company should provide additional evidence to justify this conclusion. |
| | **Our response** | **Our surface water sources on the River Thames are licence constrained, not drought constrained. Based on the Lower Thames Operating Agreement (LTOA) we can abstract our full licensed volume at all times and Thames Water must maintain flows at Teddington Lock by releasing water from their bankside storage reservoirs next to the river that provide resilience in a drought.**<br><br>**The drought assessment undertaken in AMP5 (2015-2020) by Thames Water has assumed that our surface sources along with South East Water's surface sources are maximised to licence, with the remainder water assigned to Thames Water to refill the reservoirs and support river flows above the trigger at Teddington. As such, for our Deployable Output assessment, our surface sources have been maximised to licence and any treatment or network constraints are being addressed separately in our Business Plan.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| I4.8 | Area of Issue | Extension of groundwater records for assessment of worst historic drought |

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| | Issues and evidence | Boreholes selected for calibration are in some cases distant from the sources for which deployable output assessments are undertaken. In particular, the Eastern region is calibrated against the Dover Chalk area, which is geographically distant and geologically different. No evidence has been presented to demonstrate that this is representative of the Eastern region. |
| | Implications | The supply forecast may not be based on appropriate data, resulting in additional uncertainty in deployable output assessments. |
| | Information or changes required | The company should justify the selection of calibration borehole records and consider the use of a greater number of more representative records. |
| | **Our response** | **Our East Region groundwater sources are not considered drought vulnerable hence the Deployable Output (DO) methodology used here was not the same as for the drought vulnerable sources in our Central region. The Source Reliable Output Diagrams for our East sources included data from the droughts in the 1990s, 2000s and 2012 to derive the DO figures without linking them to any local observation borehole (OBH). This is explained in section 2.2 of the DO report. For all other zones, the closest representative OBH has been selected for each Water Resource Zone as set out in the same section**. |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| I4.9 | Area of Issue | Deployable output assessment for high priority and low priority sources |
| | Issues and evidence | The process of deployable output assessment has been carried out by splitting sources into drought sensitive (defined with a good combination of known groundwater levels from the past 20 years, historic drought data, and operational knowledge) and low priority sources. However, given that water resource zones 4, 6 and 8 are considered to contain no sources classified as 'drought sensitive' so are not included in the time series of groundwater levels from this approach, it would be useful to have this method clarified in more detail, justifying its validity. |
| | Implications | The company has used different approaches to estimate deployable output for its groundwater sources. It is important that eventually all sources are calculated using the method selected for 'drought sensitive' boreholes, to gain the most complete picture of the system (this is acknowledged in Section 7.3 of the Technical report 1.1, bullet 7 on p 28). |
| | Information or changes required | The new source deployable output assessment methodology used for high priority sources should be implemented for all groundwater sources. |
| | **Our response** | **We will consider expanding this new methodology to the non-drought sensitive sources as part of our dWRMP24 submission. However, the Deployable Output (DO) figures are not expected to change given the location of those sources at the bottom of the valleys or downstream of Sewage Works outflows or being surface water sources in the River Thames where the Lower Thames Operating Agreement is in force. The priority was given on drought vulnerable sources for the DO calculation as the greatest changes occur in these groundwater sources given their known vulnerability even in the known historic droughts.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| I4.10 | Area of Issue | Leakage assessments |
| | Issues and evidence | The company notes that it only has in the region of 80% coverage of its network through monitored District Metered Areas (DMA). |

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| | Implications | The relatively low DMA coverage introduces uncertainty into the water balance for demand-related (including leakage) forecasts. |
| | Information or changes required | The company should carry out further work to improve DMA coverage. This may help the company to identify new opportunities for leakage management. See also Recommendation 11. |
| | **Our response** | **The actual coverage of our District Metered Areas is 90.2%.** |
| | Summary of any change to our revised dWRMP | We shall amend this section of the report in the revised dWRMP to ensure better clarity of our coverage. |
| **Table 3: Assessment of preferred options and their environmental risk** | | |
| O1 | AFF-EGW-WRZ5-0882: Wendon upgrade | Additional 2Ml/d abstraction. |
| | Scenario and year implemented | Preferred Plan (PP) 2021 |
| | AFF SEA score (10c) | -1 |
| | WINEP scheme (if applicable) | Implementation scheme for no- deterioration of the surface water body (Wendon Brook) |
| | EA view of option feasibility | Very unlikely |
| | Reason | Significant risk of causing deterioration in water framework directive waterbody status. Contradicts licensing policy - no further groundwater abstraction. |
| | **Our Response** | **At the time of producing the dWRMP this source was under National Environmental Programme (NEP) investigation so no information was available. Following the conclusion of the NEP investigation and the proposed licence capping at recent actual volumes by the Environment Agency area office, we have agreed to remove this option from our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Option removed from revised dWRMP. |
| | | |
| O2 | AFF-NGW-WRZ2-0120: POOR, RUIS & NORT Treatment Scheme | Licence disaggregation combined with the reinstatement of 3 decommissioned sources. |
| | Scenario and year implemented | Alternative Plan (AP) 2023 PP 2023 |
| | AFF SEA score (10c) | -2 |
| | WINEP scheme (if applicable) | Not applicable |

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| | EA view of option feasibility | Very unlikely |
| | Reason | Contradicts published licensing policy.<br><br>Licences belong to the CLAY Group, quality (plume from landfill site) and network connection issues, so source inactive. Group licence volume can be reached without these sources. Option located in an Area closed to new abstraction. Groundwater storage has also shown signs of decline in past few years.<br><br>The original discussion was to initiate technical assessment, which concluded that increased abstraction at the current location could not be permitted.<br><br>Water would be available for abstraction at alternative locations in the confined Chalk with ""Water available"" status. |
| | **Our Response** | **These sources were initially included in the dWRMP following discussions held with the Environment Agency area office. Subsequent to the dWRMP consultation, we were informed that these sources are located in a closed CAMS area hence they will be removed from our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sources removed from revised dWRMP. |
| | | |
| O3 | AFF-NGW-WRZ3-1075: NOMA increased abstraction | Increase abstraction from NOMA to replace water lost at water quality scheme scavenging site (3 Ml/d). |
| | Scenario and year implemented | AP 2023<br><br>PP 2023 |
| | AFF SEA score (10c) | -2 |
| | WINEP scheme (if applicable) | Not Applicable |
| | EA view of option feasibility | Not Feasible |
| | Reason | Contradicts published licensing policy.<br><br>Area refused the proposal to increase abstraction in Chalk, but Lower Greensand Abstraction is a possible option pending work to assess impact and feasibility. |
| | **Our Response** | **This source is located in the interfluve area between the Lee and the Colne catchments and was regarded as not environmentally damaging. However, following advice from the Environment Agency area office, it is located in a closed CAMS area hence they will be removed from our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Source removed from revised dWRMP. |
| | | |
| O4 | AFF-NGW-WRZ1-0062: CHAR Relocation | Relocation to reduce impact to River Chess. AP only. |
| | Scenario and year implemented | AP 2023 |

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| | AFF SEA score (10c) | 0 |
| | WINEP scheme (if applicable) | Not Applicable |
| | EA view of option feasibility | Uncertain |
| | Reason | The feasibility of this option is still uncertain pending conclusion of on-going work.<br><br>A source investigated as part of the ongoing River Chess investigation.<br><br>Impact to Chess demonstrated but not determined quantitatively. |
| | **Our Response** | **At the time of producing the dWRMP this source was under National Environmental Programme (NEP) investigation so no information was available. Following the conclusion of the NEP investigation and the information received by the Environment Agency area office, we have agreed to remove this option from our Revised Plan as it is now part of the Sustainability Reductions programme and has been flagged as amber in the WINEP3 table.** |
| | Summary of any change to our revised dWRMP | Option removed from revised dWRMP. |
| | | |
| O5 | AFF-EGW-WRZ4-1064: ICKE Groundwater | 6 Ml/d existing licence, seeking to reinstate. AP only. |
| | Scenario and year implemented | AP 2034 |
| | AFF SEA score (10c) | -1 |
| | WINEP scheme (if applicable) | AFF-NGW- WRZ2-0120 : POOR, RUIS & NORT Treatment Scheme<br><br>AFF-TPO- |
| | EA view of option feasibility | Very unlikely |
| | Reason | Contradicts published licensing policy. Existing licence with quality (plume from landfill site) and network connection issues, so inactive. Option located in an Area closed to new abstraction according to London groundwater management strategy. The area's groundwater storage has been observed to be declining in past few years.<br><br>Similar to Poor, Ruis and Nort, the original discussion was to initiate technical assessment, which concluded that increased abstraction at the current location could not be permitted. Water would be available for abstraction at alternative locations in the confined Chalk with ""Water available"" status.<br><br>Similar to Poor, Ruis and Nort, the original discussion was to initiate technical assessment, which concluded that increased abstraction at the current location could not be permitted.<br><br>Water would be available for abstraction at alternative locations in the confined Chalk with ""Water available"" status. |

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| | **Our Response** | **This source, similar to the RUIS-NORT-POOR option (0122), was initially included in the dWRMP19 following discussions held with the Environment Agency area office. Subsequent to the dWRMP consultation, we received information that this along with the neighbouring sources are located in a closed CAMS area hence they will be removed from our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Source removed from revised dWRMP. |
| | | |
| O6 | AFF-TPO-WRZ4-0412: HILG (Hillingdon Hosp.) | 0.55Ml/d average, 1 peak. AP only. |
| | Scenario and year implemented | AP 2024 |
| | AFF SEA score (10c) | 0 |
| | WINEP scheme (if applicable) | AFF-NGW- WRZ2-0120 : POOR, RUIS & NORT Treatment Scheme<br><br>AFF-EGW- WRZ4-1064 ICKE Groundwater |
| | EA view of option feasibility | Uncertain |
| | Reason | HNL Area unaware of proposal. Further assessment required to assess whether it is a viable option. |
| | **Our Response** | **This option refers to change of ownership with no proposed changes in the recent actual abstraction. Following discussions held with the Environment Agency area office the option will remain in our revised dWRMP pending further investigation into the licence utilisation.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| O7 | AFF-NGW-WRZ3-0548: HART borehole replacement for PORT | Dry year option.<br>0.31 Ml/d average, 0.67 Ml/d peak, in the AP only. |
| | Scenario and year implemented | AP 2023 |
| | AFF SEA score (10c) | -2 |
| | WINEP scheme (if applicable) | Not applicable |
| | EA view of option feasibility | Very unlikely |
| | Reason | The licensing strategy does not allow additional abstraction. |

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| | **Our Response** | **Based on the information received by the Environment Agency area office and the closed CAMS strategy, we will remove this option from the revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Option removed from revised dWRMP. |
| | | |
| O8 | AFF-TPO-WRZ3-0134: VAUX (IBC Vehicles) Groundwater | 3 Ml/d average, 5 Ml/d peak. In AP only.<br><br>Affinity Water would like to buy the licence but the licence has been varied so the volume no longer exists. |
| | Scenario and year implemented | AP 2024 |
| | AFF SEA score (10c) | -1 |
| | WINEP scheme (if applicable) | Not applicable |
| | EA view of option feasibility | Not feasible |
| | Reason | Licence volume no longer exists. |
| | **Our Response** | **At the time of producing the dWRMP, discussions were continuing between ourselves and the landowner regarding the change of ownership in the licence. Following discussions with the Environment Agency area office, we understand that this licence no longer exists hence it will be removed from our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Option removed from revised dWRMP. |
| | | |
| 09 | AFF-EGW-WRZ2-0087: SHAKE Source Optimisation | 1.6 Ml/d average (source opt.), in both plans. In AP only. |
| | Scenario and year implemented | AP 2022<br><br>PP 2022 |
| | AFF SEA score (10c) | 1 |
| | WINEP scheme (if applicable) | Not applicable |
| | EA view of option feasibility | Source Opt may be ok - needs a check on deterioration for Colne catchment.<br><br>Not feasible to increase in volume. |
| | Reason | Increase in deployable output not possible - in closed catchment. |
| | **Our Response** | **This option was developed following modelling work undertaken which was shared with the Environment Agency (EA) area office at the time of producing the dWRMP. Following discussions with the local EA we have agreed to address this proposal separately pending further work and will remove the option from the revised dWRMP.** |

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| | Summary of any change to our revised dWRMP | Option removed from revised dWRMP. |
| | | |
| O10 | AFF-NGW-WRZ1-1050: Canals & Rivers Trust - Cow Roast | 2 Ml/d average 5 Ml/d peak. AP only.<br><br>Source under investigation for abstraction impact in a closed catchment. |
| | Scenario and year implemented | AP 2030 |
| | AFF SEA score (10c) | 0 |
| | WINEP scheme (if applicable) | Not applicable |
| | EA view of option feasibility | Not feasible |
| | Reason | In closed catchment. |
| | **Our Response** | **At the time of producing the dWRMP this source was under National Environmental Programme (NEP) investigation so no information was available. Following the conclusion of the NEP investigation and the proposed licence changes at the CRT abstractions, we have agreed to remove this option from our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Option removed from revised dWRMP. |
| | | |
| O11 | AFF-NGW-WRZ3-1053: KINW (New GW scheme) | Increase abstraction from a Lower Greensand aquifer option |
| | Scenario and year implemented | AP 2029 |
| | AFF SEA score (10c) | -1 |
| | WINEP scheme (if applicable) | Not applicable |
| | EA view of option feasibility | Uncertain. Likely long lead in times for investigation |
| | Reason | Linked issues with option AFF-NGW-WRZ3- 1068 RUNGS, AMP7 LGS Borehole. Work is required to confirm the sustainability of the abstraction and to prevent any impact at the outcrop.<br><br>Most likely scenario is to progress with pumping test and further modelling work, and if the tests prove no impact, to have a time limited licence whilst collecting monitoring data for review. KINW LGS option will only be assessed depending on the outcome of investigations at this site. |
| | **Our Response** | **Following discussions with the Environment Agency (EA) area office, we understand that this option is viable subject to further work undertaken to develop the option further and understand the geology and hydrogeology of the LGS aquifer in this region. We will maintain this option in our plan and will continue** |

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| | | **working with the EA to refine the option further in AMP7 (2020-25).** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| O12 | AAFF-NGW-WRZ3-1068: RUNGS, AMP7 LGS Borehole | In baseline plan. Application already underway. |
| | Scenario and year implemented | Baseline |
| | AFF SEA score (10c) | N/a |
| | WINEP scheme (if applicable) | Not applicable |
| | EA view of option feasibility | Uncertain |
| | Reason | See SAFF-NGW-WRZ3-1053 KINW (New GW scheme) |
| | **Our Response** | **Following discussions with the Environment Agency (EA) area office, we understand that this option is viable subject to further work undertaken to develop the option further and understand the geology and hydrogeology of the LGS aquifer in this region. We will maintain this option in our plan and will continue working with the EA to refine the option further in AMP7 (2020-25).** |
| | Summary of any change to our revised dWRMP | N/A |
| **Minor issues are those that do not fall into the above categories, and do not pose a direct risk to the security of supplies or the environment. We consider that resolving these issues will improve the presentational quality, consistency and/or customer understanding of the draft plan.** | | |
| M1 | Tables 80 and 97 (main plan) – presentation of costs of demand management schemes | Tables 80 and 97 summarise the costs of the preferred plan and alternative plan respectively, including the costs of the existing water saving programme in each AMP period. A minor point, but one which could mislead stakeholders is the sum of costs presented for demand management schemes for the alternative plan in table 97. The summary costs shown include the costs of the existing, whereas the equivalent figure for the preferred plan in table 80 excludes the baseline water saving programme costs. |
| | EA recommended change to plan | The company should present the costs for its demand management programme |
| | **Our Response** | **Noted.** |
| | Summary of any change to our revised dWRMP | We will present one revised dWRMP. |
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| M2 | SEA technical report | In addition to the comments in recommendation 9 the following minor comments relate to Technical report 4.11: Tables 4.3 and 5.2 refer only to positive impacts.<br><br>Several relevant plans are not currently listed in Annex A and/or the summary of the policy context within the SEA. FRMPs are listed in the footnotes to the policy context, they are not listed in Annex A. No reference is made to relevant Shoreline Management Plan for the South East Area. HD RoC is referred to within the HRA Tech report, but not reference is made to the HD RoC in appendix II under water or biodiversity or Annex A. |
| | EA recommended change to plan | Tables 4.3 and 5.2 should be corrected.<br>The company should ensure that the plan and programme review as summarised in appendix II and Annex A includes all relevant plans |
| | **Our Response** | **Tables 4.3 and 5.2 will be corrected.** |
| | Summary of any change to our revised dWRMP | Will be updated for the revised dWRMP. |
| | | |
| M3 | Water framework directive assessment of GW and SW links | The water framework directive initial assessment has missed an important component of linking groundwater abstraction to surface water impacts. This omission means that the surface water impacts of some groundwater options may not have been properly identified. |
| | EA recommended change to plan | This link should be reviewed such that any risks are identified and used to inform the options appraisal and decision-making process. |
| | **Our Response** | **Link will be reviewed.** |
| | Summary of any change to our revised dWRMP | Will be updated for the revised dWRMP. |
| | | |
| M4 | Brent Reservoir | Both water framework directive and SEA assessment indicate potential benefits to flow in the River Brent as a positive impact. Note that the Brent is not assessed as a river that is impacted by low flow issues (i.e. there is not necessarily a problem to solve). Use of the reservoir could change the flow regime to be less natural so may have a negative impact. More work would be required to understand this. Stating a potential positive impact on downstream flows without proper evidence risks misleading the assessment of the option's viability. |
| | EA recommended change to plan | The risk of negatively impacting the flow regime should be recognised in the SEA and water framework directive assessments. |
| | **Our Response** | **This will be addressed.** |
| | Summary of any change to our revised dWRMP | Will be updated for the revised dWRMP. |
| | | |
| M5 | Type of Option | Type of Option has not been entered using categories provided. Affinity have used other categories in Table 5.<br><br>Not possible to compare demand side option costs with other company option costs by type of option. |
| | EA recommended change to plan | The company should update Type of Options to the categories provided |

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| | **Our Response** | **Noted.** |
| | Summary of any change to our revised dWRMP | Will be updated for the revised dWRMP. |
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| M6 | WAFU Adjustment has no ID | The company has added a line in Table 6 for WRZ 6 WAFU adjustment, but this has no option ID. |
| | EA recommended change to plan | The company should add an option ID |
| | **Our Response** | **Noted.** |
| | Summary of any change to our revised dWRMP | Will present this in the tables in revised dWRMP. |
| | | |
| M7 | Source Type | Source Type is incorrectly entered in WRZ8 Table 1. |
| | EA recommended change to plan | The company should update Source Type to use the agreed categories in Table 1 for WRZ8 |
| | **Our Response** | **Noted.** |
| | Summary of any change to our revised dWRMP | Will updated for revised dWRMP. |

| 10. Essex County Council | | |
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| 10.1 | Representation | I cannot accept that you should threaten water rationing because your aquifer levels are not sufficient. I must assume you know why, given that rainfall in Essex has risen in each of the last 10 years.<br><br>Your job is to supply our residents who live in your area with potable water. You need to invest in alternative facilities if the aquifer cannot adequately supply our needs.<br><br>What are your investment plans to increase water availability? |
| | **Our Response** | **We are not currently forecasting a deficit in our East region based on the sustainability reductions that the Environment Agency has formally advised us of through the Water Industry National Environment Programme. The EA has, however, stated in correspondence that sustainability change of up to 20 Ml/day may be required and that although this is not included within WINEP3 we should nevertheless be prepared to implement such a sustainability change by 2024 unless it is technically infeasible. Our Business Plan includes a mechanism to provide funding for investment to deliver this sustainability change should it be required.**<br><br>**Meteorological Office Rainfall and Evaporation Calculation System (MORECS) data for square 153, which we use to track rainfall levels in Essex, does not show an increasing rainfall total year on year for the period 2007-2017 and since 2014, the rainfall has got progressively lower.** |
| | Summary of any change to our revised dWRMP | We will be carrying out water resources modelling of the East Region to identify appropriate options to ensure we continue to be able to supply customers with water.<br><br>Sustainability reductions of 2.6 Ml/day in our East Region.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |

| 11. GROUP AGAINST RESERVOIR DEVELOPMENT (GARD) | | |
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| 11.1 | Representation | All elements of Thame Water's deficit forecast should be reviewed to determine whether an Upper Thames Resource Development will be available in time to meet Affinity's future needs. |
| | **Our Response** | **Elements of Thames Water's deficit forecast are being reviewed as we continue to develop our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 11.2 | Representation | There should be an investigation of the potential for the Teddington DRA scheme (or other Thames Water London-based option) to meet Affinity's future needs and enable early sustainability reductions in the Thames Valley. |
| | **Our Response** | **As in the Thames Water Statement of Response the Teddington DRA scheme has been removed in response to concerns raised by the EA.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 11.3 | Representation | Noting the overdependence of all of South East England on the over-stretched water resources of the River Thames, there should be more focus on the need for 'new water' to be transferred into the Thames Valley to meet Affinity's needs and to facilitate long overdue sustainability reductions in Chalk streams. |
| | **Our Response** | **As part of the ongoing development of our revised dWRMP, Affinity Water is carefully considering a number of strategic alternative options for transferring water.** |
| | Summary of any change to our revised dWRMP | Inclusion of strategic alternative transfer options in revised dWRMP decision making process. |
| | | |
| 11.4 | Representation | There should be a detailed independent review of the Thames Water investigation of options for transferring water from the Severn to the Thames, which have led to their selection of Abingdon reservoir as their preferred option for a new UTRD source. The independent review should focus on Thames Water assessments off deployable outputs, cost and environmental impact. |
| | **Our Response** | **Affinity Water is assessing all the options that are available for transferring water, including the Severn to Thames options.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 11.5 | Representation | There should be an independent review of Thames Water's proposed Abingdon reservoir on which Affinity's future needs could be dependent, focusing on: adequacy of storage, deployable output, resilience to drought, water quality and discharges, flood risk and reservoir leakage and validity of environmental assessment. |
| | **Our Response** | **As part of the development of our revised dWRMP we will continue to do the review work necessary for options considered.** |

| 11. GROUP AGAINST RESERVOIR DEVELOPMENT (GARD) | | |
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| | Summary of any change to our revised dWRMP | N/A |
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| 11.6 | Representation | There should be a review of the disproportionate high cost of the Abingdon reservoir which appears to be allocated to Affinity Water, with a justification provided in the WRMP |
| | **Our Response** | **As part of the development of our revised dWRMP we will continue to work on the costs of all potential options.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 11.7 | Representation | There should be a transparent review of Thames Water's option cost estimates that have led to their selection of the Abingdon reservoir as the future UTRD source for supplying Affinity Water |
| | **Our Response** | **As part of the development of our revised dWRMP we will continue to work on cost estimation.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 11.8 | Representation | Affinity should demonstrate that the relevant aspects of Thames Water's WRMP have been critically reviewed independently of Thames Water and their consultants |
| | **Our Response** | **We will do the review work necessary for the development of our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | N/A |

| 12. Harlow Council | | |
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| 12.1 | Representation | Harlow Council would like to respond to your consultation on the dWRMP.<br><br>I have been asked to contact you to make a formal request for disclosure of the supporting documents (1-6).<br><br>The authority is keen to understand the assumptions used to establish headroom and similarly, assess the options explored for climate adaptation and mitigation.<br><br>Key objectives for the authority include greater resilience to change and also, the reduction of risk in the management and delivery of growth. Given the scale of growth envisaged for the Harlow & Gilston Garden Town, we are working closely with partners to plan and manage infrastructure delivery up to 2033 and beyond. Given the level of planned growth in Essex, Hertfordshire and along the London Stansted Cambridge Corridor, it is important to consider how water companies are aligning their WRMPs. If you have any queries, please contact either myself or the Forward Planning Manager. |
| | **Our Response** | **Requested (19/04/18) copies of all reports on a compact disc - sent 16 May (Batch 1) and 21 May (Batch 2). Receipt confirmed. Two week extension agreed. Response received see below.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 12.2 | Representation | 1. Comments regarding supporting documents:<br><br>HRA Report<br><br>Screening/scoping:<br>Status of the original screening documentation in the light of the recent ECJ ruling 12.04.18.<br>http://www.centralbedfordshire.gov.uk/Images/inspector-letter-23-may-2018_tcm3-28728.pdf<br><br>Justification for 10km buffer:<br>It would be helpful to have more explanatory text; benchmarking with other WRMPs could also be added?<br><br>SEA Report<br>Reasonable alternative options:<br><br>Has the rationale for the Preferred Plan been fully explained?<br>Would a separate document on options appraisal and decision making add clarity?<br><br>Strategic objectives:<br><br>Agriculture: maintaining high quality supplies for irrigation purposes is likely to be more difficult due to climate change.<br>Has large scale storage (over ground/underground) been considered for domestic and non-domestic consumption (electricity generation/industry)?<br>http://www.wrse.org.uk/the-national-infrastructure-commission-has-issued-its-assessment/<br><br>Benchmarking with other water companies e.g. Thames Water.<br>E.g. Safeguarding of land for strategic infrastructure<br>Reference: Vale of White Horse Local Plan Core Policy 14<br>http://www.whitehorsedc.gov.uk/sites/default/files/359975%20VWH%20Plan_Body_DIGITAL%205-7.pdf<br><br>Widen scope of cumulative assessment particularly re. transfers between companies and planning for AW/Anglian/Thames shared assets e.g. reservoirs. “Double counting” has been mentioned as a risk but the assessment is usually qualitative as well quantitative: |

## 12. Harlow Council

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| | | Dialogue between Thames Water, Southern Water and Affinity mentioned briefly page 71-72; more detail is available in other documents which could be reproduced in the dWRMP to make it more coherent/robust<br>Cross refer to Technical Doc 4.9 Table 16 Transfers included as option but some discounted.<br><br>SEA Report Appendices<br>List of SSSIs:<br>Harlow Woods SSSI Ancient Woodland missing (45 has, unfavourable condition).<br><br>WFD Report Appendices B, C & D removed.<br><br>Business Plan 2015-20 (Sept 2013)<br>Consistency between documents:<br>Some of the key issues in the Business Plan include helpful detail on the following:<br>• importation of water from Anglian for nitrate removal; and,<br>• partnership working between water companies on crop protection products and controlling pollution at source.<br><br>Economics of balancing Supply and Demand Modelling<br>Macro scale modelling:<br>Limitations of aggregate modelling acknowledged i.e. a zonal model. What are the alternatives? |
| | **Our Response** | **The 10km buffer was used to identify the spatial scope for the Strategic Environmental Assessment (SEA). However, it is important to note that likely significant effects have been identified using the source, pathway, receptor model to ensure that no sensitive receptors within the influence of the WRMP are missed.**<br><br>**We will be producing a technical report which will explain our decision-making process and why certain options were selected over others on the basis of metrics such as risk, resilience, deliverability and cost within our Economics of Balancing Supply and Demand (EBSD) modelling. We will produce a revised dWRMP in which the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account..**<br><br>**Large scale storage has been considered for domestic and non-domestic consumption, including the reservoir options (which are being carefully considered alongside alternatives). These options are intended to enable our customers to have a resilient drinking water supply.**<br><br>**Our cumulative assessment encompasses all of the Affinity Water proposed options, but we also include the Water Resources in the South East (WRSE) cumulative effects assessment within our assessment. This acts to ensure all of the effects of our neighbouring water company proposed options are also accounted for, inclusive of transfers and shared assets.**<br><br>**Since our dWRMP submission we have continued with our regional group work and also improved upon our inter-company discussions regarding shared options. Meeting minutes will not be released as part of the revised dWRMP, but a description of the topics discussed and frequency of meetings/calls will be touched upon to show the extent of work done here to ensure alignment and collaborative working.**<br><br>**The SEA will include all of the Sites of Special Scientific Interest in our supply area as part of the assessment criteria, along with Special Protection Areas, Special Areas of Conservation, Ramsar sites etc.**<br><br>**Appendices B, C and D were removed due to redaction in line with company policy.**<br><br>**We work in partnership with Anglian Water investigating and developing catchment-based solutions to agricultural diffuse pollution issues in the Ardleigh reservoir and River Colne (Essex) catchments where both companies abstract and supply water from Ardleigh Reservoir. This partnership developed between 2010 and 2015 and was formalised in 2015 and has been working successfully since.** |

| 12. Harlow Council | | |
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| | | **Anglian Water's catchment office delivers advice and engagement to farm businesses in the catchments with Affinity Water providing 50% funding contribution and providing technical advice and support. During AMP6, a pesticide reduction programme has been implemented to support farmers in mitigating the effects of diffuse metaldehyde and clopyralid pollution. We follow Environment Agency Water Resources Planning Guidance and he UK Water Industry Research (UKWIR) methods in preparing our WRMP.**<br><br>**Three water companies abstract water from the River Thames: Thames Water, Affinity Water and South East Water. In September 2010, we set up the TCMSG, to work collaboratively to investigate and identify interventions to reduce the impact of diffuse metaldehyde pollution. In AMP6 the remit has been extended to also include other pesticides and water quality issues as part of the NEP. The purpose of the partnership is to share data, evidence and information, coordinate work, avoid duplication, standardise target setting, share experiences and knowledge from engagement with farmers and agronomists, and support the EA with Water Framework Directive (WFD) delivery. The steering group meets monthly to discuss progress with projects and how we can work together most efficiently. The UKWIR WRMP 2019 Methods describe the problem characterisation that water companies should carry out in order to understand their strategic needs and the complexity of the planning problem they are trying to solve. Accordingly, water companies should then select an appropriate decision making process and modelling methodology. We concluded that the assessment score for our Central region is consistent with Risk Composition 2, which translates into a plan that requires resilience testing and an 'extended methods' approach to Economics of Balancing Supply and Demand (EBSD) modelling. Alternative methods that use system simulators exist. They can be complex and very challenging and are best suited to describe water systems in which the behaviour of surface water storage is important. Given the nature of our water supply system and the results of our problem characterisation, we felt that an 'extended' EBSD approach, building on our existing EBSD model, was appropriate.** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
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| 12.3 | Representation | 2. Comments regarding dWRMP<br><br>Strategic objectives<br>Use of water in agriculture for irrigation and likely increase overtime because of climate change:<br>Text addresses focusses upon soils and geology pages 53-54 could be amplified to widen scope.<br><br>Flora and fauna:<br>Non water dependent species and habitats could be addressed in more detail especially Ancient Woodland.<br><br>Key issues could be more bespoke if separated for each area e.g. Central Area and more attention given to existing issues initially.<br>Scope:<br>a. The existing pressures of high population and high development pressures could be given greater emphasis<br>b. Designation of acute water stress from 2013 in regional and sub-regional context (Defra)<br>c. High consumption/household relative to other company areas<br>d. Leakage rates higher than national average<br>e. Clearer support for water efficiency targets in planned development as well as existing customers<br>f. Condition of surface water and groundwater against WFD targets<br>g. Efficient use of assets<br>h. Morphological mitigation for water assets<br>.<br>Possible changes to assets outside Affinity Water 's area which are shared and not shared.<br><br>Acknowledgement of strategic projects in East of England.<br>Scale of large scale strategic planned growth in the East and South-East could be given |

| 12. Harlow Council | | |
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| | | greater prominence.<br>Infrastructure planning for Garden Towns and Villages could be compromised (NPPF para 52).<br><br>Hunsdon Meads SSSI.<br>Absent from main report.<br>Mentioned in SEA appendices; bespoke report required p.338 onwards: “Potential for these sites to be disturbed during the upgrade of the WTW, and potential for hydrological changes at these sites due to increased abstraction. A CEMP should be in place during construction and ecological surveys are required “. |
| | **Our Response** | **Our demand forecast takes into account all strategic growth planned for by local authorities and it is this growth which underpins our need for investments in demand management options and supply side enhancements to maintain our ability to supply high quality drinking water to our customers.**<br><br>**Hunsdon Meads Site of Special Scientific Interest (SSSI) will be included in the revised Strategic Environmental Assessment (SEA) report.** |
| | Summary of any change to our revised dWRMP | Hunsdon Meads Site of Special Scientific Interest (SSSI) will be included in the revised Strategic Environmental Assessment (SEA) report. |
| | | |
| 12.4 | Representation | 3. Comments regarding process<br><br>Access to supporting documents.<br>Protocol/guidance re. best practice and transparency for preparation of WRMPs.<br>Some documents only available on request e.g. HRA; benchmarking with Anglian Water may be helpful<br><br>Redaction.<br>Some text/sections/appendices missing (possible commercial sensitivity).<br>Ability to make an informed and objective assessment is likely to be compromised.<br><br>Text/documentation relating to management of risk and uncertainty.<br>Consistency with the Business Plan.<br>More detail for text relating to climate change adaptation and mitigation would be helpful. |
| | **Our Response** | **We have taken on board the comments regarding process and will look to improve in these areas.** |
| | Summary of any change to our revised dWRMP | N/A |

## 13. Hertfordshire County Council

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| 13.1 | Representation | The following comments are submitted on behalf of the environment department in Hertfordshire County Council as its role as an elected administrative body delivering a range of services to over a million people who live, work and travel in Hertfordshire.<br><br>Our comments are formed from the Hertfordshire Water Study 2017 which is a collaboration of key organisations responsible for facilitating urban development, managing water utility provision and protecting the water environment in the county.<br><br>The study was commissioned to look at the impact of future development and housing growth on the long term infrastructure planning issues associated with water supply and waste water management. This study looked at long-term housing growth to determine what, if any, infrastructure issues would arise from growth already allocated in Local Plans as well as that likely to take place beyond the current timeframes. |
| | **Our Response** | **N/A** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 13.2 | Representation | Demand Management<br><br>Hertfordshire County Council welcomes Affinity's initiatives to make the best use of water. Reducing leaks, installing meters and helping customers use water more efficiently is appropriate to manage demand. Future growth will ultimately have an impact on supply and the future options therefore need to be timely to meet demand.<br><br>With the latest publications of Local Plans, Hertfordshire boroughs/districts have laid out how they see Hertfordshire growing in the coming 15-20 years and how that should be distributed. Cumulatively these plans provide for more than 91,000 new homes and 92,000 new jobs up to 2031. Preparing for significant growth longer term should be addressed, collaboratively and openly with customers.<br><br>Long term resilience to environmental pressures, demographic change, and the impacts of climate change will all have an effect on water supply. The demand for water particularly in drought conditions will only increase with more homes built in the county.<br><br>Deriving growth projections at the district level to 2051, using Local Plan figures and regional projections has shown that ensuring adequate water infrastructure capacity is critical to support the projected growth beyond the period covered by the current round of local plans, 2031 and beyond.<br><br>Affinity's plan has highlighted the issue surrounding growth, but it is important to build water infrastructure within planned timetables that can effectively deal with the changing demographic of the south east. |
| | **Our Response** | **In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 which was supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**These activities are reflected in our baseline demand forecast for WRMP 2019 and thus we are forecasting an initial reduction in total demand during the remainder of** |

## 13. Hertfordshire County Council

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| | | **AMP6 and into AMP7 (2020-25). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area.**<br><br>**Our demand forecast is supported by actual data gathered from our Water Saving Programme which shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is consistent with other metering programmes in the water industry.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
| | | |
| 13.3 | Representation | Drought and Sustainability reductions<br><br>Resilience needs to be planned for in the short and long term to ensure the interventions are secure. More demand due to growth and climate change will put more pressures on the system. The strategic solutions proposed by Affinity such as large scale storage reservoirs or raw water transfers is positive towards the issues surrounding resilience. An increased demand by more people or potential drought conditions will have a significant effect on water supply and this will require long term planning to ensure Affinity's customers are not impacted upon. What will sustaining levels of water supply for customers have on the environment? What will happen to the environment and habitats if demand increases in the future due to dry conditions and growth?<br><br>Our concerns rest with the environment. What will higher levels of water abstraction have on the environment? Hertfordshire has a number of chalk streams within the county. The porous nature of the chalk which is predominantly found under Hertfordshire acts like a sponge, holding water that feeds the rivers. This "chalk sponge" is referred to as the aquifer. When the aquifer has a sufficient quantity of water, the rivers flow; when there is not enough water in the aquifer, low or no flows are experienced. During periods of drought, abstraction rates increase, and this ultimately affects the aquifers and flow of water in to the chalk streams. Supply side drought conditions from increased groundwater abstraction can cause a number of impacts. Reduction in river flow leads to a reduced level of dissolved oxygen in the water, higher temperatures and increased concentration of pollutants and algal blooms.<br><br>What will Affinity do to mitigate the damage on the local rivers and environment when the conditions are exceptionally dry? Have Affinity anticipated what development growth would do to the environment if extraction had to be increase significantly?<br><br>It is welcomed in the Business Plan to see that Affinity are working towards sustainability reductions of 42Ml/d with the Environment Agency in the Central region by 2020; then planning a further 10 Ml/d reduction by 2025. The plan has recognised the importance of monitoring the environmental impacts associated with additional abstractions at a time of drought. Environmental Assessment Reports are a way of assessing the necessary impacts on areas and partnership working with the Environment Agency shows the commitment to monitoring the local environment. The baseline monitoring will feed in to future AMPs and it is reassuring to see partnership working with the Environment Agency and the Met Office to understand environmental factors in drought conditions. Although this is promising work, the environment should be a priority for water companies, especially with the levels of growth adding to the demand for water. |
| | **Our Response** | **We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced groundwater abstraction 42 Ml/d at the company scale. In our revised dWRMP, a further reduction of 36.31 Ml/d is planned by 2024.**<br><br>**Our extensive monitoring programme will enable us to identify these benefits in river flows and the ecology as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives. We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year** |

## 13. Hertfordshire County Council

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| | | **drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.**<br><br>**We are carefully considering the suitability of the regional reservoir option (the South East Strategic Reservoir) along with the appropriate delivery date., our work done to date has indicated that we are likely to plan to construct a new reservoir, jointly with Thames Water. This should further increase our resilience and will allow full conjunctive use of the surface and groundwater system. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
| | | |
| 13.4 | Representation | Partnership working<br><br>It is welcomed to see Affinity have already been in partnership with the Environment Agency and other organisations such as neighbouring water companies.<br><br>The partnership in Hertfordshire has enabled a collaborative and strategic approach to water infrastructure in the county, although to effectively produce policy and plan for the future, continued collaboration and more work will be required at the local level and with the water companies to ensure resilience.<br><br>Monitoring the environment, challenging customers' use of water and working in partnership are all important in the mission to supply water. We need to be aware of future challenges, particularly in drought and how we can be resilient without destroying the environment. Partnerships with stakeholders, other water companies will be key to ensuring work is planned in a timely manner. The initiative to involve environmental projects in to the community is also a positive solution to managing customers' expectations, and working towards protecting the environment. This work should be publicised widely and shared with stakeholders to assist with the programmes.<br><br>The Hertfordshire Water Study has not provided all of the answers, additional work, principally to look at the period beyond 2031 will be necessary and this will need to be conducted at the local level. The scale and nature of the work to be undertaken jointly by the local planning authorities and the relevant water companies will be dependent upon the scale and location of growth. This will be necessary to ensure that effective and resilient water infrastructure is available to support future growth in the county.<br><br>Therefore, long term planning and partnership between key organisations is vital for the next steps with water management. The information and modelling undertaken by the study will assist the water utility companies to update their information on development to plan for their next five year investment cycle. This study will also assist water companies to participate in the local planning process through a better understanding of growth and Local Plans and prepare beyond the investment cycle. |
| | **Our Response** | **We welcome Hertfordshire County Council's support for our partnership working with the Environment Agency (EA). Sir James Bevan, CEO of the EA, recently stated in an oral evidence session of the Environment, Food and Rural Affairs Select Committee that:**<br><br>***Sir James Bevan: Most of the conversations about most of the water will be with the individual water companies. Obviously, there are far fewer water companies than there are farmers. We have a lot of individual conversations with farmers but we have direct conversations with all of the major water companies.***<br><br>***Q272 Dr Johnson: What have they said?***<br><br>***Sir James Bevan: They have been receptive. Affinity Water, for example, who do the north-west area around London, depend greatly on groundwater for their supplies. Quite a lot of that groundwater has come out in the past from chalk aquifers and other sources that we do not think are sustainable. We have had very fruitful conversations with them about either adapting the amount of*** |

## 13. Hertfordshire County Council

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| | | ***water that they will take out of particular aquifers so that we think it is sustainable, or finding alternative sources of supply. We are conversing with the water companies, and I think they get it and they are trying to be helpful in managing down unsustainable abstraction levels.***<br><br>***Q273 Dr Johnson: You have had fruitful conversations and they seem receptive, but have you had action?***<br><br>***Sir James Bevan: Yes. There are some sources where we have agreed with the water companies that there will be no further abstraction of water, full stop. There have been other sources where we have agreed with the water companies that they will limit or reduce the amount of abstraction that they will take, or there have been examples of sources where they have agreed with us that they will not take water at a certain time, for example during the summer, when that particular source is stressed. We have had agreements that are starting to bear down on unsustainable abstraction. It is an ongoing process and we are not there yet but, as I say, I would rather try to reach voluntary agreements than wield a big stick."***<br><br>**We have also valued the partnership working over the Hertfordshire Water Study and the Hertfordshire Local Enterprise Partnership. We look forward to working further with all stakeholders in the county.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 13.5 | Representation | Overall comments<br><br>Planning for demand of water over a longer period within the Water Resource Management Plan is positive for a resilient system. Looking long term will enable large infrastructure projects to be built in a timely manner.<br><br>There are many challenges to infrastructure delivery in the future. Long term planning and partnership between key organisations is vital for the next steps with water management. The information and modelling undertaken by water utility companies to update their information on growth has provided an ideal platform to consider more options. Potentially sharing water with other water companies across England and Wales is also a positive plan for the future. Although, all infrastructure will be need to be built in a timely manner. Growth will happen in the South East and an effective timetable needs to be implemented to ensure infrastructure is in place before the demand increases.<br><br>Timely delivery will enable growth and should be in place before it is needed. Shared services between water companies and a drive to implement should be addressed as well, with partnership working from Government bodies to assist delivery.<br><br>Overall, Hertfordshire County Council would like to thank Affinity Water for the opportunity to comment on their Water Business Planning. Preparing for future infrastructure in our communities is essential in order to maintain growth but ultimately, it needs to be delivered timely and in joint partnership to ensure success. |
| | **Our Response** | **See above.** |
| | Summary of any change to our revised dWRMP | N/A |

| 14. Impress the Chess | | |
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| 14.1 | Representation | Dear Rt. Hon. Michael Gove MP,<br><br>Impress the Chess is a partnership of councils, residents and conservation organisations committed to protecting and enhancing the River Chess as it flows through Chesham in Buckinghamshire. The River Chess is a chalk stream, which is a globally rare habitat, fed from the Chilterns groundwater – which is also the main source of Affinity Water's supply in its Misbourne area. For this reason, we would like to respond to Affinity Water's consultation on its Draft Water Resources Management Plan 2020-2080.<br><br>The overall thrust of the management plan seems to be 'business as usual' for the next 5 years, with the continuing dependency on groundwater for supply. This is unacceptable, when the River Chess in Chesham was completely dry for 19 months up to March 2018. These are not traditionally ephemeral stretches of the river, as at one time they powered a number of mills. These stretches of the Chess have been drying up with increasing frequency in the last few decades, and we believe this is the result of increased local abstraction and changing weather patterns. 'Business as usual' is seriously damaging a rare and treasured environment and must not be allowed to continue.<br><br>The management plan lacks ambition to tackle the environmental damage that Affinity Water is contributing to. The Preferred Plan does not seek to achieve the leakage reduction target that Ofwat wants to see, nor does it seek to reduce per capita consumption to the government's target of 110 l/h/d by 2045. The plans talk about achieving the 'economic level of leakage', but where is the 'environmental level of leakage' considered? The plan also states that further abstraction reduction will be sought from existing sources where there is evidence that this will deliver environmental benefit. Impress the Chess has been part of protracted investigations into the impact of abstraction on the Upper Chess in conjunction with, amongst others, Affinity Water and the Environment Agency. From our experiences, it is clear that in most cases there will not be sufficient data in existence to show whether environmental benefits can be obtained. Lack of proof will equal no action. Or, where there is data to show that abstraction negatively impacts the river environment, it will be easy for Affinity Water to conclude that other factors, such as modified channel morphology, will cancel out the environmental benefits of abstraction reduction and therefore no abstraction reductions need take place. It seems unlikely that further abstraction reduction will take place.<br><br>With respect to specific aspects of the plan:<br><br>Resilience to Drought<br><br>We are concerned that droughts aren't recognised early enough, or at local enough levels to inform the public about the need to save water. Chesham Town Council, the leading partner in Impress the Chess, made this point in their response to the 2017 Drought Management Plan consultation and we would like to reiterate that point here. Very little was done whilst our river was dry for 19 months in 2016-18 and as a result minimal change happened in people's demand for water.<br><br>Furthermore, when a bad drought hits, the river suffers further as a result of drought permits and orders enabling additional abstraction. At a time when the river is under extreme stress, further abstraction will cause even more damage. For this reason, the Alternative Plan is preferable, reducing the chance of additional water being needed in any year to 0.5%.<br><br>Reducing Leakage Further<br><br>We reject the PP, especially as this is a reduction in the target from the previous plan and less than Ofwat's target for Affinity Water. The AP is preferable. We would like the potential benefit to the environment to be considered when looking at reducing leakage, not just the economics.<br><br>Reducing Per Capita Consumption<br><br>Affinity Water needs to be more ambitious in its demand reduction. Their South East region already has a PCC figure very close to their target for 2025 in the PP. Even the AP figure is greater than that which government would like to see. We understand that stakeholders would need to work in partnership with Affinity Water to achieve 110 litres per head per day and Impress the Chess stands ready to play our part in this. |

| 14. Impress the Chess | | |
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| | | With our rapidly growing population in this area, whether this reduction will be sufficient to even just maintain the status quo in terms of abstraction, is a matter of concern to us.<br><br>It is a key point that we do not want to see any reductions in demand achieved in our area just resulting in a reduction in the import of water into our area. If our community manages to make the change, we should be rewarded with more water left in our aquifer and therefore available to our environment. We shouldn't just be helping to reduce Affinity Water's costs from importing water out of the area.<br><br>The Different Options for Sustainability Reductions<br><br>The River Chess is already suffering as a result of abstraction. There isn't time to phase in sustainability reductions. The AP option of reduction of 39 million litres per day is preferable of the two options presented.<br><br>Working with Other Water Companies and Third Parties<br><br>Affinity Water is heavily reliant on groundwater and this is damaging our environment. There is little hope that this could change unless Affinity works in partnership with other organisations and companies. We strongly support a collaborative approach, not just for the provision of new assets that can reduce Affinity's damaging dependence on groundwater, but for sharing information about demand reduction and leakage reduction.<br><br>Many thanks for the opportunity to respond to this consultation. |
| | **Our response** | **We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we were not requested to implement any sustainability reductions for the River Chess as all water abstracted from the upper catchment (i.e. CHES and CHA sources) returns to the river via the Chesham Sewage Treatment Works (STW) outflow, thus mitigating the impact of abstraction. The section of the river upstream of the STW outfall has been the focus of the AMP6 National Environment Programme (NEP) investigation which is in the Options Appraisal stage. We have allowed for total cessation of CHA and CHES sources as a worst case scenario should it be required pending the outcome of the Options Appraisal. This volume, which may need to be reduced, is included in the company wide reduction of 36.31 Ml/d planned for AMP7 (2020-25) implementation in the revised dWRMP.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.**<br><br>**We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We are proposing reducing leakage by a further 15% by 2025, in line with Ofwat and customers' expectations.**<br><br>**These activities are reflected in our baseline demand forecast for WRMP 2019 and** |

| 14. Impress the Chess | | |
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| | | **thus we are forecasting an initial reduction in total demand during the remainder of AMP6 and into AMP7 (2020-25). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area.**<br><br>**Our demand forecast is supported by actual data gathered from our Water Saving Programme which shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is consistent with other metering programmes in the water industry.**<br><br>**We are committed to working with neighbouring water companies and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part into Water Resources in the South East, Water Resources in East and the Water UK Water Resources Long Term Planning Framework projects.**<br><br>**We are also committed to working with neighbouring water companies, third parties and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part into Water Resources in the South East, Water Resources in East and the Water UK Water Resources Long Term Planning Framework project (at national level).**<br><br>**Within the regional context, our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. Based on work done to date, the preferred strategy is to secure additional reliable water by transferring water from a new regional reservoir in the Upper Thames catchment (referred to as the South East Strategic Reservoir) in partnership with Thames Water. This could support new abstractions in the Lower River Thames reaches. It should also increase our resilience and allow full conjunctive use of the surface and groundwater system.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>Improved drought resilience as per the Alternative Plan plus increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024. |

| 15. Kent County Council | | |
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| 15.1 | Representation | Overall, we find the dWRMP rather lengthy and repetitive, and we would like to see clearer differentiation between baseline and planned activities |
| | **Our Response** | **We will take this into consideration in the drafting of the revised dWRMP.** |
| | Summary of any change to our revised dWRMP | A clearer differentiation between baseline and planned activities will be included. |
| | | |
| 15.2 | Representation | The structure of the document makes it difficult to follow the logic of how AW has arrived at the Preferred Plan (PP) and the Alternative Plan (AP). For example, we find it unhelpful that the PP and AP are presented in Section 2, whereas Problem Characterisation comes in Section 6, it is only in Section 9.9 that the baseline trends that would be expected without the plan are introduced, and the options appraisal is explained in Section 12 on page 206. Furthermore, much of the detailed information that we would wish to see is listed in Appendix D but marked "Regulator use and not to be published". We understood this process to be a public consultation and, whilst we appreciate that some commercially sensitive data might be held back, this approach is not understood, and we ask for clarification. |
| | **Our Response** | **We are reviewing the structure of our revised dWRMP and will seek to amend the structure to make it easier to follow.** |
| | Summary of any change to our revised dWRMP | The revised dWRMP plan will have a clearer structure. |
| | | |
| 15.3 | Representation | The dWRMP does not seem to make a clear distinction between baseline activities that are already funded under the WRMP for 2015 to 2040 and the additional work that would form part of the PP or AP for this WRMP from 2020 to 2080. |
| | **Our Response** | **We shall make clearer distinctions within our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Clearer distinctions included. |
| | | |
| 15.4 | Representation | We appreciate that AW is following industry guidance on linking up the WRMP and Drought Management Planning processes and in principle we find this helpful, but the document does not explain the relationship between the two plans from the perspective of consultation respondees: Quite a lot of drought management information is included the dWRMP but it is not clear whether this supersedes the information in the recent consultation on the draft Drought Management Plan, although it appears that it might. KCC gave detailed comments on the draft Drought Management Plan which we do not repeat here, but our key concern in that response was the Level of Service for Water Resource Zone 7 (WRZ7), and we do not find any information on that in this dWRMP. Our comments on the draft Drought Management Plan still stand. |
| | **Our Response** | **Responses from the Drought Management Plan (DMP) consultation were included in the dWRMP as part of the pre-consultation. This does not supersede the information in the DMP consultation.**<br><br>**We have concluded the consultation on our DMP and published our DMP Statement of Response which identifies how we have addressed the representations received. We have delayed the publication of our final DMP in order to ensure consistency between our revised dWRMP and DMP.**<br><br>**The DMP is an operational plan which enables us to put short term actions into place as a drought progresses whilst the WRMP is a strategic plan which will drive the planning and development of the new infrastructure needed to meet increasing demand over the long term. The longer term outcomes of our WRMP, including any** |

| 15. Kent County Council | | |
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| | | **changes to future levels of service, will in turn facilitate the development of our next DMP. We are confident that the measures identified within our DMP are adequate to ensure we are resilient to droughts which may occur within the next five years.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 15.5 | Representation | We are generally supportive of the move to longer term planning horizon for the WRMPs in this planning cycle. However, this long term outlook does appear to make the headline costs of the WRMPs less meaningful as they tend to be strongly influenced by very uncertain and costly infrastructure requirements that, at this point, appear to be needed late in the plan. This also makes it more difficult to meaningfully compare the total cost of the plans across different water companies, and this is compounded by some companies planning for 50 years and some for 60 years. |
| | **Our Response** | **We recognise the difficulty of comparing company plans with different planning periods but without any guidance on this from the regulators it has been left to the companies to select the duration they consider most appropriate for their planning. As well as presenting the total costs for our plan we have also presented the investment costs required in each AMP. These are summarised in table 80 for our Preferred Plan and 89 for our Alternative Plan. We consider this is the most transparent way to present the costs and intend to do something similar for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 15.6 | Representation | AW describes their "…innovative and long term strategy to actively engage with customers and stakeholders to better understand their needs, behaviour and priorities" in considerable detail over 17 pages and explains the outcomes from the various engagement methods and what the company has learnt from it, but we can find little objective presentation of the outputs. This makes it difficult for the reader to form their own opinion. |
| | **Our Response** | **The dWRMP included details of the pre-consultation undertaken for the dWRMP.**<br><br>**As part of the public consultation on the dWRMP we obtained the view of customers and stakeholders via a number of channels. The consultation encompassed:**<br><br>• **A representative customer survey with 1,000 participants.**<br>• **Customer focus groups with 66 participants.**<br>• **Stakeholder forums attended by 65 participants.**<br>• **Future Customers focus groups and survey with 1002 participants.**<br>• **A variety of other customer engagement via our PR19 programme.**<br>• **82 customer and stakeholder representations via our Consultation document and individual representations sent via letter and email.**<br><br>**We will be further consulting with customers and stakeholders on the revised dWRMP in Spring 2019.** |
| | Summary of any change to our revised dWRMP | The findings from this customer market research have informed our revised dWRMP. |
| | | |
| 15.7 | Representation | AW presents lists of "*..key aspects [that] were brought out of this pre-consultation exercise"* on page 108 and '*key themes that customers and stakeholders view as important*' on page 112. These seem to cover similar, though slightly different, issues. Neither provides any ranking of the importance attached to the listed items and there are many important questions that do not seem to have been covered, for example attitudes |

| 15. Kent County Council | | |
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| | | toward wastewater reuse and catchment management. In particular, KCC would like to see a ranking table of customers' priorities and 'willingness to pay' regarding different types of options and information on where these engagement activities took place. We understand that AW is offering two alternative plans for customers to now consider and respond to, but KCC would like to be able to evaluate |
| | **Our Response** | **We will produce a revised dWRMP in which the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account.** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
| | | |
| 15.8 | Representation | We note that some local authorities have taken part in stakeholder workshops that AW has organised during the pre-consultation period. Over recent years KCC is pleased to have had a programme of regular liaison meetings with AW in which we appraise each other on current issues relating to growth and water management. In these meetings, we asked to be engaged in workshops during the development of the dWRMP but this did not happen until after this draft plan was published. |
| | **Our Response** | **We did not hold stakeholder forums with local authorities during the pre-consultation stage but did meet with some local authorities. As part of the public consultation on the dWRMP we held eight stakeholder forums, including one in the Dour community, a Councillor from Kent County Council attended this. We also had a meeting with Kent County Council and District Councils in the area to discuss concerns regarding population growth.** |
| | Summary of any change to our revised dWRMP | The findings from the eight stakeholder forums have informed our revised dWRMP. |
| 15.9 | Representation | Housing and population growth<br><br>Housing growth is clearly exerting a major upward pressure on water demand and AW expects to need to accommodate a 65% increase in the number of households and a 38% population increase across its company area by 2080. The figures for WRZ7 are even more challenging at 14% and 9% respectively by 2025, 39% and 23% by 2045, and 87% and 47% by 2080.<br><br>In 2016 KCC provided Experian with up to date housing growth projections for the whole of Kent & Medway that could be used by all the local water companies in preparing their dWRMPs. It is difficult for us to check that we agree with the final figures used in each company's dWRMP because the local authority planning areas do not align with water company supply zones. The figures presented in Tables 27 and 28 seem plausible but we cannot comment further. We note in Appendix D that a Domestic Housing and Population Forecast report is included in the list of supporting documents but that it is marked "Regulator use and not to be published" as are many others. We would like to understand why these were not made available at the start of this consultation in the same way as other water companies have |
| | **Our Response** | **Following consultation on our dWRMP, we have updated our property and population forecasts. The changes consist of the following:**<br><br>**1. We adjusted the way the annual property build rate is applied. At draft plan, we calculated the company level annual build rate and then applied it based on the proportion of additional properties in each Water Resource Zone (WRZ). We have now calculated an annual build rather per WRZ and applied this so that our final property number in each WRZ matches the Experian forecast end point (2044/45).**<br><br>**2. The rebasing of the Experian forecast against our annual return property number saw a reduction in properties of 90,000at draft plan. These were then lost from the forecast. We have instead adjusted the annual build rate to incorporate the inclusion of these across the 25 year forecast. The rational here is that** |

| 15. Kent County Council | | |
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| | | **forecasted build rates in recent years have been too ambitious but the housing stock is still required to meet demand for housing in our supply area. Instead these properties will just be delivered later in plan than originally forecasted but not lost.**<br><br>**3. The population forecast is then derived by getting the end points by zone to match the Experian forecast and applying occupancy data from the original Experian trend.**<br><br>**We have also compared our revised property forecast with detailed information gathered from local authority plans. This analysis shows that, although zonal variations exist, we are forecasting slightly more total properties than local authorities in the first 15 years of our forecast. This difference, however, ranges from 0.07% and 1.94% of our total property count.** |
| | Summary of any change to our revised dWRMP | Property and population forecasts updated. |
| 15.10 | Representation | Per Capita Consumption (PCC)<br><br>Baseline PCC for the Dry Year Annual Average (DYAA) conditions is presented in Table 33 on page 182 and shows a gradual decline in most WRZs except for WRZ7 where it is expected to increase from the 2015/16 figure of 128.7 litres per head per day (l/h/d) to 142.8 l/h/d by 2080. The text suggests that this is partly due to decreasing household occupancy rates but it is not clear why this should disproportionately affect WRZ7. This trend is almost the opposite of the forecast by both South East Water and Southern Water (SW) that PCC will decline under baseline conditions due to "…replacement of older devices by newer, more water efficient versions as well as a shift towards more water efficient behaviour..". Whilst we recognise that there are regional differences, WRZ7 bears more similarity to its neighbouring zones – SEW's WRZ8 and SW's Kent Thanet WRZ - than it does to the WRZs in AW's Central region and we find it odd that there such wide differences in the forecasts. |
| | **Our Response** | **The method we use to forecast demand is consistent in all our water resource zones. The increase in baseline per capita consumption (PCC) over the planning period is associated with decreasing occupancy rates. Table 33 on page 182 shows this trend in all our water resources zones, the only difference being the metering programme in our Central zones that will make PCC decrease temporarily. From the late 2030s though, baseline PCC is forecasted to pick up again due to falling occupancy rates.**<br><br>**We use both a Multiple Linear Regression (MLR) model and a micro-component model to forecast household demand in our supply area. The micro-component model produces a breakdown of household consumption by micro-component in the base year and future years. In order to use the model to estimate future micro-components, a rate of change factor per year is applied to the following micro-components:**<br><br>**• WC flushing**<br>**• Shower use**<br>**• Bath use**<br>**• Dish Washer use**<br>**• Washing machine use.**<br><br>**Internal tap use and external use are assumed to remain constant (as a proportion of per household consumption). Information from the Market Transformation Project and United Kingdom Water Industry Research project reports have been used to forecast future trends in micro-component usage. Our dWRMP Technical Report 2.2 Household Demand Forecast – Micro-component Report provides a detailed explanation of the projections used.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 15. Kent County Council | | |
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| 15.11 | 17.10 | The Government's aspiration is for water companies to reduce PCC to 110 l/h/d and we are disappointed to see that under the Preferred Plan, unlike for the rest of the company area, the dWRMP includes no water efficiency options for WRZ at all and that PCC is, after a slight decline in the first five years, planned to increase steadily thereafter. |
| | **Our Response** | **Our revised dWRMP will include measures to reduce per capita consumption (PCC) in Water Resource Zone 7, in line with customer expectations and government's aspiration.** |
| | Summary of any change to our revised dWRMP | A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
| 15.12 | Representation | It was not long ago that WRZ7 was owned by Folkestone and Dover Water which was a pioneer of water metering and domestic water efficiency and drove down consumption to the current relatively low levels for SE England. On purchase by Veolia Water and later amalgamation into that company and then purchase by Affinity Water, KCC has repeatedly raised concerns that the resulting reduction in competition and the amalgamation into a company with very low meter penetration and high levels of PCC would see these exemplary demand management standards decline. We have recently repeated these concerns in liaison meetings with AW which has assured us that this will not happen. However, the Preferred Plan appears to go back on those assurances. |
| | **Our Response** | **Folkestone and Dover Water, Three Valleys Water, North Surrey Water, Tendring Hundred Water (the companies amalgamated into Affinity Water) have been under common ownership for over 25 years. Folkestone and Dover Water was the first company in England to roll out a compulsory metering programme, following the designation by the Secretary of State of its supply area as an area of water scarcity in 1999. Affinity Water continues to benefit from the experience of Folkestone and Dover Water in reducing demand and our revised dWRMP will include measures to reduce per capita consumption (PCC) in Water Resource Zone 7, in line with customer expectations and government's aspiration.** |
| | Summary of any change to our revised dWRMP | A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
| | | |
| 15.13 | Representation | In the same way as for the Housing and Population Forecast, the Micro-component report and other relevant supporting documents on PCC are not provided and are labelled as "*Regulator use and not to be published*". |
| | **Our Response** | **Reports will be made available.** |
| | Summary of any change to our revised dWRMP | Reports available on request during further consultation in Spring 2019. |
| | | |
| 15.14 | Representation | Catchment Management<br><br>On page 10 the dWRMP lists the key features of the plan including "Further protection of the quality of our water resources through our catchment management programme".<br><br>The dWRMP provides a considerable narrative about the virtues of enhancing natural capital through catchment improvements in Sections 4.5. In Section 8.5 it talks about "…exploring opportunities to align these [environmental enhancements] into integrated catchment schemes and developing a holistic catchment management approach to deliver wider benefits" and continues at length in a similar vein in Section 8.8 stating that "Our catchment management for water quality programme is being developed based on these principles". However only one (unspecified) catchment management option has been considered in the unconstrained option list in Section 12.2.3 and in Section 12.3.2 we note this option is screened out for unspecified reasons. The screening criteria are listed as: |

| 15. Kent County Council | | |
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| | | • Technical feasibility;<br>• Environmental acceptability; and<br>• Stakeholder acceptability<br><br>Although the option is not defined, technical infeasibility seems unlikely as Defra has documented a wide range of positive results from across the country as part of the Catchment-based Approach, as have many rivers trusts and other organisations. AW itself has explained the environmental acceptability at length in the dWRMP. Unfortunately, we can find no mention of customer or stakeholder views of catchment management in Section 5.<br><br>KCC asks for further information on the catchment management option that was considered and on the screening process to allow us to understand how the criteria have been applied in this case.<br><br>It is also confusing to find that Appendix C sets out a Catchment Management Programme of Works that includes a range of seemingly excellent projects and it lists a total of 13 benefits of these under the headings of Environment, Economic, Health, and Food, as well as 11 'Company benefits'. However, catchment management is not mentioned in the strategy for the Preferred Plan or the Alternative Plan in Figures 5 and 7. We can only assume that Appendix C describes a programme that is already funded under the current WRMP that runs from 2015 to 2040 and is not to be extended or added to under this new dWRMP. If this is the case, it needs to be made clear that it does not form part of this dWRMP, and KCC seeks clarification of how "Further protection of the quality of our water resources through our catchment management programme" is to be delivered within the PP and AP. |
| | **Our Response** | **We have a catchment management programme in place for the remainder of AMP6 (2015-20) and for AMP7 (2020-25) in accordance with our Business Plan investment portfolio.**<br><br>**The yields of catchment management schemes are difficult to quantify in terms of a supply demand benefit and those schemes will fall under our Water Industry National Environment Programme (WINEP) to enhance water quality. We fully intend to maintain our catchment management programme which has been successful and collaborative in AMP6, without the need for WRMP19 modelling to support its selection.**<br><br>**For further information on our proposed AMP7 catchment management programme, please see our AMP7 Business Plan, published in September 2018.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 15.15 | Representation | Drought resilience and Level of Service<br><br>The Preferred Plan would provide resilience to a drought event with a severity that can be expected to occur once in 60 to 80 years but no detail is provided regarding the drought resilience for the individual **Water Resource Zones (**WRZs). In the company's draft Drought Management Plan it was stated that "In WRZ7 (Dour) there is sensitivity to only the most severe droughts that are significantly worse than those in the historic record". We took this to mean resilience to drought with a return period of at least 1 in 200 years which is in line with Government guidance. The Preferred Plan therefore suggests a considerable decrease in the level of drought resilience for WRZ7, and KCC finds this unacceptable.<br><br>We note that, only under the Alternative Plan, is resilience to a 1 in 200 year drought event maintained. |
| | **Our Response** | **Our revised dWRMP will be resilient to a 1 in 200-year drought therefore more aligned with our Alternative Plan. This means that we will not propose a decrease in the level of drought resilience for WRZ7.** |

| 15. Kent County Council | | |
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| | Summary of any change to our revised dWRMP | Improved drought resilience as per the Alternative Plan plus increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024. |
| | | |
| 15.16 | Representation | Preferred Plan or Alternative Plan<br><br>The cost of the Preferred Plan is given as £1billion. At least for WRZ7, the Preferred Plan runs contrary to Ofwat's aspiration on driving down PCC to 110 l/h/d and allows PCC to rise in that zone. And, as explained above, it appears to reduce the drought resilience for WRZ7. KCC cannot support it for these reasons.<br><br>The cost of the Alternative Plan is given as £1.79billion. KCC can support the demand and supply management options included in the AP and the resilience to a 1 in 200-year drought, but it is difficult to support the cost without clearer information on exactly how it meets customer preferences. |
| | **Our Response** | **We are committed to reducing per capita consumption (PCC) and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**We will produce a revised dWRMP in which the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account.** |
| | Summary of any change to our revised dWRMP | A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
| | | |
| 15.17 | Representation | On-going engagement<br><br>In addition to AW's formal Statement of Response, KCC would welcome further discussion of these issues. We also look forward to exploring them as part of the on-going dialogue that has been established through our shared programme of liaison meetings. |
| | **Our Response** | **We welcome further engagement with Kent County Council and are committed to maintaining the on-going dialogue through liaison meetings.** |
| | Summary of any change to our revised dWRMP | We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
| | | |
| 15.18 | Representation | What are you doing on the demand management side? |

| 15. Kent County Council | | |
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| | **Our Response** | **Our revised dWRMP will include a leakage reduction of 15% in AMP7 which was supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**We are committed to reducing per capita consumption (PCC) and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**We will continue our universal metering programme as part of our Water Saving Programme (WSP) which we plan to complete by 2025. As part of the WSP programme we will continue to offer home water efficiency checks to all WSP customers. Alongside this, we will implement our innovative fast data option in AMP7 (2020-25) to provide customers with more detailed information about their usage through the most appropriate communication channels to help change behaviours and reduce consumption. We are expecting to deliver in total 17 Ml/d benefit from our fast data option which includes reduction in household consumption and customer side leakage.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
| | | |
| 15.19 | Representation | There is concern that there is not so much focus on Dour community and that momentum is being lost due to need to focus on other zones with higher PCC. |
| | **Our Response** | **This concern is noted. The revised dWRMP sets out targets to deliver further.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 15.20 | Representation | Are demand side savings achievable particularly in some areas? |
| | **Our Response** | **These are recognised as challenging and there is a risk however we have carefully considered the options offered to our Economics of Balancing Supply and Demand (EBSD) model and do believe they are feasible. Like with all things of this nature there is some uncertainty in the deliverability of the savings as we do not always have direct control but this is taken account for within our target headroom assessment which will be updated within the revised dWRMP.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 15.21 | Representation | Have you included tariff options for metering? |
| | **Our Response** | **These have been tested but there is a lack of appetite to take up particularly in more affluent areas. The use of fast data to drive behavioural change is seen to be more likely to succeed.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 15.22 | Representation | How does the plan cope with new housing developments? Surprised there are not more imports in the plan. |
| | **Our Response** | **In developing the revised dWRMP, we have worked with local authorities to identify and cater for new housing developments.** |

| 15. Kent County Council | | |
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| | Summary of any change to our revised dWRMP | We have updated our property and population forecasts. |

| 16. Kent Wildlife Trust | | |
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| 16.1 | Representation | Use water wisely and price water fairly<br><br>Particularly here in the South East, where water resources are most under pressure, it is crucial that we limit the amount of water wasted, by managing demand and reducing leakage. A NIC Report into the resilience of water supply infrastructure published in April 2018 recommends that companies should halve leakage by 2050; Affinity Water proposes a 56.6% reduction by 2045, a percentage reduction that is the highest proposed across the industry. We commend this ambitious target which sends a clear message to customer's that Affinity Water is committed to tackling this emotive issue.<br><br>On per capita consumption, the reduction proposed by Affinity Water for AMP7 is the lowest put forward at only 1.3%, and the long-term ambitions are similarly limited, despite current levels of water use amongst their customers being amongst the highest across the industry. The research exercise undertaken by Affinity Water on general attitudes to water usage revealed 76% of those engaged with were not concerned about the amount of water their household used whilst pre-consultation activities suggested that improving water efficiency was viewed as being of key importance by customers and stakeholders alike. Whilst we congratulate the relatively high meter penetration achieved by the company, and acknowledge that this should contribute to behaviour change, we would like to see more ambitious targets for water efficiency than those currently detailed to reflect the importance of targeting efforts to manage demand as a priority over supply side schemes. It would not be appropriate to invest in potentially environmentally damaging schemes to increase supply when there is so little ambition for demand management. We would also like to again highlight that, like many Wildlife Trusts, we have pledged our support to encouraging community water resource reduction and there are many opportunities to collaborate that are not currently being explored. |
| | **Our Response** | **We are proposing reducing leakage by a further 15% by 2025, in line with Ofwat and customers' expectations and we plan to further include aim to achieve a 50% reduction by 2050 as per National Infrastructure Commission report.**<br><br>**Our revised dWRMP will include a wider suite of demand management options to achieve more challenging levels of per capita consumption (PCC) aiming towards 110 l/h/d by 2040. We are committed to reducing PCC and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 compared with our current average consumption of 151.7 l/h/d which is ambitious.**<br><br>**We have included a greater emphasis on demand management options to try to reduce PCC in our supply area and to show ambition in doing so. Further clarity will be provided in the presentation of our water efficiency portfolio to detail the activities we are proposing in order to bring down PCC.**<br><br>**We welcome the opportunity to collaborate further.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and further reduction A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.l/h/d by 2040. |

| 16. Kent Wildlife Trust | | |
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| 16.2 | Representation | Keep our rivers flowing and wetlands wet<br><br>Managing the impacts of abstraction is critical to ensure that pressures on our waters, and the species they support, are reduced. The 2016 State of Nature report found that over half of our UK freshwater and wetland species are in decline, with 13% threatened with extinction. The Restoring Sustainable Abstraction programme has been important in driving improvement, and in informing decision making about where sustainable abstraction can take place, as the company acknowledges. We commend Affinity Water's efforts to date in reducing abstraction pressure around sensitive sources, their ongoing commitment to include a number of groundwater sources in AIM and their concern demonstrated regarding the impact of their existing operations on chalk streams, a rare and threatened habitat. In terms of limiting future abstraction, Blueprint for Water called for a water-neutral PR19, and as a whole the industry is expecting to put less water into distribution in England in both the short term and long term despite climate change and population growth. However by 2025, five companies including Affinity Water predict more water input into distribution. We suggest that a 'towards water neutrality' Performance Commitment should be adopted by those five companies as a bespoke environmental PC, in order to increase efforts to counter this trend.<br><br>In meeting predicted shortfalls, a twin-track approach of increasing water supplies and reducing water demand is advocated, and the current EFRA inquiry into regulation of the water industry asks whether companies are adequately delivering this. As such we welcome the main schemes for AMP 7 which deliver leakage reduction, efficiency savings, and improvements to existing resources, with larger supply-side schemes not required until later.<br><br>In terms of supply schemes such as bulk water transfers, water reuse and new reservoirs, our preference would be for the most environmentally acceptable schemes to be selected. Such schemes should only be developed where it can be demonstrated that all reasonable efforts to reduce demand have been implemented. Options should contribute to achieving good ecological status and certainly not result in deterioration. They must be sufficiently scaled to address problems of over abstraction, include measures to prevent the spread of invasive non-native species and, where appropriate, reduce the need for energy intensive systems.<br><br>We have not looked in detail at schemes proposed across Affinity Water's wider supply area but note that in their Southeast region (WRZ7/the Dour) there are no proposals for new groundwater abstractions however there will be reinstatement of/increased abstraction from some existing groundwater resources. A comprehensive assessment of the impact of reinstated or increased abstractions on the surrounding biodiversity must be carried out and abstraction proposals must demonstrate that they would not cause any deterioration in Water Framework Directive (WFD) status of local water bodies. It should be acknowledged that abstraction can damage the environment even after prolonged periods of heavy rain. We recommend that as part of its commitment to ensure the sustainability of all abstractions, Affinity Water works with partners on schemes to improve the rates of recharge by implementing changes in land use that retain surface water long enough for it to be absorbed rather than running out through efficient drainage systems.<br><br>We were disappointed to see that locally important but undesignated sites, such as Local Wildlife Sites, were not recognised as part of the environmental context of the preferred plan. Together with statutory designated sites, Local Wildlife Sites contain the most important habitats and species in each county and form the core of our biodiversity resource; they are integral to ecosystem resilience. These sites need to be identified as part of the environmental context for the plan, along with a commitment to protect them. |
| | **Our Response** | **We have included investment in our Business Plan to enable us to deliver the full Water Industry National Environment Programme 3 (WINEP3) reductions and we shall not be implementing any of the bringing back up to licence supply schemes.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced groundwater abstraction 42 Ml/d at the company scale. In our revised dWRMP, a further reduction of 36.31 Ml/d is planned by 2024.**<br><br>**Our extensive monitoring programme will enable us to identify these benefits in river flows and the ecology as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our** |

| 16. Kent Wildlife Trust | | |
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| | | **rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We agree with this point and have adopted this approach the environmental impacts are considered within the Strategic Environmental Assessment process and supply schemes are selected and sized appropriately to meet demand and provide resilience to meet future climate change and more severe drought conditions we are required to plan to.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and further reduction to 110 l/h/d by 2040. |
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| 16.3 | Representation | Protect and restore catchments from source to sea<br><br>In addition to the above measures, many companies plan to extend investment in catchment management and are considering a broader range of applications; not just protecting raw water quality as is now well established through initiatives such as Upstream Thinking, but also working, with partners, to deliver schemes to increase catchment resilience. This indicates a welcome recognition that the health of the natural environment underpins companies' operations, and must be protected. We are pleased to see catchment management options feature within Affinity Water's preferred plan, we would however continue to advocate for their playing a greater stewardship role in the catchments that they and their customers depend on, working in partnership with others to address problems at their source, rather than end of pipe.<br><br>We would like to see more commitment to collaboration at the catchment level. We would also like to again highlight that, like many Wildlife Trusts, we have pledged our support with particular reference to engaging with landowners within Affinity Water's Southeast region. We are keen to be involved with helping to create solutions that will help safeguard the resilience of the ecosystems from which raw water is sourced.<br><br>Finally, in better accounting for the value of the natural environment in future, a number of companies are starting to embrace natural capital accounting. As such we welcome the aspiration of Affinity Water's dWRMP to "preserve natural capital by leaving water in the environment" and also the baseline ecosystem services assessment undertaken, which highlights the need to work to better conserve wetland biodiversity across all regions. We would encourage Affinity Water to continue to develop and expand their ecosystem services approach in PR24 to ensure that these considerations more fully influence the options selection process. |
| | **Our Response** | **Our catchments provide the resources that sustain life as well as the goods and services that support and drive the nation's services and economy. We recognise that water is a valuable and shared resource on which we depend and impact both direct and indirectly that is critical to the success of many sectors, the health of the environment and quality of life. We have been working with our customers and communities to deliver innovative catchment interventions in response to the challenges faced and the importance of managing and protecting our water catchments in a sustainable way is at the heart of the development of our future plans.**<br><br>**Alongside this, we have developed a proactive approach to investigating and identifying solutions to pollution affecting the quality of drinking water. This is particularly important as we continue to reduce our abstractions to protect and preserve the environment, it is vital we preserve and protect the quality of what we can sustainably supply to our customers to ensure a greater resilience, both in terms of high quality drinking water our customers can trust and to the environment.**<br><br>**We face challenges from a number of pollution risks including industrial pollutants; pesticides and nitrate from agriculture, amenity and domestic sources.** |

| 16. Kent Wildlife Trust | | |
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| | | **We also face potential pollution threats from future land use changes in our catchments including new developments, mineral extraction and historic contaminants. Since PR14, we have developed an innovative programme to investigate the source of these pollutants, understand the reason why they are contaminating water and develop catchment-based interventions to improve water quality. We will continue to develop this programme throughout PR19 and PR24.** |
| | Summary of any change to our revised dWRMP | We are reviewing this for our revised dWRMP and considering whether this will now include options to reduce demand. |

## 17. Mayor of London (Greater London Authority)

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| 17.1 | Representation | Future water management<br><br>I am broadly supportive of the 'Alternative Plan' in your WRMP as it sets out more ambitious and necessary investment in infrastructure to achieve a higher level of long term resilience to drought, greater reduction in leakage and more extensive demand management measures. For example, in your Preferred Plan you say you will reduce leakage by 11 per cent but in your Alternative Plan you say you will reduce leakage by 15 per cent. As a minimum, I would suggest your Alternative Plan should be your final plan.<br><br>It is essential that existing water supplies are used in the most efficient way possible and I would expect you to have in place long-term strategies to maximise innovation to tackle this issue through greater use of water efficiency measures and programmes, water meters and water reuse before additional water resources are considered. I recognise that the scale of the projected supply-demand deficit suggests a new water resource is required. However, I would welcome more detail on these strategies than you have included in your draft plans in order to assess the implications for London.<br><br>The proposed new shared reservoir in Oxfordshire is welcomed and is a crucial part of providing security and resilience of supply for the people and businesses of London and the wider southeast. A number of other water companies are also calling for this reservoir and this option is supported by the findings of the Water Resources in the South-East Group modelling. Delivering this would be a complex process and I would have expected to see a timeline for this process, with associated budget, set out in your plans. To ensure that costs for such a significant and nationally important piece of infrastructure are distributed fairly I believe that the costs should be covered by general taxation or a combination of funding sources rather than borne by customers. The new resource will support the future resilience of the wider region and multiple water companies and improves London's resilience to drought, protecting the London and UK economy. |
| | **Our Response** | **Affinity Water welcomes the Mayor's support for the Alternative Plan. We will be presenting a revised dWRMP that goes further than the proposals set out in our draft Alternative Plan. This includes a leakage reduction of 15% in AMP7 as per Ofwat's challenge and include aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We have set a target in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**We are committed to working with neighbouring water companies and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part in Water Resources South East, Water Resources East and the Water UK Water Resources Long Term Planning Framework projects.**<br><br>**Within the regional context, our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. Based on work done to date, the preferred strategy is to secure additional reliable water by transferring water from a new regional reservoir in the Upper Thames catchment (referred to as the South East Strategic Reservoir) in partnership with Thames Water. This could support new abstractions in the Lower River Thames reaches. It should also increase our resilience and allow full conjunctive use of the surface and groundwater system. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns .** |

| 17. Mayor of London (Greater London Authority) | | |
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| | | **However, we are carefully considering the suitability of this option along with the appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>We will continue our work with Water Resources in the South East (WRSE) and Water Resources East (WRE) and will share our activity based costing model with other companies in the WRSE to promote transparency of cost of water transfers, which we believe is essential for water transfer arrangements. |
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| 17.2 | Representation | Resilience and Investment in infrastructure<br><br>You clearly set out in your plan the reasons why Affinity Water is more vulnerable to drought than surrounding water companies that serve London. London needs a resilient water supply to maintain its position as a leading global city and I would expect that level of resilience to be the same for all London's customers, regardless of supply company. The drought in Cape Town highlights a situation which London must avoid at all costs.<br><br>While it is good news that you are no longer in drought, the effects of a severe Level 4 drought on London would lead to an unacceptable range of impacts including major economic, health and societal impacts. For this reason, while this may be challenging, I believe you need to plan now to meet Ofwat's recommended 1:200-year level of resilience to reduce this risk.<br><br>I am pleased to see that your Alternative Plan includes a target to reduce leakage from your network by 15 per cent, which I believe is the minimum reduction that you should be achieving as some other companies are proposing to go further than this for example Essex & Suffolk Water. I do not believe that the target of 11 per cent reduction in your Preferred Plan is sufficient. However, your draft plans do not provide me or Londoners with the certainty that either target will be delivered or what actions you will take if you are not on track. It is essential that you provide a detailed roadmap of how this will be achieved and ring fence investment to provide certainty over delivery. I would like to see further investment in new technology for leakage detection and would suggest you should consider working with the London Skills Agency to identify training opportunities in response to the skills shortage in leakage technicians.<br><br>You should also employ innovative approaches to minimising disruption in London when carrying out leakage repairs and maintenance work. I would encourage you, as I have London's other water companies, to work closely with TfL to coordinate activities and minimise disruption across this city. I know that TfL are keen and willing to continue working with you on this issue. You should ensure that you share data with TfL and also London Boroughs to facilitate these activities but also share data on vulnerable customers, communications and targeting of water efficiency programmes. |
| | **Our Response** | **In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.**<br><br>**Between 2020 to 2025, we will reduce leakage by 15% on top of a 14% reduction between 2015 to 2020 (compared to an industry average reduction of 4% over the same period) as detailed in our revised dWRMP, and supported during our consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**We will continue to work closely with TfL to coordinate activities and minimise disruption across this city and share data with TfL and London Boroughs to facilitate these activities and also share data on vulnerable customers and** |

| 17. Mayor of London (Greater London Authority) | | |
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| | | **communications. We are investing in a new system to allow data sharing and we are keen to form new partners to ensure customers in vulnerable circumstances receive the right levels of support.**<br><br>**We will continue our Water Saving Programme which we launched in 2015, helping customers to manage their water use to save water, energy and money. This programme and other water efficiency initiatives, such as continuing to provide free water saving devices for customers will assist in our aim to reducing average water consumption to 129 litres per head per day by 2025.** |
| | Summary of any change to our revised dWRMP | Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
| 17.3 | Representation | This response is on behalf of the Mayor of London. The Greater London Authority (GLA) is the strategic authority for London. The Mayor is required to prepare and publish a London Environment Strategy by the Greater London Authority Act 1999 ('GLA Act' as amended), under changes made by the Localism Act 2011, which includes policies and proposals in relation to climate change Adaptation. These require the Mayor to consider the impact of climate change and potential mitigation proposals for adaptation for London.<br><br>The Mayor published his draft London Environment Strategy in August 2017, setting out his vision to make London the greenest global city. This includes objectives to ensure an efficient, secure, resilient and affordable water supply for London and Londoners.<br><br>The following response is divided into the following areas:<br><br>• Preferred versus Alternative Plans<br>• Ambition on demand management<br>• Assurances about future water resources<br>• Supporting collaboration |
| | **Our Response** | **N/A** |
| | Summary of any change to our revised dWRMP | N/A |
| 17.4 | Representation | Preferred versus Alternative Plans<br><br>1. The Mayor supports Affinity Water's (Affinity) decision to use a 60 year planning timeframe for this WRMP. Of the Water Resource Zones (WRZ) that cover London-based customers, all three are predicted to be in supply-demand deficit before 2060. The Pinn WRZ, which is largely comprised of Londoners in the northwest, will already be in deficit from 2020, while the Colne and Wey WRZs, which cover parts of northwest and west London are forecasted to be in deficit by 2039 and 2059, respectively. The draft WRMP identifies four key issues to be consulted on. The following sections take each of those issues in turn as they relate to the Preferred and Alternative Plans.<br><br>Demand management<br><br>2. The WRMP asks consultees about whether Affinity's key stakeholders and community partners are willing to commit to working in partnership with Affinity to work towards ambitious targets for lower water consumption. The Mayor is committed to working with Affinity and the other London water companies to lower water consumption and increase resilience. The Mayor encourages Affinity to invest further in water efficiency programmes, including coordination with energy retrofit programmes (including the Mayor's Energy for Londoners retrofit programmes) and better communication of the availability and benefits of water efficiency programmes to customers. Affinity should also collaborate with Local Authorities to target demand management activities and communications, including to work with them as estate managers. This is necessary to reduce the supply-demand deficit and improve resilience. The Mayor supports the Alternative Plan, which includes demand management options that are not included in the Preferred Plan, including comprehensive household water audits and retrofits, targeting housing associations, water audits for commercial properties, community water efficiency schemes and communal rainwater on a new development.<br><br>Sustainability reductions |

## 17. Mayor of London (Greater London Authority)

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| | | 3. The WRMP asks consultees about 'the different options for sustainability reductions to improve the water environment'. In light of the forthcoming requirements from the Environment Agency, which are likely to require 39 Ml/d sustainability reductions, the proposed 10 Ml/d reductions in the Preferred Plan are not a realistic option. Asking consultees to choose between the two plans suggests a choice between the two that is a false one. The Mayor supports the Alternative Plan option to meet the 39 Ml/d sustainability reductions.<br><br>Drought<br><br>4. The WRMP asks consultees about 'levels of drought resilience and use of drought permits and orders for additional abstraction'. The impacts of climate change and the request from Ofwat demonstrate a clear need for Affinity to plan for resilience in a 1 in 200 year drought. The Mayor strongly agrees with Affinity that the use of emergency drought orders for rota cuts and standpipes would be unacceptable for Londoners. Evidence from recent drought planning exercises with London's emergency responders and business continuity leaders suggests invoking emergency drought response measures in London would be catastrophically disruptive. The Mayor supports the Alternative Plan option to maintain water supply up to the 1 in 200 drought without emergency drought orders. Planning for this will require greater demand reductions and increased supply capacity, however not planning for this would increase the risk of vulnerability to a severe drought.<br><br>Leakage targets<br><br>5. The WRMP asks consultees about 'further leakage reduction'. The Mayor recognises Affinity's leadership in the UK as a leader on leakage reduction and supports the innovative approach Affinity has been using to detect leaks and the target to increase coverage of network monitoring for leak detection to 95 per cent by 2019/20. However, the Preferred Plan target of 11 per cent leakage reduction is not enough. In line with the challenge from Ofwat and building on past success on leakage reduction, Affinity should be targeting a minimum of 15 per cent reduction. This is of particular concern to Londoners because it is likely that the WRZs covering London are the oldest and most susceptible to leakage. The WRMP indicates that only five out of eight WRZs will be below 'economic level of leakage' by 2025 meaning there are still cost-effective leaks to repair, and it is likely the London WRZs are the ones that will not be. The Mayor supports the Alternative Plan target to meet 15 per cent leakage reduction.<br><br>6. The Mayor believes the Preferred Plan is not ambitious enough on these four key issues and is not acceptable for Londoners. In selecting the Preferred Plan over the Alternative Plan, Affinity cites risk as a key concern. It seems, however, that Affinity is conflating business and delivery risk with supply and resilience risk. Affinity states that the Alternative Plan is riskier because it doesn't leave enough time to mobilise action, but with the estimated supply-demand deficit it is vital that action is taken as soon as possible and the Preferred Plan does not do enough. Affinity needs to be planning now for the future in which the 1 in 200 drought is increasingly likely, as well as other risks, such as water quality, sustainability reductions, and reliance on other water companies. Investments made now toward a more resilient future are also investments that will have positive impacts for the current system. The Mayor believes the Alternative Plan should be the starting point and the following sections provide further comments on how this could be improved further. |
| | **Our Response** | **Affinity Water welcomes the Mayor's support for our decision to use a timeframe of 60 years beyond the statutory minimum of 25 years.**<br><br>**We also welcome the Mayor's support for working collaboratively on reducing water consumption with the GLA, the Mayor's Office and the London Boroughs, something which we will pursue further still.**<br><br>**Stakeholder and customer feedback has supported higher levels of reductions. Those that are green and amber in the WINEP tables are now included in our Business Plan. This volume, which may need to be reduced, is included in the company wide reduction of 36.31 Ml/d planned for AMP7 (2020-25) implementation in the revised dWRMP.**<br><br>**We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought** |

| 17. Mayor of London (Greater London Authority) | | |
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| | | **permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 and supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**We will be presenting a revised dWRMP that goes further than the proposals set out in our draft Alternative Plan.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
| 17.5 | Representation | Ambition on demand management<br><br>Innovation in household demand management<br><br>7. Affinity Water has one of the highest per capita consumption (PCC) rates in the UK, with the Pinn WRZ at 164.83 litres per head per day (l/h/d). It is clear more ambition is needed on demand management. The Mayor supports the Alternative Plan PCC target of 120 l/h/d by 2045 and would encourage a shift to the 110 l/h/d target by 2045 as intended by Government.<br><br>8. Affinity's customer focus group findings suggest Affinity's customers are on average less sensitive to price signals and more willing than average to support paying more to fund improvements in infrastructure, resilience and levels of service. Similarly, Affinity have recognised that tariff trials have been found to be ineffective for those more affluent customers who are less sensitive to price increases. Innovation on tariff-setting and behaviour change across all water users is necessary. Affinity should look to other UK examples, such as Southern Water's trial of innovative community-scale action to incentivise water efficiency by users less sensitive to price signals, or examples internationally of high tariffs for non-essential uses, such as outdoor irrigation.<br><br>9. The Mayor expects Affinity to commit to a more forward-thinking and longer-term strategy for promoting and delivering water efficiency, making best use of innovation in water efficiency and water efficient products. The Preferred Plan does not contain water efficiency strategies and the Alternative Plan contains only short-term strategies to 2020-2023. The Mayor believes greater consideration of innovative, medium- and long-term demand management strategies is needed. Examples of medium and long-term opportunities for innovation the Mayor expects Affinity to include are:<br><br>• Improved integration of water reuse at household and development scale<br>• Better integration of sustainable drainage and rainwater harvesting as potable demand replacements<br>• Improvements in integrated water management for major development projects<br>• Developer incentives to reduce consumption in new developments below 110 l/h/d<br>• Take into consideration more water efficient products becoming standard and promoting these through retrofit programmes<br>• Skills and programme improvement internally and with third parties to improve delivery of water efficiency programmes and water reuse systems<br><br>10. Ofwat also recently issued a report on long-term demand reduction strategies, which should be used to help identify new options for Affinity to incorporate.<br><br>Gap in delivery of non-household demand reduction<br><br>11. Non-household water use accounts for 16.6 per cent of total demand in the Pinn WRZ.<br>London's businesses and economy are particularly sensitive to changes in water |

| 17. Mayor of London (Greater London Authority) | | |
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| | | availability. The shift last year of non-household customers to separate retailers presents a risk to demand reduction into the future. Affinity has not set any targets in the Preferred Plan for non-household demand reduction and included only one strategy (metering of unmeasured non-household properties). Despite the introduction of retailers to the non-household market, targets should still be set within Affinity for reductions in non-household water consumption.<br><br>12. Affinity should complement their household water efficiency programmes with urging retailers to develop and promote programmes to bring water use down for London's businesses, saving water and saving businesses money, which will be necessary to help close the supply-demand deficit. The Mayor supports the additional programme included in the Alternative Plan to deliver commercial water audits via retailers but funded by Affinity.<br><br>13. Mechanisms for wholesalers to make retailers accountable for water efficiency and customer service need clarification. There is currently no obvious process by which a wholesaler will support retailers with water efficiency promotion despite clear benefits to the wholesaler for example through reductions in customer side leakage. Similarly, it is unclear whether the retailer or wholesaler is accountable and who leads customer engagement when things go wrong on the wholesale side, as was evident during recent outages in the capital. A clear protocol needs to be implemented for how the wholesaler-retailer relationship relates to customers. The Mayor believes that Ofwat has a significant part to play in this, both in terms of ensuring the water efficiency benefits of the retail market are realised and ensuring customer service responsibilities are resolved. The Mayor will raise this matter with Ofwat directly. The Mayor's Water Advisory Group can also play a role in convening and mediating those discussions.<br><br>Collaborating on water reuse<br><br>14. As part of the options appraisal, Affinity considered a handful of non-potable reuse options, however, all indirect effluent reuse schemes were rejected. For the London WRZs, the Preferred Plan does not include any reuse options and the Alternative Plan includes only one, a communal rainwater harvesting system for a new development in the Pinn WRZ. The lack of non-potable water reuse is a missed opportunity, given the potential water reuse presents in helping secure a resilient water supply.<br><br>15. The Mayor supports increased re-use through Integrated Water Management Strategies (IWMS) and would recommend that Affinity collaborate more with developers, Thames Water (as the wastewater supplier) and third party organisations to integrate water reuse as part of Affinity's strategy.<br><br>Support for metering<br><br>16. The Mayor supports Affinity's Water Saving Programme and ambition to increase the meter penetration from the current 45 per cent to 90 per cent penetration by 2025 in the Central region, which includes the three WRZs that cover London. This approach aligns with the findings from the Water Resources in the South East (WRSE) analysis of regional water resource options. Affinity's compulsory metering scheme is eighth on the list of key schemes identified by WRSE for volume of water saved and overlap in future scenarios, and is the only demand management scheme to make the list, making it the demand reduction scheme with the biggest impact across the region.<br><br>17. The Mayor supports Affinity's approach to making the most of existing metering infrastructure and reducing waste by enhancing the current metering programme in the short-term and planning to rollout smart meters at the end of the useful life of those meters. However, Affinity should consider beginning rollout of smart meters now as part of the metering programme to achieve the water saving and monitoring benefits sooner. In the absence of smart meters in the short-term, the Mayor supports the Fast Data Option,<br>Affinity's approach to combining logging data and hydraulic models to provide customers with more frequent water consumption information. |

| 17. Mayor of London (Greater London Authority) | | |
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| | **Our Response** | **In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We have set a target in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 and supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**These activities are reflected in our baseline demand forecast for WRMP 2019 and thus we are forecasting an initial reduction in total demand during the remainder of AMP6 and into AMP7 (2020-25). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area.**<br><br>**Our demand forecast is supported by actual data gathered from our Water Saving Programme which shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is consistent with other metering programmes in the water industry.** |
| | Summary of any change to our revised dWRMP | We are committed to reducing per capita consumption and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |

| 17. Mayor of London (Greater London Authority) | | |
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| 17.6 | Representation | Assurances about future water resources<br><br>18. The Mayor supports Affinity's approach to fully utilising existing sources of water before developing new sources, while also not planning to take more water from chalk aquifers.<br><br>19. However, a supply-deficit is still projected in the future and planning will need to begin now to ensure that new supplies can be made available in the appropriate timeframe. The key new water supply identified by Affinity is the Upper Thames Resource Development option. The proposed new regional reservoir aligns with the needs of Thames Water for the Abingdon reservoir and is welcomed and seen as a crucial part of providing security and resilience of supply for the people and businesses of London, contributing directly to meeting the Mayor's Good Growth Policy. The reservoir could provide valuable resources to Affinity, but also Thames Water and SES Water, both of which also supply London, as well as those in London's commuter areas. The WRSE models have indicated that a new reservoir would provide the highest volume of water amongst the potential regional options and that the modelling outputs regularly select the reservoir as one of the prevalent options to meet future water requirements under each of the future scenarios. This supports the reservoir in contributing to regional resilience of water supplies.<br><br>20. In the Preferred Plan, 50 to 100 Ml/d will be needed from the regional reservoir by 2055, where as in the Alternative Plan, 100 Ml/d will be needed by 2039. According to Thames Water's Preferred Plan, their intention would be to develop the reservoir by 2048. The Mayor believes that Affinity should be following the Alternative Plan, but with either approach, Affinity needs to start collaborating now with Thames Water and others to ensure the resource is developed in time for Affinity's need. There is a significant lead in time to plan and build a new reservoir, including gaining the necessary permissions. It is essential that early planning for the new resource take place in the coming price review period to give increased planning certainty and ensure that delivery is not delayed. The Mayor would encourage Affinity to provide assurances that funding will be allocated within PR19 to initiate the planning process for this new resource to avoid delay in delivery. Affinity should share a detailed time frame for delivery, including the trigger point and date for moving forward with development, and include the GLA in discussions when taking plans forward for development. |
| | **Our Response** | **We are committed to working with neighbouring water companies and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part into Water Resources in the South East, Water Resources in East and the Water UK Water Resources Long Term Planning Framework projects.**<br><br>**Within the regional context, our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. Based on work done to date, the preferred strategy is to secure additional reliable water by transferring water from a new regional reservoir in the Upper Thames catchment (referred to as the South East Strategic Reservoir) in partnership with Thames Water. This could support new abstractions in the Lower River Thames reaches. It should also increase our resilience and allow full conjunctive use of the surface and groundwater system. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather pattern.**<br><br>**However, we are carefully considering the suitability of this option along with the appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | We will continue our work with Water Resources in the South East (WRSE) and Water Resources East (WRE) and will share our activity based costing model with other companies in the WRSE to promote transparency of cost of water transfers, which we believe is essential for water transfer arrangements. |

## 17. Mayor of London (Greater London Authority)

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| 17.7 | Representation | Supporting collaboration<br><br>Regional collaboration and leadership<br><br>21. The Mayor fully supports Affinity's forward-thinking approach on regional collaboration and active involvement in both WRSE & Water Resources East. The Mayor agrees that Affinity is well-placed to act as an inter-regional hub between the north and west. Affinity's call for a 'system operator/regional coordinator' would also be key to Affinity's water resource and economic resilience, especially in development of shared resources like the regional reservoir.<br><br>Data and information sharing<br><br>22. There is a need for more transparency of water utility data and the Mayor believes Affinity Water (and other London water companies) should make data more readily available to stakeholders (including the GLA and London Boroughs) to:<br><br>• Better target vulnerable customers for the Priority Services Register, general communications and for emergency/incident response<br>• Improve London-wide efficiency, drought and emergency communications<br>• Understand London-wide consumption patterns to inform future policies and programmes<br>• Better target retrofit activities for both households and businesses<br>• Target water efficiency communications campaigns<br><br>23. More open and transparent data and better data standardisation between water companies would bring benefits for planning future water initiatives, communicating with customers and monitoring water use. It would also bring benefits to the water retail market, where retailers currently report issues with the type and availability of data preventing progress in the development of this market. Where possible, data should be shared publicly through open data portals, similar to the Mayor's London Datastore or the Government's Open Data initiative. When sensitive information is involved, Affinity Water and other utilities should develop agreements and procedures for sharing data with key stakeholders, such as the GLA and Local Authorities. |
| | **Our Response** | **Affinity welcomes the Mayor's support for our role within Water Resources South East and Water Resources East. We also welcome your support for further regional co-ordination especially in development of shared resources.**<br><br>**We believe strongly that it is important to share available resources where appropriate and we already do so with neighbouring companies. We are working with those companies to expand this work. We are working on data sharing for customers in vulnerable circumstances, with which recent legislative changes have assisted. Further information is available in our PR19 Business Plan submission.** |
| | Summary of any change to our revised dWRMP | We will continue our work with Water Resources in the South East (WRSE) and Water Resources East (WRE) and will share our activity based costing model with other companies in the WRSE to promote transparency of cost of water transfers, which we believe is essential for water transfer arrangements. |

| 18. Monks Horton Parish | | |
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| 18.1 | Representation | I would appreciate it if you could attach your draft WRMP to me asap please and, also inform us of the Samphire Ho event in relation to the same. |
| | **Our Response** | **Done.** |
| | Summary of any change to our revised dWRMP | N/A |

| 19. NFU | | |
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| 19.1 | Representation | Whilst we welcome the objectives described in dWRMP19, its long term success will depend on the level of real delivery on the ground, and how quickly action takes place.<br><br>We welcome the themes contained within the draft plan, particularly those referring to a 90% metering penetration by 2025, continued leakage reduction, and more bulk transfer of water from other companies.<br><br>We welcome the focus on drought risk and management featured in dWRMP19. In summary, our ambitions for Affinity Water's WRMP are that it should:<br><br>1. Demonstrate an appetite for effective engagement between farmers and Affinity (together with regulators) to understand how to better work together to make water use more sustainable<br>2. Recognise the importance of climate change and its potential impact on water resources during drought events. Further research may be needed to better understand how to reduce uncertainty in water resources planning for the benefit of farmers<br>3. Contribute to improvements in resilience which underpin water company operations, including prevention of abstraction that has (or is likely to have) a damaging effect on the environment. Moreover, explain how quickly any necessary remedial action will be taken<br>4. Commit Affinity Water to a twin-track approach (if not multi-track approach) that assesses demand management and new resource options on a long-term basis, taking full cost and benefit account of environmental and social effects<br>5. Favour the introduction of compulsory household metering, particularly in areas where water resources are under stress to the point of full cost/benefit justification, and as soon as practicable alongside improved tariffs and measures to protect those on low incomes<br>6. Contain water efficiency plans to encourage and incentivise engagement and action on water usage between Affinity and its customers<br>7. Recognise the importance of leakage reduction plans that take full account of environmental costs and benefits, and fully achieve sustainable economic levels as quickly as possible<br>8. Explore opportunities for Affinity to further investigate sharing water resources and developing new resources in partnership with other companies, and with other sectors (like farming)<br>9. Acknowledge government's commitment to reduce water use, as stated in Defra's 25 year environment plan<br>10. Look beyond its current focus on public water supplies. There is a need for increased awareness of the needs of other water users such as farming, and how best we can drive forward efficiency and optimise water use |
| | **Our Response** | **1. We are working closely with farmers across our catchments on a variety of schemes aimed at protecting water quality. We have also explored ways to encourage water efficiency on farms. For example, we funded the upgrade of a farmer's pesticide handling area in the Bow Brook catchment in Hampshire. The main focus of this work was to safeguard the local watercourse from point source pollution from the farmyard. Alongside protecting water quality, we also took the opportunity to help the farmer install rainwater harvesting from the improved facility. The farmer now uses the harvested rainwater to fill up his pesticide sprayer, which not only improves pesticide efficacy, due to softer water, but also reduces pressure on local water supplies. We plan to help more farmers in target catchments upgrade their farmyards for the protection of water quality and, where possible, we will explore assisting with funding the installation of rainwater harvesting on these facilities.**<br>11.12.<br>**2. We have undertaken a lot of work to understand the impacts of drought and climate change on our deployable output. As part of our revised dWRMP we will be planning to meet a more severe level of service then was met in our preferred plan in our dWRMP. In the longer term, this would reduce the frequency we would anticipate imposing Temporary Usage Bans and other demand and supply side drought measures which would benefit farmers. In addition to this outside this current planning process we will continue to work with our regulators and other water companies to improve methodologies and reduce uncertainty in water resource planning process.**<br>11.13. |

| 19. NFU | | |
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| | | **3. Within this current AMP (2015-20) we have committed to reducing our abstraction by 42 Ml/d as well as implementing a number of morphological and river restoration projects in order to reduce our impact on the environment. we will be further committing to a reduction of 36.31 Ml/d within the next five-year period. On top of this we are working with neighbouring companies to explore the possible promotion of a regional reservoir to provide long term supply resilience to the region.**<br><br>**4. This is exactly the approach we are taking within our planning. In the near-term future, we will be working with our customers to reduce demand through water efficiency messaging, the provision of usage information, the installation of meters and reduction of leakage. In parallel with this, we are working to develop new resources to provide additional resilience and availability of water. This includes the possible promotion of a regional reservoir to provide long term supply resilience to the region.**<br><br>**5. This is currently being implemented and is included within our planned approach**<br><br>**6. This is currently being implemented and is included within our planned approach.**<br><br>**7. This is currently being implemented and is included within our planned approach.**<br><br>**8. Affinity Water participate in both WRSE and WRE, through our work in WRE we have worked alongside multi-sector participants and through our third party optioneering for our draft WRMP we have examples of third party options and an option to potentially develop local agricultural storage in conjunction with the potential option of a reservoir to aid supply in our Central region. We see real benefit in continuing to explore opportunities with third parties and different sectors. We have now published our trading and procurement code and have submitted our bid assessment framework as part of our PR19 submission to Ofwat, both of which should also help to support future opportunities for market and multi-sector participation in water trading and sharing with Affinity Water. Further, we would be more than happy to put the NFU in touch with WRSE, as we have in the past with third parties, in order that the NFU can understand how they can participate in the work that WRSE do.**<br><br>**9. This is currently being implemented and is included within our planned approach.**<br><br>**10. We will continue to work in partnership with farmers through our catchment management programmes and through multi sector long term planning projects such as WRSE.** |
| | Summary of any change to our revised dWRMP | Improved drought resilience as per the Alternative Plan plus increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.<br><br>Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>There will be no new groundwater from chalk aquifers in our Central region. |
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| 19.2 | Representation | Regional coordination<br><br>We note that Affinity Water relies to a significant extent on groundwater abstraction and that it faces major challenges in terms of population growth and climate change. The Vale of St Albans is particularly vulnerable to water stress and environmental pressures; and the abstraction impacts on local chalk streams are significant.<br><br>We support the principle of more regional coordination through WRSE and WRE but would like to learn more about what this will mean in practice; and how ideas such as the possible introduction of a 'System Operator' might affect farmers as customers and abstractors.<br><br>The NFU hopes that a National Policy Statement (NPS) for Water Resources being |

| 19. NFU | | |
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| | | developed by Defra will streamline the approvals process for new schemes. |
| | **Our Response** | **At present, we have a Groundwater/Surface Water split of approximately 60/40 which will change in the future with sustainability reductions and increases of our surface water availability bringing it closer to 50/50 or more in favour of the surface water. As part of our National Environment Programme, we are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced 42 Ml/d at the company scale whereas in our revised draft plan, a further reduction of 36.31 Ml/d is planned which will bring the total reduction in abstraction to about 10% of the total resource base at present. Our extensive monitoring programme will enable us to identify these benefits in river flows and the ecology as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.**<br><br>**We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.**<br><br>**Within the regional context, our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. Based on work done to date, the preferred strategy is to secure additional reliable water by transferring water from a new regional reservoir in the Upper Thames catchment (referred to as the South East Strategic Reservoir) in partnership with Thames Water. This could support new abstractions in the Lower River Thames reaches. It should also increase our resilience and allow full conjunctive use of the surface and groundwater system. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns. We are however carefully considering the suitability of this option along with the appropriate delivery date.**<br><br>**Chapter 14.6 of our dWRMP details our view and current understanding of the potential for a system operator approach and the revised dWRMP will provide additional information regarding our plans for stimulating water trading opportunities with third parties.**<br><br>**The concept of 'system operator' is one approach that regional groups could explore to understand whether an independent body managing the transportation and transfer of water across company boundaries could more efficiently enhance water trading and sharing of existing and new water resources. The concept itself can be applied at many levels, for example it could be trialled for conjunctive use asset management across multiple company boundaries, and would not need to be applied to the whole of a given region at organisational level to be able to support a resilient regional outcome (for all sectors in a region that rely on water resources). Affinity Water would be happy to meet with the NFU to discuss our work on regional co-ordination, water trading and concepts like system operator.**<br><br>**In preparing our WRMP19 we have considered market opportunities for third parties and**<br>**neighbouring water companies to provide water to us. We are keen to foster future opportunities in water trading, demand management and leakage services and our bid assessment framework will provide third parties with confidence that options they propose will be assessed on a level playing field with in-house options.**<br><br>**We believe there is scope for us to incentivise retailers to offer creative demand** |

| 19. NFU | | |
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| | | **management services to their non-household customers; a model that could ultimately lead to a cascade of water from water-rich areas to water-stressed areas and drive innovation in the market.** |

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| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024<br><br>Planning for development of a new regional reservoir working with Thames Water. We are carefully considering the need for and suitability of this option, and the suitability of other strategic options, along with the appropriate delivery dates.<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this "Supply 2040".<br><br>We will continue our work with Water Resources in the South East (WRSE) and Water Resources East (WRE) and will share our activity based costing model with other companies in the WRSE to promote transparency of cost of water transfers, which we believe is essential for water transfer arrangements.<br><br>In preparing our WRMP19 we have considered market opportunities for third parties and neighbouring water companies to provide water to us. We are keen to foster future opportunities in water trading, demand management and leakage services and our bid assessment framework will provide third parties with confidence that options they propose will be assessed on a level playing field with in-house options.<br><br>We believe there is scope for us to incentivise retailers to offer creative demand management services to their non-household customers; a model that could ultimately lead to a cascade of water from water-rich areas to water-stressed areas and drive innovation in the market |
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| 19.3 | Representation | Preferred and alternative plans<br><br>We are pleased to note that dWRMP19 demonstrates a commitment to investigating the potential for sharing water resources and developing new resources in partnership with others, as part of the WRSE and WRE initiatives.<br><br>Given the particular, and potentially acute, water pressures faced by Affinity Water the development of both a preferred plan and an alternative plan seems entirely sensible.<br><br>We note Affinity's intention to implement sustainability reductions but we are not clear about how quickly these will be introduced.<br><br>We welcome Affinity's commitment to water efficiency and smart metering, particularly in view of the future risk of more frequent and longer droughts. More research to improve our understanding of the most effective approaches to metering, tariffs and customer behaviour are required.<br><br>It is difficult for us to assess whether efficiency targets are sufficiently ambitious, but we welcome commitments contained in dWRMP19. |
| | **Our Response** | **Following consultation with our regulators and local stakeholders we will adopt a 36.31 Ml/d sustainability reduction volume in our revised dWRMP which will be delivered by 2024.**<br><br>**Research and understanding of effective demand management techniques is constantly improving and we work closely with other water companies and stakeholders to understand better the most effective approaches.**<br><br>**We believe we have put together an ambitious plan however since the publication of the dWRMP we have further reviewed our demand management options and will be committing to helping customers reduce their usage even further within our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |

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| 19.4 | Representation | Drought management and planning<br><br>We note Affinity's intention that 'during times of drought we will temporarily restrict demand if necessary', and would like to better understand its potential impact on farmer customers. Farms are extremely vulnerable to supply interruptions.<br><br>We support Affinity's position on becoming more resilient. We doubt that the future use of standpipes in the street would be either operationally possible or socially acceptable. |
| | **Our Response** | **We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.**<br><br>**We would welcome the opportunity to work with the National Farmers Union to discuss concerns around interruptions to supply for farmers as these concerns cannot be address explicitly through the dWRMP Statement of Response or revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024. |
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| 19.5 | Representation | Managing leakage<br><br>Whilst the NFU recognises that it is not always technically viable (nor economically sound) to achieve zero leakage, more needs to be done by water companies to understand the full benefits as well as costs of leakage reduction, and to achieve economic leakage levels as quickly as possible. |
| | **Our Response** | **Our revised dWRMP will include a leakage reduction of 15% in AMP7 and supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report. This goes beyond the economical level of leakage which we are already operating below.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
| | | |
| 19.6 | Representation | Using less water<br><br>We support government's commitment to see water use fall, as stated in its 25 year environment plan. We note that in its report 'Preparing for a drier future', the National Infrastructure Commission says that 'savings to 600 Ml/day by 2050 and near universal smart metering would reduce average (measured and unmeasured) water consumption in England from the current 141 to 118 litres per head per day, similar to Water UK's most ambitious pathway'.<br><br>The ambition of the alternative plan to drive per capita consumption down to 120 litres per day seems appropriate and we would support Affinity in future working with customers and stakeholders to achieve this target. |
| | **Our Response** | **We have set a target in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.** |

| 19. NFU | | |
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| | Summary of any change to our revised dWRMP | Reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 19.7 | Representation | Balancing the needs of the environment and customers<br><br>Given local pressures on the environment, and the 'no deterioration' obligations of the Water Framework Directive (WFD), further action may need to be taken where water use from existing water resources has, or is likely in the future, to have a detrimental impact on the water environment because of abstraction.<br><br>Many of Affinity's water resources zones are already water-stressed. We expect dWRMP19 to include proposals to relieve some pressure on local habitats and, with luck and by implication, reduce threats to abstraction by farmers as minor users. We support the more ambitious sustainability reductions proposed by the alternative plan.<br><br>We support Defra's water abstraction plan that sets out how the government will reform water abstraction management in future years by introducing more catchment focus for sharing resources (enabled by a digital abstraction service) and we look forward to engaging with Affinity Water on achieving innovative and sustainable water use in the future. |
| | **Our Response** | **Following consultation with our regulators and local stakeholders we will adopt a 36.31 Ml/d sustainability reduction volume in our revised dWRMP which will be delivered by 2024.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
| | | |
| 19.8 | Representation | Collaboration and sharing<br><br>We support the joint approach outlined in dWRMP19.<br><br>Carefully designed catchment management initiatives can be popular with farmers and high uptake can deliver environmental benefits.<br><br>We will be happy to explore ways to work in partnership with Affinity Water to develop catchment approaches and support farmers in their efforts to improve the water environment. |
| | **Our Response** | **We welcome this feedback and are keen to continue to work in partnership with the National Farmers Union as well as exploring new opportunities in the future.** |
| | Summary of any change to our revised dWRMP | N/A |

## 20. Natural England

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| 20.1 | Representation | Summary of Natural England's comments<br><br>Habitats Regulations Assessment<br><br>• For many options, insufficient information has been provided to exclude a likely significant effect on European and Ramsar sites on the basis of objective evidence.<br><br>• In the appropriate assessment, insufficient evidence is provided to be certain some options will have no adverse effect on integrity, and there are no clear proposals about how potential impacts can be mitigated.<br><br>• For several options in the Preferred Plan and the Alternative Plan, it could not be concluded that they will have no adverse effect on the integrity of European and Ramsar sites. If any of these options are included in the final WRMP, the plan must describe how the supply-demand deficit would be met if these options cannot proceed. This is required to demonstrate the WRMP can be delivered in accordance with the Habitats Regulations.<br><br>Strategic Environmental Assessment (SEA)<br><br>• The SEA lacks the detail required to understand the environmental impacts of schemes, and the potential to mitigate these impacts.<br><br>• Both the Preferred Plan and Alternative Plan include options for which significant negative impacts have been identified in the SEA. The feasibility of mitigating these options is often unclear. Where uncertainty remains, Affinity Water should explain what alternative options could be delivered instead, should further investigations conclude that options are not deliverable.<br><br>• The SEA should be updated to ensure that the potential impact of options has been assessed against all interest features of designated sites (Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, Sites of Special Scientific Interest (SSSIs) and Marine Conservation Zones(MCZs)).<br><br>Water Resource Management Plan<br><br>• Natural England strongly supports the leakage and metering options which are selected early in the plan. We encourage Affinity Water to select the more challenging demand management measures in its Alternative Plan, and to maintain a continuous programme of demand and leakage reduction beyond 2025.<br><br>• The Preferred Plan replaces several potential sustainability reduction schemes with habitat modifications to improve flows and biodiversity in priority chalk rivers. Natural England advises that mitigation in the form of habitat modifications should only be relied on as a last resort where reducing abstraction at this time is not possible. We therefore challenge Affinity Water to be as ambitious as possible when deciding which sustainability reductions to include in its final WRMP.<br><br>• The plan has the potential to result in a net gain to biodiversity (through habitat creation or catchment work) but this is not fully realised. Such projects would also |

| 20. Natural England | | |
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| | | enhance the resilience of water resources, landscapes and seas. Natural England recommends that a commitment to achieve a net gain in biodiversity is embedded in the plan, and that this opportunity is reflected both in the SEA assessments and the costing of the schemes. |
| | **Our Response** | **We have addressed the comments made in Natural England's summary in our responses below.** |
| | Summary of any change to our revised dWRMP | We have summarised changes to our revised dWRMP in our responses below. |
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| 20.2 | Representation | 1: Habitats Regulations Assessment<br><br>Regulation 9 of the Conservation of Habitats and Species Regulations 2017 (S.I. 2017/1012) requires every competent authority, in the exercise of any of its functions, to have regard to the requirements of the Habitats Directive. Regulation 10 places a duty on a competent authority, in exercising any function, to use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds. In addition, regulation 63 places obligations on competent authorities in respect of plans or projects likely to have a significant effect on a protected site.<br><br>Water Companies have a statutory duty to prepare WRMPs and so they are the Competent Authority for Habitats Regulations Assessment (HRA) of the dWRMP. In England, as a matter of policy, sites listed or proposed under the "Ramsar Convention on Wetlands of International Importance" receive the same level of protection as European sites. |
| | **Our Response** | **We will ensure that we have carried out the appropriate assessment required of us as Competent Authority.** |

| 20. Natural England | | |
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| | Summary of any change to our revised dWRMP | We will ensure that we have carried out the appropriate assessment required of us as Competent Authority. |
| | | |
| 20.3 | Representation | 1.1.1 Terminology<br><br>Throughout the HRA, the Conservation of Habitats and Species Regulations 2010 (as amended) are quoted. However, the Habitats Regulations were updated in 2017 due to updates in the supporting legislation. The Plan should be revised throughout, to ensure that the regulations are listed appropriately as 'The Conservation of Habitats and Species Regulations 2017'.<br><br>In several places, the HRA refers to "cumulative effects". The terminology used in HRA is "in combination effects", and the text should be amended accordingly. |
| | **Our Response** | **Agreed.** |
| | Summary of any change to our revised dWRMP | The Habitats Regulations Assessment will be updated. |
| | | |
| 20.4 | Representation | 1.1.2 Role of the Environment Agency<br><br>Paragraph 3.2.2 'Review of consents' explains that "it is the responsibility of the Environment Agency to determine if new abstraction licences or alterations to existing abstraction licences could result in likely significant effects upon a European designated site via the Review of Consents (RoC) process…".<br><br>This is not accurate. The Review of Consents related to a review of licences which had been issued before the Habitats Regulations came into effect. As the competent authority for issuing new licences or licence modifications, the Environment Agency will need to undertake an HRA before they issue such licences. However, as the competent authority for the HRA of their WRMPs, water companies are also required to provide sufficient evidence to support their own HRA of any new water resource options in their plans (including proposed alterations to existing licences). They cannot rely on a future assessment carried out by a third party. |
| | **Our Response** | **We will review and amend this text.** |
| | Summary of any change to our revised dWRMP | Text to be revised. |
| 20.5 | Representation | 1.1.3 European sites and interest features<br><br>The HRA (section 4) lists the designated sites which are relevant to the WRMP, along with the interest features for these sites. This is important baseline information, and all impacts should be assessed against these features. The following sites appear to have been omitted from the assessment, and should be added:<br><br>• Burnham Beeches SAC<br>• Dover to Kingsdown Cliffs SAC<br>• Thursley, Ash, Pirbright and Chobham SAC<br>• Parkgate Down SAC<br>• Wormley-Hoddesdonpark Woods SAC. |
| | **Our Response** | **Although they were taken into account in the Habitats Regulations Assessment process (e.g. reference to Wormley Hoddesdonpark Woods in Appendix B) these sites were omitted from Table 4.1 and the mapping. This will be rectified.** |
| | Summary of any change to our revised dWRMP | Sites listed will be added to Table 4.1 and the mapping. |
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| 20.6 | Representation | 1.2 Screening for likely significant effects (LSE)<br><br>Options which were screened out as having no LSE on European designated sites, alone or in combination, are listed in Appendix B of the HRA with a brief explanation of the screening decision. Section 5 (table 5-1) of the HRA presents an analysis for options where LSE could not be screened out for all relevant designated sites. It explains the potential mechanisms by which an impact could occur, and lists the relevant sites. These options (in table 5-1) are taken forward for appropriate assessment in section 6.<br><br>However, not all sites in proximity to the options in table 5-1 have been taken forward for appropriate assessment. This is presumably because they have been screened for no likely significant effect, although it is not always clear that this is the case.<br><br>In many cases in both Table 5-1 and Appendix B, insufficient information has been provided to exclude a LSE on the basis of objective evidence.<br><br>For example, option AFF-EFF-WRZ7-0605 is relevant to<br><br>• Dungeness SAC<br>• Dungeness, Romney Marsh and Rye Bay SPA<br>• Dungeness, Romney Marsh and Rye Bay potential SPA*<br>• Dungeness, Romney Marsh and Rye Bay Ramsar and<br>• Folkestone and Etchinghill Escarpment SAC.<br><br>*. *The SPA was fully classified in 2016 and extended the older now replaced Dungeness to Pett Levels SPA. This extended SPA has not been through the Review of Consents. There has recently been a consultation on a marine extension to the newly classified SPA (2016). It is not clear whether this assessment is referring to the pSPA marine extension or the now fully classified SPA*.<br><br>The HRA states that this option could have a LSE on the "potential SPA" alone, and this is therefore taken forward for appropriate assessment. However, the other Dungeness designations are not mentioned with respect to LSE screening.<br><br>Also the discussion of potential impacts on the Folkestone and Etchinghill Escarpment SAC is weak with no objective evidence around risks and no firm mitigation proposals. Phrases such as "it is very likely that the level of construction traffic will be minimal" and claims that "atmospheric nitrogen deposition impacts [only] occur due to regular long-term exposure to pollutants" are not robust or objective enough to screen for no LSE. Ultimately, it is not clear whether LSE has been concluded for this site or not.<br><br>It is also very unclear how the in combination assessment has been undertaken, or whether it has considered all potential combinations of options and impacts.<br><br>The use of mitigation to remove a likely significant effect and avoid undertaking an appropriate assessment has been the subject to a recent case law3. Natural England recommends that the HRA is reviewed in light of this case and that Affinity Water takes legal advice on this.<br><br>Affinity Water must be able to exclude LSE on the basis of objective and robust evidence at this stage. The HRA should be reviewed and updated to ensure that objective evidence is provided to support the screening, and that the assessment conclusions are clear for every option and every site relating to that option. |
| | **Our Response** | **The HRA was completed in November 2017 and therefore pre-dates by five months the case law (People over Wind) which prevents mitigation measures from being taken into account at the screening (likely significant effects) stage of HRA. We have confirmed that Natural England are referring to the Sweetman and People Over Wind vs Irish Government case. The updated HRA will be cognisant of this requirement.**<br><br>**This HRA assessment is to be updated with increasing specificity in subsequent stages of the procedure. Note that in the updated HRA we only intend to discuss options that are actually selected for the revised dWRMP rather than those that were not selected to avoid confusion.** |

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| | Summary of any change to our revised dWRMP | Revised dWRMP to be updated as per Our Response. |
| | | |
| 20.7 | Representation | 1.3 Appropriate assessment<br><br>An appropriate assessment is required where a likely significant effect from an option cannot be screened out. Thirteen options were taken forward to appropriate assessment in Section 6 of the HRA as they had an LSE when considered alone, and eight options were assessed in combination.<br><br>Option AFF-NTW-WRZ4-1005 was included in table 5-1 as having an LSE in combination, but does not appear to have been taken forward for appropriate assessment in section 6. This assessment should be included in the final plan.<br><br>Appropriate assessments require objective evidence and robust mitigation proposals to conclude that the options presented will have no adverse effect on the integrity of European sites and Ramsar sites. Natural England does not consider that the HRA has achieved this. In the assessment, many assumptions are made which are not backed up with evidence. For example:<br><br>• Three constrained options that are coloured orange in Table 6-1 present uncertainties as to whether an adverse effect can be avoided, pending further information. One of these (AFF- EGW-WRZ7-0322) is listed as presenting a potentially un-reconcilable impact, but this is not explained. This terminology is not linked to the HRA legislative tests and is not acceptable in an HRA which is underpinning the selection of options in Affinity Water's WRMP19. This in effect appears to unable to conclude no adverse effects on the integrity of the site.<br><br>• Options AFF-DES-WRZ7-0396 and AFF-DES-WRZ7-0008 could present issues for the Dungeness and Romney Marshes European sites. It is stated that these options: "…could involve drawdown of the groundwater levels within the Dungeness European sites that lie landwards of the trench or beach wells. While it is likely that the scale of abstraction could be managed to minimise such an effect, it is not possible to dismiss any effect entirely without further investigation as the scheme(s) are developed."<br><br>Again there is no further detail around this. There is no robust evidence and no clear proposal for how potential impacts can be mitigated. |
| | **Our Response** | **We were not able to conclude no adverse effect on integrity for any of these three options without considerable further investigation. Therefore, they were not included in the preferred or alternative plans, as per the rest of the document. This was intended to show how the HRA process has worked by flagging three options that should not be included in the WRMP options.**<br><br>**Our final HRA will be more concise and consider only those schemes actually intended for inclusion to avoid confusion.** |
| | Summary of any change to our revised dWRMP | Our final HRA will consider only schemes intended for inclusion in our final plan. |
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| 20.8 | Representation | 1.4 Plan-level HRA<br><br>Section 6 of the HRA states that<br><br>"…plan-level HRA can never investigate potential effects to their fullest extent and there will always be at least one further round of assessment as actual schemes are developed in detail. The plan level HRA should therefore investigate effects as far as possible using the information available and then consider the need to introduce controls into the plan as necessary to ensure that potential adverse effects on integrity are 'designed out' or addressed through careful construction practices where standard methods are available."<br><br>Whilst Natural England does not disagree with this statement, there remains a requirement to provide objective evidence in the WRMP to support a conclusion of no likely significant effect, or the plan must be certain there is no adverse effect on integrity. There must be confidence that any option selected in the WRMP can be delivered without impacting a European site or Ramsar site, even where the detailed design will come later. |
| | **Our Response** | **Agreed.** |
| | Summary of any change to our revised dWRMP | We will update the HRA accordingly. |
| | | |
| 20.9 | Representation | 1.5 Options selected in the dWRMP<br><br>The following options have been selected for the Preferred and/or Alternative Plans, even though the appropriate assessment was unable to conclude no adverse effect on the integrity of European and Ramsar sites. |

| Option | Relevant designated site(s) | Preferred Plan (PP) or Alternative Plan (AP) | Delivery date |
|---|---|---|---|
| AFF-NGW-WRZ3-0548 | Lee Valley SPA and Ramsar site | PP & AP | 2023 |
| AFF-NGW-WRZ3-1075 | Lee Valley SPA and Ramsar site | PP & AP | 2023 |
| AFF-RTR-WRZ1-1007 | South West London Waterbodies SPA & Ramsar | PP | 2071 |
| AFF-RTR-WRZ4-1038 | South West London Waterbodies SPA & Ramsar | PP | 2055 |
| AFF-RTR-WRZ4-1040 | South West London Waterbodies SPA & Ramsar | AP | 2039 |

If at the time of publication of the final WRMP further investigation of any options is required to conclude no likely significant effect on European sites (at the screening stage) or no adverse effect on integrity (at the appropriate assessment stage), then the company should present an alternative option, or alternative plan, which would be delivered if that option cannot proceed. If this is not done then the WRMP is not compliant with the Habitats Directive, as there remains uncertainty that the plan as a whole can be delivered.

The approach of "down the line assessment" for preferred options with a likely significant effect can potentially be acceptable in a dWRMP context only when all the following criteria are satisfied:

- Where, due to scientific uncertainty of a novel or complex process and need for more research, information cannot reasonably be gathered at this (dWRMP19) plan stage;

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| | | • Options are proposed for delivery late on in the plan (post 2030 for dWRMP19) ensuring that there is time to allow for assessment and delivery of alternatives if necessary;<br><br>• Alternatives are included in the plan where the avoidance of an adverse effect on integrity of European sites is certain, and these are available, feasible and deliverable;<br><br>• A commitment is made to pursue alternatives if an adverse effect on integrity of a European site cannot be avoided for the preferred options set.<br><br>Any investigations or appropriate assessments that have been deferred to "down the line" should be carried out in time to inform the HRA of the 2024 Water Resources Management Plan.<br><br>Two options (AFF-NGW-WRZ3-0548 and AFF-NGW-WRZ3-1075) are for delivery in 2023, and this does not allow sufficient time to develop alternative options. An alternative list of options which can be delivered (without an impact on designated sites) should further investigations fail to rule out an adverse effect on integrity for any of the options, has not been provided. Natural England therefore advises that Affinity Water's dWRMP does not meet the legislative tests for assessment of plans set out within the Habitats Regulations.<br><br>If any other options are introduced to the final WRMP where there remains uncertainty about the risk of an adverse effect on the integrity of European and Ramsar sites, then the same criteria apply. |
| | **Our Response** | **Of the five options listed in response 1.5 (above), two are chalk groundwater schemes. We have included a commitment to remove all of our chalk groundwater options from our revised dWRMP based on stakeholder feedback.**<br><br>**The other three options are strategic imports to our supply area and are not selected for several AMPs. We will undertake the "down the line" assessments for these.**<br><br>**Our revised modelling process will allow for several 'what if' model runs. This will enable us to run the model to determine what alternative schemes are available to replace selected schemes, which will inform these assessments.** |
| | Summary of any change to our revised dWRMP | As per our response. We will produce an updated HRA. |
| 20.10 | Representation | 2: Strategic Environmental Assessment<br><br>The European Commission Directive 2001/42/EC "on the assessment of the effects of certain plans and programmes on the environment" is known as the 'SEA Directive'. It requires "an environmental assessment is carried out of certain plans and programmes which are likely to have significant effects on the environment" (EC, 2001; Article 1). The provision is explicitly applied to plans made for "water management". Further regulatory information about areas which should be assessed within the SEA is provided in Annex 3 of this letter.<br><br>The SEA is logically presented, with baseline information, and explanation of how the SEA informed the selection of options in the dWRMP, key impacts identified in the preferred and alternative plans, and a summary of the assessment of in-combination and cumulative effects. However, the detail provided in the assessment is lacking, and Natural England advises that the SEA needs further work and clarification in a number of areas, as detailed below.<br><br>Both the Preferred Plan and Alternative Plan include several options for which significant negative impacts have been identified in the SEA, and it is surprising that so many have been selected for the dWRMP. It is often unclear whether it would be possible to mitigate these impacts. Where uncertainty remains, Affinity Water should explain what alternative options could be delivered instead, should further investigations conclude that options are not deliverable due to unacceptable environmental impacts.<br><br>The Government recently published its 25 Year Plan to Improve the Environment4. |

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| | | Understandably (as it was published in 2018) this was not included in the list of Plans, Policies and Programmes against which the SEA policy objectives were developed. However, Affinity Water should familiarise itself with the 25 Year Plan, and ensure that the SEA and final WRMP aligns with its policies and supports its objectives. |
| | **Our Response** | **We will model several 'what if' modelling runs which will flag options selected whereby environmental impact uncertainty remains, and what alternative options would fill the void, should this scheme no longer be deliverable.**<br><br>**We will take into account the 25 Year Plan when producing our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | We will update the SEA in line with the above. |
| | | |
| 20.11 | Representation | 2.1 Impacts and mitigation<br><br>The 'Impact Description' and 'Effect Description' columns in the Appendix V tables span multiple SEA objectives and assessment questions, and it is often difficult to pick out the information relevant to each question and see how it has been assessed.<br><br>Mitigation measures are not always provided where negative impacts have been identified. In many cases, the information provided in the 'mitigation' column simply states that there is a need for ecological surveys and a Construction Environmental Management Plan (CEMP). Surveys do not constitute mitigation, but they may inform what mitigation measures are required. The SEA should explain what surveys are needed, and what measures in the CEMP would be required to mitigate the risks. If insufficient information is available to understand whether impacts can be mitigated then the WRMP should set out what alternative options could be delivered if it is later found that the preferred plan is not deliverable. |
| | **Our Response** | **It has since been agreed with Natural England (11th Sept) that the level of detail which the Strategic Environmental Assessment and Environmental Report will go into will be, with regards to mitigation, an acknowledgement of what type of mitigation is required and that the detail of the option would come in the design stages.**<br><br>**Our revised dWRMP will set out alternative options which could be delivered should a preferred option not be deliverable. The revised dWRMP will set out alternative options should the preferred options be deemed undeliverable based on the outcomes of proposed mitigation at the design/deliverability stages.** |
| | Summary of any change to our revised dWRMP | We will update our SEA and revised dWRMP accordingly. |
| | | |
| 20.12 | Representation | 2.2 Internationally and nationally designated biodiversity sites<br><br>The scoping information for biodiversity, flora and fauna (SEA Appendix II) lists all the Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites and National Nature Reserves (NNRs) in the study area, and within 10 km of the study area. For each site there is a description of the primary habitats and species, and water-related threats to site condition. Annex B of this appendix includes similar tables with information for SACs, SPAs, Ramsar sites and SSSIs. However, neither location lists the designated interest features for the sites. The tables refer to some habitats and species which are designated interest features, and some which are not. Some designated interest features are not mentioned.<br><br>For example:<br><br>• Epping Forest SAC is designated for broadleaved woodland (dominated by beech), wet and dry heathland, and stag beetles. Veteran trees and bryophytes are also a supporting feature. For this site, the description of key habitats in Annex B says "beech forests, large numbers of veteran trees, rich in fungi and dead-wood invertebrates including stag beetles". Fungi and dead-wood invertebrates are two |

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| | | interest features of the SSSI, but not the SAC.<br><br>• Brent Reservoir SSSI is designated for breeding birds which are associated with lowland fen and open water. The description of key habitats in Annex B says "reservoir with overwintering birds and waterside habitat".<br><br>The SEA assessment tables in Appendix V identify the proximity of options to designated sites and identify some potential impact pathways, but do not identify what interest features might be affected. An understanding of pathways and receptors is required in order to assess the degree of risk and to identify potential mitigation measures.<br><br>Affinity Water should ensure that the potential impact of options has been assessed against all interest features of designated sites (SACs, SPAs, Ramsar sites and SSSIs) and should have regards to the sites conservation objectives (for SACs, SPAs and Ramsar sites) and favourable condition tables for the SSSIs. At present this does not appear to have been done, as the interest features are not listed anywhere and the assessment tables do not explain what site features might be impacted. |
| | **Our Response** | **We will update the tables to include an appropriate level of additional detail and will ensure that assessment is carried out against all interest features of designated sites.** |
| | Summary of any change to our revised dWRMP | Revised dWRMP to be updated as per Our Response. |
| | | |
| 20.13 | Representation | 2.3 Marine Conservation Zones (MCZs)<br><br>The SEA Environmental Report makes no reference to Marine Conservation Zones (MCZs). Appendix II (Baseline Review) includes information about two MCZs in the South East Area (Dover to Deal MCZ and Dover to Folkestone MCZ). Although further out to sea, the SEA assessment should also consider Folkestone Pomerania MCZ, as well as two Recommended MCZs in the area (Hythe Bay rMCZ and Goodwin Sands rMCZ). All of these sites are within 10 km of the SEA study area.<br><br>Appendix V (SEA of constrained options) includes reference to MCZs against two schemes (AFF- RTR-WRZ7-0842 and AFF-DES-WRZ7-0309). In both cases, the effect description lists the proximity of the sites to the schemes, but offers no assessment of the potential for the scheme to hinder the sites conservation objectives.<br><br>Affinity Water should ensure that the potential for schemes to impact MCZs and rMCZs is assessed (including cumulatively and in combination), and that mitigation measures are identified if necessary. There should be an SEA question relating to impacts on MCZs and rMCZs. Natural England recommends that the MCZ assessment is clearly identifiable in the assessment process, for example by adding a separately 'MCZ assessment' section in the SEA Environmental Report. |
| | **Our Response** | **We are in discussion with Natural England on this point.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 20.14 | Representation | 2.4 Landscape<br><br>There appears to be inconsistency in the assessment of options which involve pipelines through Areas of Outstanding Natural Beauty (AONBs). Several of these schemes were assessed, and the effect score ranges from -1 to -3. It is unclear how these scores were derived. The assessment needs to explain how each option could affect the landscape characteristics of the AONB and its setting, with reference to the AONB management plan. Careful design would be essential to ensure local landscape character is not just protected, but also enhanced.<br><br>There are many options in Affinity Water's dWRMP and in other companies' plans which have the potential to impact protected landscapes should they go forward. Cumulative landscape impacts should be assessed before the final plan is submitted to ensure |

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| | | mitigation is possible, and mitigation should not be left to a piecemeal approach at the project stage. Natural England recommends that Affinity Water works with neighbouring companies and with Protected Landscape Officers to produce a cohesive Protected Landscape Mitigation Strategy for each AONB which could be affected by multiple schemes in the lifetime of the WRMP. These should be completed before implementation of the plans, and should address any cumulative landscape impacts which could occur. |
| | **Our Response** | **We will review the sections of the report relating to this scoring and assessment and will carry out further work as appropriate to ensure they provide an appropriate level of detail.**<br><br>**We are working with Water Resources South East and neighbouring companies to ensure their Cumulative Effects Assessments are available for consideration under our Environmental Report where available to mitigate against effects of other company options.** |
| | Summary of any change to our revised dWRMP | We will update our Environmental Report as per above and will consider the updated WRSE Phase 4 cumulative effects assessment within our revised Environmental Report. |
| | | |
| 20.15 | Representation | 2.5 Priority habitats and species<br><br>Potential impacts on BAP Priority Habitats and species have been identified against several options, but information on the scale of impact (in terms of area affected) and the nature of impacts (e.g. loss or fragmentation) is lacking. The mitigation discussion is also inadequate, stating that priority habitats should be avoided where possible, or else compensatory habitat will be required. There is no indication of whether avoidance or provision of suitable compensatory habitat is feasible. |
| | **Our Response** | **An acknowledgement of mitigation was agreed (11th September) as the appropriate way forward with regards to Environmental Report and Strategic Environmental Assessment. There are mitigation principles which we could apply subject to more detailed assessments and the Natural England agreed that this detail would come in the option design stage.** |
| | Summary of any change to our revised dWRMP | Detailed mitigation will be included where feasible. Where it is not feasible, we will flag further assessments are required. |
| | | |
| 20.16 | Representation | 2.6 Invasive non-native species<br><br>The SEA assessment relating to invasive non-native species (INNS) is incomplete and inconclusive. Against most options, the assessment (in Appendix V) says “No invasive species identified, however detailed ecological survey required”. The SEA should consider whether each option has the potential to introduce INNS to new areas, or to exacerbate their spread should they be present. At this stage, knowing what species are present is not necessary. |
| | **Our Response** | **The revised Strategic Environmental Assessment will consider whether each option has the potential to introduce INNS to new areas.**<br><br>**On the 11th September, we agreed with Natural England (NE) that as limited INNS data is available, the revised Environmental Report and Strategic Environmental Assessment will highlight options that involve raw water transfers as this was where NE's concern lay. There is no regional INNS data available to share, so the assessments will indicate where potential risks may lie with options.**<br><br>**Where we have options with third parties, we have explored the opportunities to understand existing INNS studies and the potential impacts to gain as solid an understanding as possible e.g. BREN.** |

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| | Summary of any change to our revised dWRMP | As per Our Response. |
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| 20.17 | Representation | 2.7 Water Framework Directive<br><br>Impacts on the achievement of WFD objectives appear to have been assessed in the SEA. Natural England defers to the Environment Agency (EA) to comment on the WFD assessment of the dWRMP, and the implications for the preferred programme. We fully support the EA's views and advice on this matter. |
| | **Our Response** | **No action required.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 20.18 | Representation | 2.8 Impacts of supply-side options<br><br>2.8.1 BREN Reservoir (AFF-RES-WRZ4-9832)<br><br>The SEA assessment (Appendix V) for this option says that "Abstraction from Brent Reservoir SSSI may affect water quality and the species and habitats that the site supports". It also states that there could be "minor construction and operation phase effects on BAP priority habitats". However, the SEA does not explain what SSSI interest features would be affected or the mechanism by which water quality or biodiversity might be affected.<br><br>In order to understand the potential impacts, the SEA should explain what impact the option will have on water levels and water quality (including the frequency and extent of drawdown) and link this to the interest features of the SSSI, and to any priority habitats and species which are present. Table 5.4 in the SEA Environmental Report does not mention the fact that the option involves abstracting directly from a SSSI, and therefore no mitigation is proposed.<br><br>This option also identified risks of impacts to Fray's Farm Meadow SSSI and Ruislip Woods SSSI from the pipeline associated with this option. Again, links to designated site features need to be made, and more information on mitigation should be provided in the Appendix V table. |
| | **Our Response** | **We will provide further detail in terms of potential impacts and effects, specific to this option, within the revised dWRMP Environmental Report and Strategic Environmental Assessment.** |
| | Summary of any change to our revised dWRMP | As per Our Response. |
| | | |
| 20.19 | Representation | 2.8.2 Desalination schemes<br><br>The constrained list included two desalination schemes (AFF-DES-WRZ7-0309 and AFF-DES- WRZ7-0396) and one effluent reuse scheme which requires a new desalination plant (AFF-EFF- WRZ7-0605) which were assessed in the SEA. The assessments focus on the impacts of infrastructure on the land. Impacts on coastal designated sites (SACs, SPAs, Ramsar sites, MCZs and SSSIs) could also result from:<br><br>• impingement and entrainment at intake pipe (e.g. of migratory species or planktonic loading)<br>• hypersaline discharge impacts including pH, dissolved oxygen, nitrogen, density, sea discolouration and any anti-scalant or other chemicals used<br>• thermal discharge<br>• scour of discharge<br>• timing of discharge. |

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| | | These potential impacts have not been discussed or assessed. These schemes were not selected for either the preferred or alternative plan in the dWRMP. However, Affinity Water should ensure that the assessments are completed in case the plan options are reviewed. |
| | **Our Response** | **We will provide further detail in terms of potential impacts and effects within the revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Revised dWRMP to be updated as per Our Response. |
| | | |
| 20.20 | Representation | 3: Draft Water Resources Management Plan 2019 (dWRMP)<br><br>3.1 Putting People at the Heart of Decision Making<br><br>3.1.1 Demand management<br><br>Natural England's Conservation 215 seeks to drive a fundamental change in mind-set, to make a healthy natural environment a central part of health, wealth and prosperity. This includes encouraging the public to value the water they use.<br><br>Ofwat has set ambitious leakage targets for all companies to strive to minimise the amount of water lost through leakage year on year, with water companies expected to reduce leakage by at least an average of 15% by 2025. This target is supported in the Defra 25 Year Environment Plan.<br><br>Defra's 25 Year Environment Plan aspires to reduce the risks of drought to the public by:<br><br>• Ensuring interruptions to water supplies are minimised during prolonged dry weather and drought.<br>• Boosting the long-term resilience of our homes, businesses and infrastructure.<br><br>Section 82 of the Water Act 2003 places an environmental duty on the water undertakers 'to further water conservation', in addition to duties in the Water Industry Act (section 3(2)(a) 1991) to promote efficient use of water by its customers.<br><br>Affinity Water's dWRMP demonstrates that this duty has been taken into account and that this has been pursued through demand management within the plan rather than purely increasing supply.<br><br>We strongly support the demand management options in the dWRMP which include:<br><br>• Leakage reduction<br>• Metering (including smart meters)<br>• Education and water efficiency measures (Alternative Plan only)<br>• Rainwater and surface water harvesting (Alternative Plan only).<br><br>The plan acknowledges the challenges and limitations of reducing per capita consumption, and presents a desire of the water company to work with others to drive down demand. This is reflected in the Alternative Plan. In the early part of the plan, the difference in leakage reduction between the Preferred Plan (PP) and the Alternative Plan (AP) is not that great (11% in PP and 15% in AP). However, post-2025, the Alternative Plan is much more ambitious, continuing to drive down leakage by 33% by 2080.<br><br>By managing existing resources more efficiently, the environmental impacts associated with water supply and wastewater management are reduced. Natural England therefore encourages Affinity Water to select the more challenging measures in its Alternative Plan, and to maintain a continuous programme of demand and leakage reduction beyond 2025. |

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| | **Our Response** | **We have taken into account our customer and stakeholder support for the draft plan Alternative Plan and its ambitious demand management and leakage proposals. We intend to base our revised dWRMP on this Alternative Plan and the revised dWRMP will contain a 15% leakage reduction in AMP7 and aim to achieve a 50% leakage reduction by 2050, as well as ambitious levels of demand management to try and reduce PCC.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 20.21 | Representation | 3.2 Resilient Landscapes and Seas<br><br>3.2.1 Natural Capital and Ecosystem services<br><br>*Conservation 21: Natural England's conservation strategy for the 21st century* and Defra's 25 Year Environment Plan encourage growth in natural capital and measurement of ecosystem services. WISER recommends that companies consider how natural capital accounting can inform water industry planning. WISER recommends that companies trial natural capital asset accounts (including quantity and condition) and ecosystem service assessments (including qualitative and quantitative assessments) to help companies better understand the flow of benefits.<br><br>Section 4.5 of the dWRMP discusses the wide ranging benefits of natural capital and eco-system services (including amongst other things water supply, climate regulation, flood risk management, cultural and spiritual services), and how Affinity Water works to protect and enhance these. For example through:<br><br>• Catchment risk assessments to determine land use risks to drinking water quality<br>• Farmer engagement (pesticide and nitrate reduction)<br>• Reducing groundwater abstraction<br>• Morphological mitigation programme<br>• Biodiversity projects including maintenance and habitat management plans for e.g. Sites of Special Scientific Interest (SSSIs) and Local Nature Reserves (LNRs).<br><br>The SEA Appendix II includes a discussion of ecosystems services and natural capital, approaches to assessing these, and the policy context. The SEA (section 4.4.2) explains how Affinity Water attempted a high level ecosystems services assessment for all constrained options. A baseline review of the ecosystems services provided by different habitats within the study area was undertaken (and is presented in SEA Appendix II). The company attempted to score options based on whether the ecosystems services provided by each habitat type would benefit or be adversely affected by each option. Unfortunately Affinity found that insufficient data were available to undertake a meaningful assessment in this way, and felt that the assessment would not add any value to what was already being considered through the SEA and other assessments.<br><br>Natural England is pleased that Affinity Water is thinking about how it can protect and enhance natural capital through its operations, and commends Affinity Water on its attempt to apply an ecosystems services assessment to its dWRMP. Even though it was ultimately unsuccessful, the company has identified information gaps and is already thinking about how to develop the process so that it can be improved and applied in WRMP24. |
| | **Our Response** | **Noted.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 20. Natural England | | |
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| 20.22 | Representation | 3.2.2 Enhancing Resilience<br><br>*Conservation 21: Natural England's conservation strategy for the 21st century* focuses on the importance of natural processes to build long term resilience in our wildlife, landscapes and seas. This ecosystem services approach at a landscape scale supports the Defra 25 Year Environment Plan objectives for clean and plentiful water and thriving plants and wildlife. This approach also supports aspirations for using resources from nature more sustainably and efficiently set out in the Environment Plan.<br><br>Ofwat also stresses the importance of improving environmental resilience in its methodology guidance to companies for PR196 which states companies should take account of Ofwat's seven principles for resilience planning, including a naturally resilient sector reflecting the importance of ecosystems and biodiversity.<br><br>Section 7 of the dWRMP explains the company's approach to resilience in the plan. The focus of this section primarily relates to the resilience of water resources and operational requirements. It states that Affinity Water is "seeking to understand customers' and stakeholders' opinions on environmental and societal resilience priorities in [its] area", although the resilience of biodiversity and ecosystems to climate change and other pressures or threats is not directly discussed in this section.<br><br>However, sections 4.5 and 4.6 of the plan are relevant in this respect. Section 4.5 (on natural capital and ecosystems services) recognises that more natural rivers are more resilient to climate change and future pressures. And section 4.6 (on biodiversity) explains measures which the company is taking to protect and enhance biodiversity through:<br><br>• Working with partners (including Herts & Middlesex Wildlife Trust) to develop management plans and increase community engagement<br>• Ecological surveys at many sites, to collect baseline biodiversity data<br>• Undertaking and supporting many biodiversity events<br>• Reducing pollution through catchment programme (catchment sensitive farming approach)<br>• Sustainability reductions through AMP6 & AMP7<br>• Continued programme to enhance biodiversity at company's sites.<br><br>Natural England recommends that in Section 7 (with reference to other sections as required) Affinity Water explains how the dWRMP and company activity contribute to the resilience of biodiversity to climate change and other pressures or threats, and how this thinking helped to shape the plan. |
| | **Our Response** | **Noted.** |
| | Summary of any change to our revised dWRMP | We will consider expanding this section. |
| | | |
| 20.23 | Representation | Sustainability reductions<br><br>WISER advises companies that they should "consider whether [their] abstractions are truly sustainable, looking across a catchment as a whole and consider investment in integrated catchment schemes to improve drought resilience and water quality".<br><br>Affinity Water has a programme of river habitat restoration and enhancement on some rivers where groundwater abstraction is impacting flows, and where sustainability reductions are considered to be infeasible. This will contribute to the resilience of these already-stressed ecosystems to further environmental pressures. However, Natural England expects sustainability reductions to be undertaken as far as possible to protect flows and biodiversity in priority chalk rivers. Mitigation in the form of habitat modifications should only be relied on as a last resort where reducing abstraction at this time is not possible. We therefore challenge Affinity Water to be as ambitious as possible when deciding which sustainability reductions to include in its final WRMP.<br><br>Affinity Water's Alternative Plan includes sustainability reductions of 39 Ml/d. However, the Preferred Plan only includes 10 Ml/d of sustainability reductions (lower than PR14 forecast), with alternative habitat restoration and enhancement schemes where there is less certainty of benefits. Affinity Water has also sensitivity tested reductions of 61 Ml/d |

| 20. Natural England | | |
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| | | spread over AMP7 and AMP8.<br><br>Section 8.6.1 says that Affinity wishes to make sustainability reductions "in locations where there is evidence that they will benefit the environment and represent good value for customers". Natural England advises that in any such assessment of the value of reductions, the full benefit to customers of ecosystems services and the value of natural capital should be accounted for. |
| | **Our Response** | **Our revised dWRMP will plan to deliver the 36.31 Ml/d of sustainability reductions included in WINEP3.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
| | | |
| 20.24 | Representation | Catchment schemes<br><br>Natural England is pleased that Affinity Water has a Catchment Management Programme for water quality. Catchment schemes can contribute not only to improving water quality at its sources by reducing diffuse pollution, but could also improve the resilience of surface and groundwater sources by storing and retaining water and improving groundwater infiltration rates and helping ecosystems become more resilience to climate change. We encourage Affinity Water to consider whether the scope of its catchment schemes could be broadened to achieve wider benefits for biodiversity and to enhance natural capital. |
| | **Our Response** | **We will consider what opportunities there are to achieve wider benefits through our Catchment Management Programme.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 20.25 | Representation | Habitat Creation<br><br>Natural England encourages Affinity Water to consider the contribution that the creation and restoration of wetland habitats and appropriate woodland planting within a wider catchment would make on reducing diffuse pollution, thereby contributing to water purification and also on storing and retaining water, reducing peak floods further downstream in the catchment. Local Nature Partnerships (LNP) and Biodiversity Action Plan (BAP) Partnerships will be able to give advice on which Priority Habitat creation and restoration would be appropriate in which location. Such schemes could include the creation and restoration of wetland habitats, appropriate woodland planting and sustainable drainage systems within a wider catchment. Such schemes can have wider benefits for biodiversity and society as a whole, including through flood risk management and provision of green infrastructure.<br><br>We would welcome if you could share any such plans and eventual progress with implementation with Natural England and if any habitat creation was also logged on the Biodiversity Action Recording System (BARS: http://ukbars.defra.gov.uk). |

| 20. Natural England | | |
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| | **Our Response** | **We will consider this at option design stage as part of our preparations for implementation.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 20.26 | Representation | Biodiversity net gain<br><br>Natural England could not see any reference in the plan or SEA to opportunities for biodiversity net gain. The plan has the potential to result in a net gain to biodiversity (through habitat creation or catchment work) but this is not fully realised. Such projects would also enhance the resilience of water resources, landscapes and seas. Natural England recommends that a commitment to achieve a net gain in biodiversity is embedded in the plan, and that this opportunity is reflected both in the SEA matrices and the costing of the schemes. |
| | **Our Response** | **Noted.** |
| | Summary of any change to our revised dWRMP | N/A |

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| 21.1 | Representation | The Affinity Water draft plan includes two plans for consultation, a preferred plan and alternative plan. The preferred plan is described by the company as best value and is presented favourably. The alternative plan presents options for improved levels of service under severe drought, greater leakage reduction and higher reductions in abstraction licences. Given the favourable positioning of the preferred plan, if it is chosen for the final plan, it will need to demonstrate clearly that it represents the best value outcome for customers and the environment. |
| | **Our Response** | **Throughout the consultation the approach taken in the Alternative Plan received strong endorsement. We have therefore decided to respond by creating a revised dWRMP building on the Alternative Plan, making any further amendments based on consultation feedback.**<br><br>**We are therefore producing a revised dWRMP19 and intend to present it to stakeholders and customers for further consultation in the Spring of 2019.** |
| | Summary of any change to our revised dWRMP | A single revised dWRMP will be presented for further consultation, Spring 2019. |
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| 21.2 | Representation | We have concerns around the process adopted for plan development. We expect to see more transparency on how the final programme was selected for both the preferred and alternative plans, to demonstrate that it represents an appropriate package of options, for both the company and region as a whole. There are also lots of unresolved uncertainties, which cut across both plans, such as the level of service and licence reduction requirements. These raise concerns about the effectiveness of the consultation and the robustness of the draft plan. |
| | **Our Response** | **Our revised dWRMP will be based on a revised decision-making process, full details of which will be included in the plan. We intend to carry out further consultation in Spring 2019.** |
| | Summary of any change to our revised dWRMP | A revised decision-making process will be presented and the revised dWRMP will include options based on this decision making.<br><br>Further consultation on the revised dWRMP will take place in Spring 2019. |
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| 21.3 | Representation | The preferred plan includes several trading options including reducing both imports and exports to neighbours and large new trades later in the planning period. We have concerns that current trades are proposed to be reduced without sufficient justification given the near term needs that Affinity Water faces. There are also significant mismatches in the scale, timing and costs presented for trading options. |
| | **Our Response** | **As part of the development of our revised dWRMP we have continued to share our modelling results on the timing and the need for transfers which should allow, as per Ofwat's recommendation, the revised dWRMP to improve alignment with the plans of neighbouring companies where discrepancies had occurred. New trading options will be assessed as part of the revised decision making process within our revised dWRMP.**<br><br>**In our discussions with Anglian Water since the publication of our draft WRMP and their revised dWRMP, we have flagged an inconsistency between the date at which the agreed split of Ardleigh Reservoir output reverts back to 50:50. We will include 50:50 in the year 2024/25 within the WRP Tables and it is our understanding that Anglian Water will do the same.** |
| | Summary of any change to our revised dWRMP | The revised dWRMP submission will confirm the status of trades. |
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| 21.4 | Representation | In general the draft plan presents limited ambition for demand management. This is made more significant by the likely scale of the supply-demand balance challenges Affinity Water faces. Although there are reductions from the current high per capita consumption (PCC) level, the resulting average PCC of 132 l/h/d by 2045 is still less ambitious than the average for other companies nationally and lacks the ambition of leading companies. The preferred plan also only includes leakage reduction of 10% by 2025. |
| | **Our Response** | **We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and our 14% leakage reduction programme, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We have included a performance commitment in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and we are aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d for 2025 compared with customers' current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 which was supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.** |
| | Summary of any change to our revised dWRMP | We have set a target in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>We are reducing leakage by 15% in AMP7 and aim to achieve a 50% reduction by 2050. |
| | | |
| 21.5 | Representation | It is evident that Affinity Water has worked closely with the Water Resources South East (WRSE) and Water Resources East (WRE) regional groups and recognises the importance of water resource cross-boundary schemes and trades. However, significant water imports are presented late in the planning horizon and we consider that more can be done in the near term to seize the opportunity of regional solutions to address its challenge and those more widely in the south east. |
| | **Our Response** | **We will be further assessing cross-boundary schemes and trades through our revised decision making process in development of our revised dWRMP. We are continuing discussions with neighbouring companies, Defra and the EA** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 21.6 | Representation | 1. Plan Building Blocks<br><br>The Affinity Water draft plan includes two plans for consultation, a preferred plan and alternative plan:<br><br>• The preferred plan is described as the company's view of the best value for its customers and the environment.<br><br>• The alternative plan includes options for improved levels of service under severe drought, greater leakage reduction and higher reductions in abstraction licences.<br><br>• We note that planning tables are only presented for the preferred plan which means it is not possible to fully understand the alternative plan. To address this lack of transparency the company should provide in the final plan the full data for both plans. This will help to provide the full context for whichever one of the plans is selected as the final plan. |
| | **Our Response** | **The revised dWRMP will present one plan as informed by the dWRMP consultation responses and our revised decision making process and will be submitted with** |

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| | | **one set of water resource planning tables.** |
| | Summary of any change to our revised dWRMP | We will submit one set of WRP tables with our revised dWRMP. |
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| 21.7 | Representation | Affinity Water has not referred to non-drought resilience, such as freeze-thaw events, in detail within the draft plan, though it is noted that this is being developed for the company PR19 Business Plan. Further clarification is needed for the final plan. |
| | **Our Response** | **Our revised dWRMP will detail works planned in AMP7 (2020-25) to further increase our resilience to non-drought resilience, including immediate and significant changes in demand and the potential loss of key sites during events such as the freeze / thaw event experienced in February/March 2018.** |
| | Summary of any change to our revised dWRMP | See Our Response |
| | | |
| 21.8 | Representation | The planning period has increased from 25 years in the previous plan to 60 years for this plan. The company states that this will help it address strategic needs and ensure resilient supplies. This also aligns with the planning period of WRSE which we consider increases transparency. |
| | **Our Response** | **No response required.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 21.9 | Representation | 2. Customer Participation<br><br>There is limited evidence of customer participation in the development of the draft plan. This is recognised by Affinity Water who intend to undertake further customer engagement prior to the final plan. Therefore, we expect the final plan to demonstrate that customers have been able to participate effectively in the planning process and how this shaped the final plan.<br><br>Further specific comments:<br><br>- The draft plan is reasonably accessible, individual sections are generally clear to understand and a non-technical summary of the plan is available which is helpful. However, with both the preferred plan and alternative plan being presented it is not clear what the final plan may look like, making it difficult to engage on specifics of the draft plan.<br><br>Further considerations:<br><br>• The company promote the preferred plan in the consultation material as being the best value, which potentially frames and influences customer responses. This positioning should be taken into account when reviewing responses and finalising the plan.<br><br>• It is not clearly explained in the material how the alternative plan is derived from the preferred plan. In the final plan the relative differences between the plans should be made clearer, specifically addressing how they reflect regulatory challenges on leakage reduction, the scope for resilience improvement and obligations such as abstraction licence changes. |
| | **Our Response** | **Throughout customer consultation, the Alternative Plan received strong endorsement and forms the basis for our revised dWRMP. Customers and stakeholders have therefore shaped our WRMP.**<br><br>**We will be further consulting with customers and stakeholders on the revised dWRMP in Spring 2019. This will address how we are reflecting regulatory** |

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| | | **challenges on leakage reduction, the scope for resilience improvement and abstraction licence changes.** |
| | Summary of any change to our revised dWRMP | The findings from our customer market research have informed our revised dWRMP. |
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| 21.10 | Representation | The draft plan presents pre-consultation results showing that 65% of customers consulted do not consider additional investment should be used to reduce the frequency of drought orders. The enhancement of level of service in the alternative plan is a clear distinction between the two plans. Therefore it should be supported by robust evidence.<br><br>Further considerations:<br><br>• The extent of this engagement is not detailed within the plan and it is unclear how the proposed change in level of service was presented to customers. It is also uncertain whether comparative resilience to neighbouring companies was used given the relatively poor service levels at present. These should be clarified in the final plan.<br><br>• If the alternative plan is selected Affinity Water should demonstrate clear evidence for changes to customer preferences relating to levels of service. |
| | **Our Response** | **We carried out specific customer research in relation to resilience to inform our Business Plan. This demonstrated 78% of customers support Affinity Water investing now to ensure sufficient water in the future. It also showed that 87% of customers think "making sure there is enough water in the future" is important and 84% of customers think "maintaining and updating the infrastructure" is important.**<br><br>**We will produce a revised dWRMP in which the decision-making process will be clarified and strengthened and we will ensure that the information that we have obtained on customer preferences and stakeholder feedback are taken into account.**<br><br>**We will be further consulting with customers and stakeholders on the revised dWRMP in Spring 2019, providing further opportunity to engage on this issue.** |
| | Summary of any change to our revised dWRMP | We will be further consulting with customers and stakeholders on the revised dWRMP in Spring 2019, providing further opportunity to engage on this issue.<br><br>We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
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| 21.11 | Representation | It is unclear from the draft plan that customers have been consulted regarding the selection and identification of options, and their preferences for option types such as leakage reductions. This should be clarified as part of the final plan alongside a clear explanation of how this has influenced the selection of preferred options. |
| | **Our Response** | **We will be further consulting with customers and stakeholders on the revised dWRMP in Spring 2019, providing further opportunity to engage on the selection of options and preferences.** |
| | Summary of any change to our revised dWRMP | We will be further consulting with customers and stakeholders on the revised dWRMP in Spring 2019, providing further opportunity to engage on the selection of options and preferences. |
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| 21.12 | Representation | Affinity Water has presented customer bill impacts in its draft plan as total costs per 5-year period. While this is useful, it is unlikely to be particularly informative for individual customers to interpret and an estimated impact on the average bill would have been clearer. Therefore in the final plan we would expect Affinity Water to provide clarity on bill impacts and make them more accessible to customers. |

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| | **Our Response** | **We included potential bill impact information in our dWRMP customer survey which was undertaken with 1,000 customers. This was for individual elements of the bill. The full impact on bill levels were also included within our Business Plan consultation with customers and stakeholders.** |
| | Summary of any change to our revised dWRMP | We will seek to provide information on bill impacts as part of our further consultation on o9ur revised dWRMP |
| | | |
| 21.13 | Representation | Affinity Water's Customer Challenge Group (CCG) has been involved in the development of the plan. The draft plan provides a description of this and we expect this to continue for the final plan. |
| | **Our Response** | **Our Customer Challenge Group will be involved in the development of our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 21.14 | Representation | 3. Demand forecast<br><br>Population growth is one of the main drivers of the plan. Affinity Water appears to have followed the relevant guidance and assessed demand through consideration of appropriate components. We are concerned about the approach to population growth, PCC trends and the lack of engagement with non-household retailers. In particular:<br><br>- The use of a trend-based population forecast and incorporation of the local authority plan-based forecasts is an innovative approach. However, the final plan should clarify this hybrid method does not result in lower forecasts than only using the local authority plan-based method, particularly in the near term.<br><br>• The company needs to provide further explanation of the baseline PCC trends. For example, it is not clear why average baseline PCC is forecast to increase late in the planning period or what impact baseline water efficiency measures have and how they are included. This should be clarified for the final plan.<br><br>• The trend in non-household demand is relatively constant over the planning period. We welcome the company engaging with large users such as airports, a power station and the rail network to enhance this forecast. We recognise that the company attempted to engage with non-household retailers but has been unsuccessful so should consider alternative approaches to further validate the demand forecast, and reflect outputs of this in the final plan. |

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| | **Our Response** | **Following consultation on our dWRMP, we have updated our property and population forecasts. The changes consist of the following:**<br><br>**1. We adjusted the way the annual property build rate is applied. At draft plan, we calculated the company level annual build rate and then applied it based on the proportion of additional properties in each Water Resource Zone (WRZ). We have now calculated an annual build rather per WRZ and applied this so that our final property number in each WRZ matches the Experian forecast end point (2044/45).**<br><br>**2. The rebasing of the Experian forecast against our annual return property number saw a reduction in properties of 93,934 at draft plan. These were then lost from the forecast. We have instead adjusted the annual build rate to incorporate the inclusion of these across the 25 year forecast. The rational here is that forecasted build rates in recent years have been too ambitious but the housing stock is still required to meet demand for housing in our supply area. Instead these properties will just be delivered later in plan than originally forecasted but not lost.**<br><br>**3. The population forecast is then derived by getting the end points by zone to match the Experian forecast and applying occupancy data from the original Experian trend.**<br><br>**We have also compared our revised property forecast with detailed information gathered from local authority plans. This analysis shows that, although zonal variations exist, we are forecasting slightly more total properties than local authorities in the first 15 years of our forecast. This difference, however, ranges from 0.07% and 1.94% of our total property count.**<br><br>**We recognise that since submission of our dWRMP, the Great London Authority's London Plan has been published. However, the London Plan is at its draft stage and it is our understanding that the housing targets set in the London Plan will be finalised at the beginning of 2020. For this reason, we will explore GLA property figures in a separate scenario but they will not form part of our baseline assessment**<br><br>**Baseline PCC trends are the result of the interaction between forecasted level of consumption and occupancy rates. In our baseline supply/demand balance, which represents a 'do nothing' scenario, aggregate consumption is set to increase due to population growth. At the same time, occupancy rates are falling meaning that on average larger volumes of water will be distributed across smaller households. The effect is an increase in baseline PCC that is shown in our submission tables. Our demand forecast assumes we are going to meet our ODI targets related to PCC in AMP6. In order to achieve these targets, our WSP is included in the baseline demand forecast. This programme includes metering, customer supply pipe leakage reduction and water efficiency activities.**<br><br>**Additional analyses have been carried out between draft and revised dWRMP to evaluate the impact of property reclassification**<br><br>**We will consider alternative approaches to engaging with retailers to further validate the demand forecast for non-household customers.** |
| | Summary of any change to our revised dWRMP | We have updated our property and population forecasts. |
| | | |
| 21.15 | Representation | 4. Supply forecast<br><br>Affinity Water has calculated available supply in line with guidance and statistical approaches have been used to help determine low frequency drought yields with higher levels of confidence which is an example of good practice. However, further work is required in a number of areas including the approach to abstraction licence reductions, climate change impacts on supply and outage. In particular: |

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| | | • The Water Industry National Environmental Programme (WINEP) abstraction licence changes have a significant impact upon the available supply and are presented differently in the preferred and alternative plan.<br><br>Further considerations:<br><br>• The preferred plan represents licence change impacts for the certain (green) WINEP category resulting in a 10Ml/d loss of available supply by 2025. The alternative plan has licence impacts of 40Ml/d resulting from including both certain and indicative (amber) licence impacts. The alternative plan approach represents the guidance more closely and the company needs to address this discrepancy in its final plan.<br><br>• For the final plan we expect Affinity Water to revise its forecasts with reference to the latest WINEP outputs (release 3) and explain any variations with the previous release and how the selected plan, either preferred or alternative, has changed as a consequence.<br><br>• While climate change impacts on droughts more severe than those recorded historically have been assessed, full details of these are not included in the draft plan. This reduces the transparency of the alternative plan which is based on these more severe scenarios. If the alternative plan is chosen as the final plan, the full details should be presented.<br><br>• Outage has increased from 5% to 8% since the previous plan, bringing it above the industry average of 6%. For context this increase accounts for Affinity Water – draft water resources management plan 2019 around 30Ml/d, which is material to the company supply-demand balance.<br><br>Further points:<br><br>• the draft plan notes this is caused by issues at a few large surface water abstractions, however, greater clarity is required on the sensitivity of outage to these few sources and the drivers behind the change from the previous plan.<br><br>• Given its impact on available supply we would expect the company to consider measures to reduce outage further given its forecast supply demand deficits. It is unclear whether such outage improvement options have been considered and this should be clarified in the final plan. |
| | **Our Response** | **We have included investment in our Business Plan to enable us to deliver the full Water Industry National Environment programme 3 (WINEP3) reductions and we shall not be implementing any of the bringing back up to licence supply schemes.**<br><br>**We are working with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced groundwater abstraction 42 Ml/d at the company scale. In our revised dWRMP, a further reduction of 36.31 Ml/d is planned by 2024.**<br><br>**Our extensive monitoring programme will enable us to identify these benefits in river flows and the ecology as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.**<br><br>**Full details of climate change impacts on droughts more severe than those recorded historically will be included in the revised dWRMP.**<br><br>**We have set a target for our Business Plan for AMP7 (2020-25) Unplanned Outage (Ml flow rate) of 3.5%. This is the amount of time that water production assets are not available due to unplanned maintenance.** |

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| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Full details of climate change impacts on droughts more severe than those recorded historically will be included in the revised dWRMP.<br><br>Greater clarity will be provided on the sensitivity of outage to these few sources and the drivers behind the change from the previous plan. |
| | | |
| 21.16 | Representation | 5. Forecast uncertainty<br><br>Affinity Water's approach to target headroom appears to be in line with guidance and it has adopted a target headroom of around 9% of demand, slightly above the industry average of 8%. The draft plan also identifies additional risks and uncertainties including the potential impact of High Speed 2 on some groundwater sources and metaldehyde risks for bulk transfers. However, greater clarity on the mitigations should be provided in the final plan to ensure confidence in the robustness of the plan. |
| | **Our Response** | **Analysis of the impact of HS2 has taken place and is included in the dWRMP (section 9.5.2, page 178). It is recognised that the amount of detail included in the dWRMP was limited and, where possible, further detail will be included in our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Where possible further detail will be included in our revised dWRMP. |
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| 21.17 | Representation | 6. Supply-demand balance<br><br>The supply-demand balance profile presented is in line with the assumptions of the individual supply and demand components and it appears to be consistent with the guidance. However, concerns related to individual components of supply and demand have been noted above, which need further clarification. We are also concerned on the transparency of the presentation of the preferred and alternative plans. In particular:<br><br>• Although a supply-demand balance output is presented in the plan narrative for both plan scenarios, only one set of planning tables are produced for the preferred plan scenario. This means it is not possible to fully understand the alternative plan. In particular:<br><br>  ○ It is not clear what level of emergency drought order restrictions are included in this plan under 1-in-200 year drought conditions.<br><br>  ○ It is also unclear what differences in the supply forecast there are to the preferred plan other than supply-side drought orders/permits not being relied on during severe drought and an additional 30 Ml/d of indicative abstraction licence reductions.<br><br>• While the presentation of two costed alternative scenarios for planning captures the key issues for consultation, the approach makes it harder to identify the costs and impacts associated with each area of uncertainty. This would be clearer under more conventional sensitivity testing and the company should consider how it can make the nuances between the two plans clearer in the final plan.<br><br>• In the final plan we would expect Affinity Water to provide clear evidence for the choice of final planning scenario (either preferred or alternative). This should explain how the outcomes of consultation with customers and key stakeholders have influenced the decision. |

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| | **Our Response** | **We will present one single revised dWRMP and related planning tables. The difference in the supply forecast between the preferred and alternative plan was mainly in the use of different return period deployable outputs: the preferred plan was using a 'worst historic' Deployable output (DO) whereas the alternative plan used a 1:200 DO.**<br><br>**We will present one single revised dWRMP that takes on board feedback and comments received during the consultation. A revised decision-making process will provide the evidence for selection of options within the revised dWRMP.** |
| | Summary of any change to our revised dWRMP | We will present one single revised dWRMP that takes on board feedback and comments received during the consultation. A revised decision-making process will provide the evidence for selection of options within the revised dWRMP.<br>. |
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| 21.18 | Representation | 7. Options<br><br>Reflecting the scale of the challenge, Affinity Water has considered a range of supply and demand options. However, further work is required around a number of options, including the approach to trading and supply options. There also appears to be a lack of ambition in the target average PCC and a lack of clarity on the approach taken for leakage reduction. |
| | **Our Response** | **Our revised dWRMP will also include the latest understanding collated through ongoing work on inter-company, regional and third party options. This is supported by our Trading and Procurement Code and our Bid Assessment Framework. These documents set our proposed approach to assessing water trading and third party options.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and our 14% leakage reduction programme, the largest leakage reduction in AMP6 across the water industry.**<br>**We have included a performance commitment in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and we are aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d for 2025 compared with customers' current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 which was supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.** |
| | Summary of any change to our revised dWRMP | We have set a target in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
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| 21.19 | Representation | Affinity Water has used what appears to be appropriate screening criteria and processes for developing lists of options. This used a phased screening approach with individual scores applied to screening components with the total score deciding if the option passes to feasibility. |
| | **Our Response** | **No response required.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 21.20 | Representation | Affinity Water has provided a clear summary of its third party engagement process and the methods adopted to seek new third party options, including the use of an Official Journal or OJEU to promote the need and generate third party interest. Further considerations:<br><br>• We welcome that Affinity Water has specified six third party options in its feasible list, with clear explanations for the 12 unconstrained options that were not selected. We note the focus of the options was on supply and the company should consider what it could do in order to promote demand options.<br><br>• The preferred plan includes two third party options (third party groundwater sources and reservoir), however, these are both planned for very late in the planning period (2052 earliest delivery). It is unclear what cost assumptions have been made for third party options and any impact the alternative plan would have on these options. Both these points requiring clarification in the final plan. |
| | **Our Response** | **Affinity Water has submitted its Bid Assessment Framework which sets out how Affinity Water intend to engage with third parties on both supply and demand management options, in the future.**<br><br>**The two third party options are Canal & River Trust (CRT) options. The BREN scheme (selected in 2052 in the preferred plan) was actually selected earlier than other alternative strategic supply solutions for long term deficits in Water Resource Zone 4. However, in this planning scenario the planned sustainability reductions are lower than the alternative plan, as were the demand management targets, which means that the supply schemes were not required until later in the planning scenario. In the alternative plan, which had higher sustainability reductions and more challenging demand management targets the strategic infrastructure was triggered earlier (at 2039). This was to meet higher deficits, the BREN scheme was retained but actually not required until later in that scenario.**<br><br>**Affinity Water continue to correspond with the CRT and are providing the CRT with a level of information that was required. We have since met with the CRT and discussed these options to revise understanding where needed. This understanding included cost assumptions.** |
| | Summary of any change to our revised dWRMP | We are further assessing all options in developing our revised dWRMP using our revised decision making process. |
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| 21.21 | Representation | Affinity Water recognise its potential significance as a "regional hub" for water resource transfers and water trading is a key feature of the draft plan, although we have concerns about the consistency of the presentation of some transfers. Further comments:<br><br>• The preferred plan includes a reduced export to South East Water, reduced import from Anglian Water and significant imports from Thames Water late in the planning period. The reduced import from Anglian Water is in contrast to Affinity Water's near term needs for additional water and needs further explanation.<br><br>• It is unclear how effective Affinity Water's engagement with its trading partners has been as there are mismatches in trades between company plans. The starting value, trend and end point of the reduced import from Anglian Water is not consistent between the two companies, with a difference of 23 Ml/d in its starting value for example.<br><br>• Linked to this point the costs of the preferred options in Affinity Water's draft plan appear to be significantly lower than the costs presented in trading partners' plans. This includes the trade with Thames Water and here the option dossier costs are also significantly different to the planning tables. In the final plan Affinity Water should provide greater evidence on the costing of trades.<br><br>• Linked to the above point the cost impact is significant as later in the planning period there is a clear choice between an additional trade from Anglian Water or Thames Water. Currently Affinity Water selects 50 Ml/d additional transfer from the River Thames in preference to a transfer from Anglian Water. Greater clarity is required on this choice, it's deliverability and the overall costs and benefits of alternative regional strategies. |

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| | **Our Response** | **Affinity Water offered an option to Anglian Water to make use of a proportion of our statutory entitlement that we are currently unable to use because of issues regarding differences in chemical qualities of surface and groundwater that prevents us from supplying it freely within our supply area. We intend to install conditioning treatment at SUND that will allow us to use our full statutory entitlement from 2024 onwards. The offer was made when we did not expect to use our statutory entitlement until a later date. Anglian Water has since declined the opportunity to take up the option as Affinity Water have now brought forward the scheme at SUND which meant the timing would no longer be favourable. The import from SUND is, therefore, not a reduction in an import from Anglian Water.**<br><br>**Where differences occurred between companies these are being checked for the revised dWRMP, which will help to reduce inconsistency.**<br><br>**Planning table costs are discounted costs whereas option dossiers are undiscounted.**<br><br>**All strategic transfer options including the transfer from Anglian Water are being reassessed in developing our revised dWRMP using our revised decision making process.** |
| | Summary of any change to our revised dWRMP | All strategic transfer options are being reassessed in developing our revised dWRMP using our revised decision making process. |
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| 21.22 | Representation | Affinity Water's preferred plan has leakage reducing by 10% by 2025, 15% by 2030 and only 16% by 2045. The alternative plan targets 15% reduction by 2025, increasing to 33% by 2080 (2045 ambition is not stated). Further considerations:<br><br>• There is an incomplete representation of the leakage programme for the alternative plan in the draft plan. It is unclear how it will be achieved and how it links to current leakage targets and this reduces the transparency of the draft plan.<br><br>• It is unclear how the leakage options relate to customer preferences. As set out in section 2 it is unclear from the draft plan if customers have been consulted regarding the selection and identification of options, prior to the draft plan being published. Clarity on customers' views on leakage reductions should be presented as part of the final plan.<br><br>Affinity Water has an ambitious compulsory metering programme supported by smart network loggers to better understand customer demand trends. The level of metering penetration rises from a forecast 75% in 2020 to 91% by 2025 delivering up to 50Ml/d in benefits.<br><br>In the preferred plan the long term target for average PCC at 132 l/h/d by 2045 is less ambitious than the average for other companies nationally (122 l/h/d) and lacking the ambition of leading companies. This is made more significant by the likely scale of the supply-demand balance challenges Affinity Water face. Further observations:<br><br>• Company average PCC is the second highest of all companies in 2020. Affinity Water forecasts an improvement to its average PCC ranking by 2025 as a result of baseline metering but falls back to original position by 2035 as other companies forecast ongoing reductions in PCC.<br><br>• It is unclear what the baseline water efficiency options are although it is to be predominantly based on metering. Alongside this other leakage control options and pressure management options are not selected from the feasible list, even though they are potentially lower cost. In the final plan Affinity Water should provide greater clarity on the selected water efficiency portfolio. |

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| | **Our Response** | **We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and our 14% leakage reduction programme, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We have included a performance commitment in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and we are aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d for 2025 compared with customers' current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 which was supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>We are committed to reducing PCC and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>We will ensure that the evidence that we have collected on customer preferences is referenced and reflected in our decision-making process. |
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| 21.23 | Representation | A large number of supply-side options are presented in the preferred plan and include several new and existing groundwater options, a new reservoir for delivery after 2050, as well as the water trades described above. It is unclear if these change between preferred and alternative plans and the draft plan does not provide sufficient evidence that the proposed supply-side options are appropriate:<br><br>• Across the options we would welcome greater clarity on the assumptions made in the development of the draft plan. This should include greater detail on the potential risks in deliverability and uncertainty in timing. For example large options carry a number of risks for delivery, which should be resolved early given the lead-times for the construction of support options.<br><br>• The company should ensure that the proposed schemes mitigate any identified environmental issues and are deliverable. For example, we note there are environmental concerns regarding groundwater options in the preferred plan.<br><br>• It is unclear why Affinity Water reduce the import from Anglian Water and replace it with a transfer of water from zone 1 and zone 4 to zone 3. We would expect Affinity Water to clearly justify why this is more appropriate than maintaining the existing trade option from Anglian Water, which is the assumption that Anglian Water has made. |
| | **Our Response** | **Affinity Water have revised the decision-making process to include the risks and deliverability consideration relating to our options and will present this revised process in the revised dWRMP narrative for greater clarity.**<br><br>**In our revised dWRMP, there will be no new groundwater from chalk aquifers in our Central region.**<br><br>**Affinity Water offered an option to Anglian Water to make use of a proportion of our statutory entitlement that we are currently unable to use because of issues regarding differences in chemical qualities of surface and groundwater that prevents us from supplying it freely within our supply area. We intend to install conditioning treatment at SUND that will allow us to use our full statutory entitlement from 2024 onwards. The offer was made when we did not expect to use our statutory entitlement until a later date. Anglian Water has since declined the opportunity to take up the option as Affinity Water have now brought forward the scheme at SUND which meant the timing would no longer be favourable. The import from SUND is, therefore, not a reduction in an import from Anglian Water.** |

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| | Summary of any change to our revised dWRMP | A revised decision-making process, to include the risks and deliverability considerations relating to our options, will be presented in the revised dWRMP narrative.<br><br>There will be no new groundwater from chalk aquifers in our Central region |
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| 21.24 | Representation | General statements are provided on the cost estimating methodologies and we have a concern that there are often inconsistencies between the planning tables and the options dossiers (including costs presented by other parties), particularly around capital expenditure. This reduces our confidence in the robustness of the costs presented and requires greater clarity in the final plan. For example:<br><br>• The two third party options selected for late delivery have capital expenditure substantially higher than those presented in the option dossiers.<br><br>• Both the Anglian Water and Thames Water feasible transfer options in the respective planning tables have notably higher costs than that specified in the respective option dossiers for pipelines and treatment. |
| | **Our Response** | **Cost inconsistencies between the planning tables and the option dossiers exist because the planning tables require Economics of Balancing Supply and Demand model output costs which are discounted. The option dossier costs are not discounted.**<br><br>**We have met with the third party (Canal & River Trust) and discussed costs for these two options and the most up to date costs will be used in our modelling and revised decision making process for the revised dWRMP.**<br><br>**Thames Water and Anglian Water transfer option costs were higher in the planning tables than the dossiers. This was due to option infrastructure being costed into the dossier only, the water company tariff/charges were not available at the time of dossier creation but they were available for modelling and therefore feature in the modelled outputs presented in our submitted planning tables.** |
| | Summary of any change to our revised dWRMP | Inconsistencies will be addressed in our revised dWRMP. |
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| 21.25 | Representation | 8. Decision making<br><br>Affinity Water has adopted an enhanced Economics of Balancing Supply and Demand (EBSD) approach, incorporating Multi Criteria Assessment and Info Gap testing, to develop its plans consistent with the problem characterisation. However, there is limited evidence presented in the draft plan regarding the final decision-making process and how the best value plan was chosen across the preferred and alternative plans. Further transparency is also required on deliverability and scenario testing. Further specific comments:<br><br>While there is a large amount of material provided on the decision support tools it is unclear how the final preferred portfolio was selected across the preferred and alternative plans. In the final plan we would expect to see a clear summary that concisely explains how and by whom the preferred portfolio was decided on.<br><br>It is stated that best value plans have been developed. However, greater clarity is required concerning the drivers behind the best value plans and how they influence the option selection. Further considerations:<br><br>• It is not clear from the draft plan whether the differences between the preferred and alternative plan have been assessed against the least cost alternatives for their respective planning conditions. This reduces the transparency of the plan and this comparison should be provided in the final plan.<br><br>• Resilience was included as a criterion to inform the screening of unconstrained options, however, it is unclear whether option resilience was considered at any subsequent stage in option selection and how the options in the preferred |

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| | | programme perform in terms of resilience. Affinity Water should provide further clarity on the resilience of its chosen options in the final plan.<br><br>• It is unclear how the reduction in imports from Anglian Water fits in with the provision of a best value and resilient plan, and more clarification is needed for the chosen final plan.<br><br>It is not clear how deliverability has been considered in the decision-making process and this needs to be clarified in the final plan. For example, some of the groundwater options may be difficult to deliver while also mitigating risks to the environment.<br><br>Linked to the above point it is not clear what the alternative solutions would be if options are delayed or not progressed. In the final plan greater clarity is required on how the testing of scenarios has influenced the selected options in both the preferred and alternative plan.<br><br>There is evidence of assurance of the draft plan and of engagement with the Affinity Water executive team and the Board during the plan development and its approval. However, given the concerns raised above, greater clarity is needed on how this process has influenced the outputs in the final plan. |
| | **Our Response** | **The narrative of the revised dWRWP will explain clearly and concisely the decision-making process which led to the publication of the revised dWRMP. This will be accompanied by a technical report on decision-making which will explain in more detail the basis for shortlisting and selecting options, as well as the rejection of options. In particular, the way in which the revised dWRMP has been influenced by the desire to build resilience will minimising harmful environmental impacts will be set out.**<br><br>**We will improve the ESBD model so that it includes further metrics (such as resilience). Further, a greater range of alternatives will be explored, including least-cost alternatives, to demonstrate how they compare to the revised dWRMP.**<br><br>**As required, by *Final water resources planning guideline*, we will provide assurance from our Board that they are satisfied the revised dWRMP represents the most cost effective and sustainable long term solution.** |
| | Summary of any change to our revised dWRMP | The narrative of the revised dWRWP will explain clearly and concisely the revised decision-making process<br><br>We will improve the ESBD model<br><br>Our Board will provide assurance that they are satisfied the revised dWRMP represents the most cost effective and sustainable long term solution |
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| 21.26 | Representation | 9. National and regional considerations<br><br>Affinity Water has worked closely with the WRSE and WRE regional groups and recognises its potential role as a "regional hub" for water resource cross-boundary schemes and trades. However, significant water imports are only included after 2030 and there is an open question whether more can be done in the near term to seize the opportunity of regional solutions to address its challenge and those of the wider south east region. In particular:<br><br>The draft plan clearly references the company's involvement in both WRSE and WRE. Further considerations:<br><br>• The option types presented in the draft plan and order of selection are comparable with WRSE. This includes the inclusion of the Thames Water transfer which is supported by Abingdon reservoir.<br><br>• We recognise Affinity Water faces continuing uncertainty regarding its requirements. Further or earlier transfers have the potential to impact upon the delivery of major schemes within other company plans. Therefore, Affinity Water should ensure it actively co-operates with other WRSE members in order to produce aligned final plans that benefit the region and its customers as a whole.<br><br>• WRE has not been used to directly inform company planning scenarios because of |

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| | | its differences in approach to supply-demand balance and Affinity Water – draft water resources management plan 2019 delays with the delivery of its regional strategy. For the final plan we would expect Affinity Water to continue to engage with WRE to ensure regional alignment where possible.<br><br>The draft plan references the Water UK national project, including the identification of large scale transfers, however, the company should further clarify how it has informed its decisions in the final plan. |
| | **Our Response** | **Our revised dWRMP will consider all available demand and supply side options together with third party and collaborative options with other water companies. where they may provide opportunities to improve resilience at a regional level.**<br><br>**We continue to lead on proposals to develop regional approaches to modelling and incentivising water trading opportunities within Water Resources South East (WRSE) as we see that as the best way to achieve more optimal solutions for sharing of existing resources in the South East and East of England in the nearer term.**<br><br>**We are also continuing to meet with our neighbouring companies and regulators in order that we continue to align our plan with other company plans thereby supporting the regional approach.**<br><br>**Affinity Water have continued to engage with Water Resources East (WRE) at technical and communication group level, and attended the recent launch event. For example, Affinity Water are developing a costed inter-company option with Essex and Suffolk Water to meet near term resilience issues in Water Resource Zone 8 and we have had initial discussions with Anglian Water to explore ways which desalination may benefit both companies supply areas in our East region.**<br><br>**The work undertaken as part of the Water UK national project has informed our revised dWRMP, mainly in terms of drought resilience. At national scale, the modelling of transfers did not take into account the local boundary conditions that exist at the more granular regional and company level. The actual transfer options that exist to move the potential surplus from other regions into our Central region (from the Midlands to WRSE either directly or via WRE) are being considered as options in the development of our revised dWRMP.**<br><br>**These include an additional import from Anglian Water, an alternative direct import from Severn Trent Water or canal options. We also attend the Trent Working Group and continue to liaise with Thames Water on the current status and future progress of the Severn Thames Transfer option.** |
| | Summary of any change to our revised dWRMP | Our revised dWRMP will consider third party and collaborative options with other water companies. where they may provide opportunities to improve resilience at a regional level.<br><br>In developing our revised dWRMP we will continue to work with and contribute to WRE and WRSE. |
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| 22. River Beane Restoration Association | | |
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| 22.1 | Representation | Requested hard copy of dWRMP. |
| | **Our Response** | **Copy sent.** |
| | Summary of any change to our revised dWRMP | N/A |

| 23. River Chess Association | | |
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| 23.1 | Representation | Please find below a few more follow up requests for data.<br><br>I would like to see historic consumption figures on an annual basis across all of your areas, Best to see it going back 10 years in l/d per person<br><br>Could you direct me to where the New Sources of groundwater are coming from for the WRMP for both versions of the plan.<br><br>Could you direct me to where the reductions of groundwater abstractions are coming from for the WRMP for both versions of the plan.<br><br>Leakage data - can we see the historic levels of reductions possibly going back 10 years.<br><br>Price per litre to customers by Affinity area compared with all major water companies. |
| | **Our Response** | **Several of these points were discussed at the Affinity Water Misbourne Community Stakeholder Forum, 2nd May 2018.**<br><br>**A subsequent representation (Ref 23.2-23.6 of this Statement of Response) has since been received from the River Chess Association which we have provided a detailed response to.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 23.2 | Representation | We have carefully considered Affinity Water's draft Water Resources Management Plan and attended the Affinity Water - Misbourne Community Stakeholder Forum, on the 2nd May 2018 and have come to the conclusion that as far as our the globally rare chalk streams are concerned neither their Preferred Plan nor their Alternative Plan contains much good news.<br><br>If we are to have any chance of seeing the 'Clean and Plentiful Water' and 'Thriving Plants and Wildlife' envisioned by A Green Future we ask you to take these three steps: |
| | **Our Response** | **See responses below.** |
| | Summary of any change to our revised dWRMP | N/A |
| 23.3 | Representation | 1. End the over-reliance on groundwater<br><br>The rivers of the Chilterns are fed by the chalk aquifer and it is deeply troubling that in 2017, a year when no drought was declared, large sections of them were completely dry. Despite a relatively wet 2017/8 winter this situation widely persists. We have seen for ourselves miles of dry river bed and greatly diminished flows resulting in loss of habitat for invertebrates, fish, birds and mammals, and a build-up of smothering silt. It is frightening to contemplate just how bad it will be if even a 1 in 10 drought event occurs.<br><br>Affinity's plans suggest that in the next 5 years, and for the foreseeable future, abstraction of groundwater remains the cornerstone of their water supply. There is no extra water available for use - in fact less over the next 5 years - until 2039, at the earliest, when Thames Water's proposed Abingdon Reservoir might come on stream. And should a drought be declared? It will be a disaster for the environment, as the solution to the problem is the issue of permits that will allow even more groundwater to be taken from the chalk. Nothing is being done to address this.<br><br>Affinity supply 8 separate regions and demand varies significantly, at the Misbourne Community Stakeholder Forum, 2nd May 2018 figures were presented that indicated a wide divergence of per capita consumption across these regions from 169 litres per day per person in the Pinn Region to 127 litres per day per person in the South East Region. It was noted at the Stakeholder Forum that the South East Region has greater investment autonomy and has been focussing their efforts on leakage reduction, |

| 23. River Chess Association | | |
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| | | customer metering and improving infrastructure. In addition we were told the South East Region customers pay a higher price for their water. We strongly believe that all these factors lead to the much lower levels of water consumption in this region. If a model was needed on how to run a water company Affinity already has it.<br><br>Affinity have some of the lowest water bills in the country, ironically in areas of very high incomes where many customers could afford to pay more. The water is cheap because it comes from the aquifer, taking water that should be destined to chalk rivers. This water has been pre filtered by the chalk so requires little additional processing. In many cases it is abstracted at the head of catchments and can therefore be delivered to customers cheaply using gravity. This means that the current OFWAT model dictates that the price charged to customers reflects the cost, hence low prices. This should be reviewed and in areas that can and are willing to pay more that the supplement goes to the protection of the environment and significantly reduces the reliance on groundwater.<br><br>We also believe that any consumption reductions reflect directly in a reduction in abstraction and not a reduction in the more costly imported water transferred from other water companies.<br><br>We consider that the magnitude of the challenge in the South East requires a co-ordinated regional approach to water including the investment in significant infrastructure projects.<br><br>Please bring the full powers of government and regulators to assist but also demand that Affinity reduce their reliance on groundwater in a speedy and determined fashion. |
| | **Our Response** | **We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we were not requested to implement any sustainability reductions for the River Chess as all water abstracted from the upper catchment (i.e. CHES and CHA sources) returns to the river via the Chesham Sewage Treatment Works (STW) outflow, thus mitigating the impact of abstraction. The section of the river upstream of the STW outfall has been the focus of the AMP6 National Environment Programme (NEP) investigation which is in the Options Appraisal stage. We have allowed for total cessation of CHA and CHES sources as a worst-case scenario should it be required pending the outcome of the Options Appraisal. This volume, which may need to be reduced, is included in the company wide reduction of 36.31 Ml/d planned for AMP7 (2020-25) implementation in the revised dWRMP.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.**<br><br>**We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024 |
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| 23. River Chess Association | | |
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| 23.4 | Representation | 2. Keep Affinity on target and hold them to account<br><br>Affinity has made some bold plans to balance supply and demand which include testing targets. In the South East of England, where population and housing are rising steeply, Affinity is projecting a fall in demand for water over the next 5 years.<br><br>The company believes that some tried but some barely tested techniques - consumer education, an ambitions leak reduction programme and the roll out of water meters - will deliver the significant savings required. It is difficult to have confidence in these assertions especially when Affinity's most recent projections for consumer demand in 2016/17 were wide of the mark - consumer consumption rising 5 litres per head per day when forecast to fall.<br><br>Should Affinity's optimistic forecast prove accurate, our chalk streams are still in for a tough time. Should they prove wrong, then groundwater will be called upon to make up the difference and our rivers and environment will pay dearly as there is little supply tolerance or resilience in the plan.<br><br>We call upon government and regulators to scrutinise Affinity's projections in detail and rigorously police whatever forecasts are agreed. Swift action should be taken and suitable penalties applied should leak reduction targets be missed or consumer savings not materialise. |
| | **Our Response** | **In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 as per Ofwat's challenge and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**These activities are reflected in our baseline demand forecast for WRMP 2019 and thus we are forecasting an initial reduction in total demand during the remainder of AMP6 and into AMP7 (2020-25). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area.**<br><br>**Our demand forecast is supported by actual data gathered from our Water Saving Programme which shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is consistent with other metering programmes in the water industry.** |
| | Summary of any change to our revised dWRMP | A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and further reduction to 110 l/h/d by 2040.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
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| 23. River Chess Association | | |
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| 23.5 | Representation | 3. Ensure Abingdon Reservoir is built<br><br>Looking further ahead, we whole-heartedly support Affinity's link to the Upper Thames Regional Development project and the additional water that it will bring to the area. Having the ability to capture water when it's in abundance and use it to reduce pressure on groundwater is essential to the health of our chalk streams.<br><br>However the enthusiasm for, and the success of, this pivotal project rests mostly outside of Affinity's control. We are concerned that so much of Affinity's future planning hinges on this single project being commissioned and delivered on time.<br><br>We also see that the Abingdon Reservoir is essential but see the current timing as too late to be of any benefit for what is already an environmental disaster. Work needs to start today on this project for us to be able to reduce our dependence on groundwater.<br><br>We ask that you bring all pressure to bear to guarantee that the Abingdon Reservoir is built with work starting now. |
| | **Our Response** | **We are committed to working with neighbouring water companies and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part in two regional groups - Water Resources South East and Water Resources East and the Water UK Water Resources Long Term Planning Framework projects.**<br><br>**Within the regional context, our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. Based on work done to date, the preferred strategy is to secure additional reliable water by transferring water from a new regional reservoir in the Upper Thames catchment (referred to as the South East Strategic Reservoir) in partnership with Thames Water. This could support new abstractions in the Lower River Thames reaches. It should also increase our resilience and allow full conjunctive use of the surface and groundwater system. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**However, we are carefully considering the suitability of this option along with the appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this "Supply 2040"<br><br>We will continue our work with Water Resources in the South East (WRSE) and Water Resources East (WRE) and will share our activity based costing model with other companies in the WRSE to promote transparency of cost of water transfers, which we believe is essential for water transfer arrangements. |
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| 23.6 | Representation | 4. Over Abstraction in the River Chess Catchment<br><br>The Chess catchment has suffered from over abstraction for many years and in the last 20 years we have seen a 52% increase in water abstracted for public consumption. Most of this increase has come to meet supply outside of the Chess Catchment for the town of Tring. The need for this increased supply is due to the shutting down of the New Ground pumping station operated by Thames Water as part of a sustainable abstraction reduction for the Bulbourne Catchment. Ironically this reduction scheme was unsuccessful for the Bulbourne as all of the decrease has been matched by an increase in abstraction for the Grand Union Canal. So in effect the Chess, an iconic chalk stream, is enabling supply of water for a canal. The Chess has dried up 4 times in the last 6 years, the last time for 18 months with water returning only in April of this year. We need to see both Thames Water and Affinity Water bring forward plans to immediately reduce abstraction in the Upper Chess catchment to stop this disastrous cycle of frequent drying events. |

| 23. River Chess Association | | |
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| | **Our Response** | **Affinity Water has been funding a study by Mott McDonald throughout the last four years into the impact of abstraction in the Upper River Chess above the treatment works in Chesham. The River Chess Association is an active partner in the Colne Catchment Action Network and in the study. The benefits of abstraction reduction in a drought are not clear. Nonetheless, Affinity Water has included all of the sources that are rated amber and green, including both of its sources in the Upper Chess area, as sustainability reductions in our Business Plan for PR19. Moreover, the Abstraction Incentive Mechanism (AIM) includes these sources meaning that if low flow triggers are reached lower in the Colne catchment that abstraction is reduced in sources in the Upper Chess area.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
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| 23.7 | Representation | In summary<br><br>We believe it is time to take bold steps and in respect of Affinity's WRMP, reducing the overreliance on groundwater, placing their ambitious targets under close scrutiny and ensuring that the construction of Abingdon Reservoir goes ahead. Only then could the Chiltern chalk streams have any confidence that "ours can become the first generation to leave the environment in a better state than we found it". |
| | **Our Response** | **Addressed in the responses above.** |
| | Summary of any change to our revised dWRMP | Addressed above. |

| 24. South East Rivers Trust | | |
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| 24.1 | Representation | 1. A Call for Regional Planning<br><br>The south east of England is already classified as seriously water stressed by the Environment Agency, and forecasted population growth, increased urban development and climate change will exacerbate this already extreme situation. Consequently, there is a very urgent need for water resources planning to be undertaken at a regional level, with all water companies working together.<br><br>Whilst neighbouring water companies do come together through Water Resources South East (WRSE), the current system still results in each company producing individual plans which are vastly differing in their ambition and targets. This suggests that even though the water companies are interdependent on each other and the region's water resources, their plans are essentially developed in isolation. There needs to be a much deeper level of planning and working together between water companies.<br><br>To ensure the regional perspective is considered, we would welcome the introduction of a statutory requirement for regional WRMPs alongside the establishment of regional planning bodies that include customer and stakeholder representation. Even if a statutory requirement is not forthcoming, Affinity Water has the opportunity to lead the way in this, bringing together water companies to plan more jointly.<br><br>Without more extensive regional planning and co-operation, there is little chance of us achieving a more sustainable, resilient and efficient water resource system, particularly for the south east where the situation is already critical. |
| | **Our Response** | **We welcome the support for regional planning that South East Rivers Trust outline in their consultation response to Affinity Water's dWRMP, and the call for 'deeper' levels of regional planning. Affinity Water are committed to leading the way as we see our location as pivotal to long term regional and inter-regional resilience of water supplies.**<br><br>**We accept our responsibility to protect and enhance chalk catchments, and believe that our revised dWRMP shows that we have listened to our consultation responses on this matter.**<br><br>**We agree with SERT that finding ways within the WRMP guidelines and process to bring forward supply side infrastructure and planning is vitally important. Our new plan explores that by including scenarios that concept with 'what if' scenarios that are more extreme than the new preferred plan, this has enabled us to continue to keep our regional options open.**<br><br>**We agree with our customers and have taken on board the level of support from environmental groups to do this, and believe our new plan will deliver resilience for our customers and the environment.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>There will be no new groundwater from chalk aquifers in our Central region.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and further reduction to 110 l/h/d by 2040. |
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## 24. South East Rivers Trust

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| 24.2 | Representation | 2. Stopping Chalk Stream Abstraction<br><br>While the Trust welcomes Affinity Water's proposal under the Alternative Plan to take 39Ml/d less water from the environment as part of its sustainability reductions, the Trust urges Affinity Water to do more to protect the fragile environments under its care.<br><br>The water supplied by Affinity Water is heavily reliant on groundwater resources, including those which feed some of the UK's globally rare chalk stream rivers.<br><br>Chalk streams are a globally rare and protected habitat, with only 200 worldwide. They are special habitats with clear chalk-filtered waters, which support a wide variety of wildlife and recreation and provide high aesthetic value. They are an important part of society and the lives of Affinity Water's customers and Affinity Water has a duty of care to protect and enhance these unique habitats for future generations.<br><br>Affinity Water also has a duty of care to ensure its customers are not forced into contributing to the devastating environmental impacts that have been observed on chalk streams due to abstraction (and sewage effluent discharge) in recent years. Particularly when customers are not informed or aware that they are contributing to this impact and, from our research, are very likely to strongly disagree with it.<br><br>Currently, Affinity Water abstracts from chalk aquifers, which feed the rivers Little Stour and Dour under SERT's care. Over the last few years, it has become increasingly evident that both rivers have been heavily degraded due to abstraction pressures<br><br>While the permits for these abstractions are legal, they were granted in a different era, when ecological state was poorer, rivers were not valued as they are now and, specifically, chalk streams were not recognised and designated as globally rare habitats. The Trust considers these permits and licences to be outdated and urges Affinity Water to set an example to other water companies by reviewing them to a more sustainable level and, preferably, looking for other, more sustainable and less vulnerable sources for their water supply. |
| | **Our Response** | **We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced groundwater abstraction 42 Ml/d at the company scale. In our revised dWRMP, a further reduction of 36.31 Ml/d is planned by 2024.**<br><br>**Our extensive monitoring programme will enable us to identify these benefits in river flows and the ecology as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives. Please see our business plan for commitments made to environmental projects, which is on our website.**<br><br>**The Little Stour, under the AMP6 (2015-20) National Environment Programme, is undergoing feasibility studies for the removal of four weirs to improve connectivity, as well as a number of in channel enhancement works to improve ecological resilience to low flow conditions. We are working in partnership with the Environment Agency, Southern Water and South East Water to deliver this work.**<br><br>**The Dour Alleviation of Low Flows Memorandum of Understanding was implemented October 2004 and includes a condition on our abstraction licences to support low flows in the Dour by up to 2 Ml/d and also reduce abstraction license volumes by 7.5 Ml/d from our sources in the Dour catchment to maintain base flows.**<br><br>**We carry out macroinvertebrate monitoring in the Dour to assess the health of the river and plan to undertake river restoration and habitat enhancement in AMP7 (2020-25) as part of our wider programme of works, to contribute towards improving ecological resilience to drought.**<br><br>**Chalk groundwater levels in our South East region over the last two winters were below the long term average, due a prolonged dry period, and this has impacted river flows in recent times. They recovered during the previous winter and rose above the long term average curve in the Spring to their current position, just** |

| 24. South East Rivers Trust | | |
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| | | **above average levels for this time of year.**<br><br>**We are 93% metered in the Dour Community and plan in AMP7 to work with partner organisations such as Up on the Downs to deliver education and messaging around water use, linking this to the Dour to encourage further water efficiency.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
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| 24.3 | Representation | 3. Sustainable and Resilient Water Supply<br><br>Affinity Water should look to invest in more sustainable and more resilient options for water supply in the future, and look to bring these online as soon as possible. With 65 % of water abstracted from groundwater sources, Affinity Water is heavily reliant on weather patterns, leaving its water supply vulnerable to extended periods of low rainfall when the underground reserves are not replenished.<br><br>We want to see Affinity Water invest in building more sustainable water resources, such as building or expanding reservoirs alone, or in partnership with other water companies. This will help reduce the need to take additional water from the environment in times of drought and allow Affinity Water to move away from abstracting water from such sensitive habitats as outlined above.<br><br>Both the Preferred Plan and Alternative Plan place a high emphasis on targets to reduce demand and reduce leakage in the immediate future instead of the upfront investment in more sustainable sources. While both these targets are welcomed and are important, there is a strong reliance on them to enable Affinity Water to meet the forecasted deficit, and little ambition to go above this quicker than required, in order to reduce pressure on the sensitive and vulnerable groundwater systems currently supplying the water in the immediate future.<br><br>Both the Preferred Plan (PP) and Alternative Plan (AP) propose the development of a new resource in the Upper Thames in partnership with Thames Water and a transfer from the existing BREN reservoir; both more sustainable than increased groundwater abstraction. Under the Preferred Plan, the utilisation of the BREN reservoir is not scheduled until 2052. Similarly, the Upper Thames resource is not due to come online until 2055 (Preferred Plan), whereas under the Alternative Plan the resource would be available by 2039, still over twenty years away. SERT strongly believes the sooner the more sustainable water resources can be brought online; the better it will be for the resilience of both the local environment and Affinity's supply. |
| | **Our Response** | **We are committed to increase our resilience in droughts and to this end we are changing our levels of service to a 1 in 200-year drought event with no drought permit sources used by 2024. To achieve this, we have committed to a twin track approach of reduction in demand and new sources in the Lower Greensand aquifer. Alongside which we have published our Trading and Procurement Code and Bid Assessment Framework, which are intended to provide assurance that we are committed to exploring the opportunities that might arise from water trading with third parties, as over the near to medium term we recognise the importance of utilising what existing resources there are in the South East in the most optimal way.**<br><br>**Our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. It would increase our resilience by allowing better conjunctive use of the surface and groundwater sources.**<br><br>**We are further assessing the need for and suitability of this option, alongside assessment of the suitability of other strategic options, and appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Improved drought resilience as per the Alternative Plan plus increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024. |
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| 24. South East Rivers Trust | | |
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| 24.4 | Representation | 4. Reduction in Leakage<br><br>The Preferred Plan aims to reduce leakage by 11%, a reduction of 18Ml/d, whereas the Alternative Plan aims to reduce leakage by 15 %, 25Ml/d. The Trust strongly urges Affinity Water to select the more ambitious target for reducing leakage outlined in the Alternative Plan, and push this even further. Any loss of water from the network is a serious waste of a preciously scarce resource in the water stressed south east.<br><br>The Trust is concerned with the use of the Sustainable Economic Level of Leakage (SELL) to determine whether further investment to reduce leakage is cost beneficial to Affinity Water. As Affinity Water operates within a seriously water stressed environment, the logic behind SELL is no longer acceptable and instead Affinity Water should understand the environmental benefit increased investment would have in reducing leakage. |
| | **Our Response** | **Our revised dWRMP will include a leakage reduction of 15% in AMP7 (2020-25) which was supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**We are delivering an ambitious leakage programme during AMP6 (2015-20), reducing leakage by 14% which is the greatest AMP6 reduction in the water industry. To date, we have met our Outcome Delivery Incentives targets in the first three years of AMP6. It is worth noting that we are already operating beyond our sustainable economic level of leakage. Therefore, the 15% leakage commitment is 'on top' off our 14% leakage reductions to date, cumulatively over the two AMPs this will help us to maintain our industry leading levels of reduction in leakage.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
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| 24.5 | Representation | 5. Water Saving Measures<br><br>Reducing demand and leakage go hand-in-hand; however, change in customer behaviour requires paradigm shift, which can be very challenging. This change would be easier if Affinity Water provided an example to follow by demonstrating the lengths the company has gone to in themselves, to addressing the problem.<br><br>Customers are likely to be unwilling to make personal sacrifice and change their behaviour if significant amounts of water continue to be lost through what is perceived as poorly maintained leaky, infrastructure. By aiming for zero/minimal leakage, Affinity Water sets the bar, sending a clear message that water is a very valuable commodity. Old leaky infrastructure is only going to continue to degrade, leading to further future losses. Addressing this issue now will save further future investment to address what could become a potentially ongoing worsening problem simply because it was not sufficiently prioritised. Currently, this issue is regarded in a purely economic context; but Affinity Water should recognise that they have a moral responsibility that cannot and should not be measured on a balance sheet.<br><br>Embedding a sense of stewardship for the rivers in the south east is a key step in creating a step change in attitude to water from it being “a bottomless resource”, to something everyone should value. A recent project on the River Wandle revealed that very few people were aware that their water supply comes from the groundwater which feeds their local, beloved chalk stream. With this in mind, Affinity Water should look to develop and fund projects in partnership with other environmental NGOs within their supply area.<br><br>Affinity Water should strive to include more innovative ways to reduce water consumption by its customers. Additional metering and in particular Smart Metering are welcome but will only take the company so far. More innovative and ambitious measures are also needed, such as those being trialled by other water companies which involve incentivising whole communities to reduce water consumption and are enabling them to meet much more ambitious demand reduction targets. |

## 24. South East Rivers Trust

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| | **Our Response** | **In our revised dWRMP we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We have set a target in our Business Plan for AMP7 (2020-25) to reduce per capita consumption (PCC) to 129 l/h/d by 2025 and a further reduction to 110 l/h/d by 2040.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**These activities are reflected in our baseline demand forecast for the dWRMP and thus we are forecasting an initial reduction in total demand during the remainder of AMP6 and into AMP7 (2020-25). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area.**<br><br>**Our demand forecast is supported by actual data gathered from our Water Saving Programme which shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is consistent with other metering programmes in the water industry.**<br><br>**We strive to include more innovative ways to support customers to reduce their water consumption such as our partnership approach with the environmental charity Hubbub and will continue to identify new approaches going forward.** |
| | Summary of any change to our revised dWRMP | We are committed to reducing per capita consumption and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 24.6 | Representation | 6. Working in Partnership<br><br>A key tool at the disposal of Affinity Water, but not yet fully embraced and used to its full potential, is the network of local Catchment Partnerships.<br><br>The Catchment Based Approach (CaBA) embeds collaborative working at a river catchment scale to deliver cross-cutting improvements to our water environments, often leading to additional outcomes beyond each partner's investment. A recent review found for every £1 directly invested by the government, CaBA partnership raised £8.63 from non-governmental funders, including grant giving bodies, EU funds, volunteer value, as well as water company investment; showing a financial benefit from partnership-delivered projects as well as many other non-monetary benefits.<br><br>SERT hosts two catchment partnerships falling within the Affinity Water supply area. While Affinity Water representatives are members of some of these local partnerships, attendees are not always consistent, have decision making authority or in-depth knowledge of the companies operations.<br><br>We strongly believe that Affinity Water needs to better integrate within the network of local Catchment Partnerships, understanding how working and delivering in partnership can help achieve their business aims across the company, while also achieving much more for the environment and local community. |

| 24. South East Rivers Trust | | |
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| | **Our Response** | **Our Business Plan provides more information on our proposals to pilot studies for catchment based initiatives, we will update our revised dWRMP accordingly and we look forward to working with our partners in our pilot areas going forward. We see this as an important part of our investment in our Business Plan and are proposing pilot studies in eight catchments to assess the water environment life cycles of those communities along with assessing demand management measures through water recycling studies.**<br><br>**Further to which, we also like to invite the South East Rivers Trust (SERT) to engage with Water Resources South East (WRSE) at stakeholder level and would like to meet with SERT to discuss this opportunity as soon as is acceptable to SERT. The interest which has been shown by SERT in this representation could lead to future proposals at a regional level via stakeholder engagement with WRSE and we would be happy to propose this to WRSE.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 24.7 | Representation | Do we have plans to improve the natural environment, working in partnership to achieve this? |
| | **Our Response** | **We are very keen to work in partnership. We have done a lot to improve rivers flows, damage to river banks by livestock, catchment management and reduction in pesticides. Our Business Plan details several environmental pilot projects we will be progressing in AMP7 (2020-25).** |
| | Summary of any change to our revised dWRMP | N/A |
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| 24.8 | Representation | In terms of risk options does the plan look at the impact of regulation change on leaving EU i.e. use of pesticides? |
| | **Our Response** | **The plan is working to current regulation. Our AMP7 Business Plan will address drinking water quality issues in more detail.** |
| | Summary of any change to our revised dWRMP | N/A |

| 25. Stakeholder - Dr. Therese Coffey MP – Parliamentary Under Secretary of State for the Environment | | |
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| 25.1 | Representation | Water resources management plans<br><br>Customers and government expect increasing resilience to drought and extreme weather. Last July the secretary of state wrote to you outlining what the government expects to see in your plans to create a more resilient water supply for the whole country, in the scale and number of trades between companies, and where necessary proposals for the infrastructure. We reinforced these expectations in the strategic policy statement to Ofwat. This is in line with the expectations set out in the guiding principles for water resources planning.<br><br>I had questions about some parts of your plan, which you should test thoroughly through the consultations process. In particular, your plan currently suggests only a 10% reduction in leakage by 2024/35, thus not meeting the 15% reduction challenge by Ofwat that we confirmed support of in our 25-year environment plan. I also note that per capita consumption is projected to still be high at 132.3 l/h/d by 2044/45. Additionally, your levels of resilience should be improved further in light of the increasing likely hood of dry weather. Your strategy on leakage, resilience and per capita consumption should be explored further with your consumptions and your board to consider whether you can meet more ambitious targets.<br><br>Alongside this I would like to understand how your plan will help deliver the government's 25 year plan for the environment, in particular how it will deliver net environmental gain in your company area. Consideration should be given to increasing tree cover in your area to assist in water management. |
| | **Our Response** | **Our revised dWRMP will include a leakage reduction of 15% in AMP7 which was supported during the consultation, and aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**We are committed to reducing per capita consumption (PCC) and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**We will be further consulting with customers on our revised dWRMP in Spring 2019.**<br><br>**We have an established Biodiversity Programme for our landholdings across all three of our regions. This includes surveying, monitoring, management and conservation of habitats and species. We have undertaken extensive work where possible to conserve mature trees on our sites, for example through pollarding and coppicing, as part of a holistic approach to the management of sites. Where appropriate we consider planting with native species and supporting volunteering activities within our community, working in partnership with the local wildlife trusts and other organisations. We have implemented tree planting where opportunities/circumstances allow, particularly in our East and Southeast regions. We are planning on planting more trees and hedgerows across all three of our regions, the timescales for this are to be confirmed. This is in line with supporting Government's 25 year plan for the environment.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and further reduction to 110 l/h/d by 2040. |
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| 25.2 | Representation | Drought preparedness<br><br>You should be planning for the worst while hoping for the best place to seal with possible challenges, not only this year but in 2019, you need to demonstrate that you have effective plans in place, that you are checking that your plans are delivering, and that you are thinking about what actions to take now for the longer term.<br><br>You should demonstrate how you have stepped on your preparations for drought. For |

| 25. Stakeholder - Dr. Therese Coffey MP – Parliamentary Under Secretary of State for the Environment | | |
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| | | example, by highlighting the infrastructure that you have invested in to improve supply, how you are tackling, and how you are helping households and businesses to be 'water wise'. Water companies should be making it easier for people and business to make water smart choices by providing advice, technology and tools. |
| | **Our Response** | **Resilience is also a key component in our planning and, we plan to increase our resilience both in terms of supply and network/transfers to become resilient to a 1 in 200 drought event with no drought permit use by 2024.** |
| | Summary of any change to our revised dWRMP | Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024 |

| 26. The Water Report | | |
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| 26.1 | Representation | Is there a preferred plan and alternative plan to give context? |
| | **Our Response** | **A preferred plan and alternative plan were presented to customers and stakeholders to enable them to have a choice of options. There is a balance of cost, environmental impact and risk.** |
| | Summary of any change to our revised dWRMP | The revised dWRMP plan will present a single plan. |
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| 26.2 | Representation | Is there a dramatic difference in the cost of the different options? |
| | **Our Response** | **These are detailed in the dWRMP and the consultation document. Revised costs will be presented in our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Costings will be presented in the revised dWRMP. |

## 27. Ver Valley Society

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| 27.1 | Representation | Dear Secretary of State<br><br>Affinity Water draft water resources management plan<br><br>The Ver Valley Society has carefully considered Affinity Water's draft Water Resources Management Plan (WRMP)and have come to the conclusion that as far as our the globally rare chalk streams in the Chilterns including the River Ver are concerned, neither their Preferred Plan nor their Alternative Plan contains much good news.<br><br>If we are to have any chance of seeing the 'Clean and Plentiful Water' and 'Thriving Plants and Wildlife' envisioned in A Green Future we ask you to take these three steps:<br><br>1. End the over-reliance on groundwater<br><br>The rivers of the Chilterns are fed by the chalk aquifer and it is deeply troubling that in 2017, a year when no drought was declared, large sections of them were completely dry. Despite a relatively wet 2017/18 winter this situation widely persists. We have seen for ourselves on the River Ver, miles of dry river bed and greatly diminished flows, resulting in loss of habitat for invertebrates, fish, birds and mammals, and a build-up of smothering silt. It is frightening to contemplate just how bad it will be if even a 1 in 10 drought event occurs.<br><br>Affinity's plans suggest that in the next 5 years, and for the foreseeable future, abstraction of groundwater remains the cornerstone of their water supply. There is no extra water available for use - in fact less over the next 5 years - until 2039 at the earliest, when Thames Water's proposed Abingdon Reservoir might come on stream.<br><br>And should a drought be declared? It will be a disaster for the environment, as the solution to the problem is the issue of permits that will allow even more groundwater to be taken from the chalk. Nothing is being done to address this.<br><br>One need look no further for confirmation that something is seriously awry than the National Infrastructure Commission's Preparing for a drier future. They recognise that "The water supply system is already strained and the pressure will only rise over the coming decades." The Commission tellingly identifies that the draft WRMPs "…demonstrate limited ambition for improved long-term resilience…", the very thing consumers and the environment require.<br><br>We consider that the magnitude of the challenge in the South East requires at least a coordinated regional approach to water including investment in significant infrastructure projects.<br><br>Please bring the full powers of government and regulators to assist but also demand that Affinity reduce their reliance on groundwater in a speedy and determined fashion.<br><br>2. Keep Affinity on target and hold them to account<br><br>Affinity has bold plans to balance supply and demand which include testing targets. In the South East region, where population and housing are rising steeply, Affinity is projecting a fall in demand for water over the next 5 years.<br><br>The company believes that some tried but some barely tested techniques - consumer education, an ambitious leak reduction programme and the roll out of water meters - will deliver the significant savings required. It is difficult to have confidence in these assertions especially when Affinity's most recent projections for consumer demand in 2016/17 were wide of the mark - consumer consumption rising 5 litres per head per day when forecast to fall.<br><br>Should Affinity's optimistic forecast prove accurate, our chalk streams are still in for a tough time. Should they prove wrong, then groundwater will be called upon to make up the difference and our rivers and environment will pay dearly.<br><br>We call upon government and regulators to scrutinise Affinity's projections in detail and rigorously police whatever forecasts are agreed. Swift action should be taken and suitable penalties applied should leak reduction targets be missed or consumer savings fail to materialise. |

## 27. Ver Valley Society

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| | | 3. Ensure Abingdon Reservoir is built<br><br>Looking further ahead, we whole-heartedly support Affinity's link to the Upper Thames Regional Development project and the additional water that it will bring to the area. Having the ability to capture water when it's in abundance and use it to reduce pressure on groundwater is essential to the health of our chalk streams.<br><br>However the enthusiasm for, and the success of, this pivotal project rests mostly outside of Affinity's control. We are concerned that so much of Affinity's future planning hinges on this single project being commissioned and delivered on time.<br><br>We are in no doubt that the Abingdon Reservoir is essential but the current timings are already too late to be of any benefit to what is even now an environmental disaster.<br><br>We ask that you bring all pressure to bear to guarantee that the Abingdon Reservoir is built with work starting without delay to reduce our dependence on groundwater.<br><br>In summary<br><br>We believe it is time to take bold steps and in respect of Affinity's WRMP, reducing the over-reliance on groundwater, placing their ambitious targets under close scrutiny and ensuring that the construction of Abingdon Reservoir goes ahead. Only then can the River Ver and the Chiltern chalk streams have any confidence that "ours can become the first generation to leave the environment in a better state than we found it". |
| | **Our Response** | ***1. End the over-reliance on groundwater***<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we were not requested to implement any sustainability reductions for the River Chess as all water abstracted from the upper catchment (i.e. CHES and CHA sources) returns to the river via the Chesham Sewage Treatment Works (STW) outflow, thus mitigating the impact of abstraction. The section of the river upstream of the STW outfall has been the focus of the AMP6 National Environment Programme (NEP) investigation which is in the Options Appraisal stage. We have allowed for total cessation of CHA and CHES sources as a worst-case scenario should it be required pending the outcome of the Options Appraisal. This volume, which may need to be reduced, is included in the company wide reduction of 36.31 Ml/d planned for AMP7 (2020-25) implementation in the revised dWRMP.**<br><br>**Our extensive monitoring programme will enable us to identify any benefits in river flows and the ecology should the reductions be required, as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.**<br><br>**We have committed to increasing our resilience in droughts and, therefore, we are changing our levels of service to a 1 in 200 year drought event with no drought permit sources used after 2024 (as per the Alternative Plan), as well as planning for increased drought resilience, beyond the 1 in 200 year drought event, at a future point after 2024.**<br><br>**In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>***2. Keep Affinity on target and hold them to account***<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**These activities are reflected in our baseline demand forecast for WRMP 2019 and** |

| 27. Ver Valley Society | | |
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| | | **thus we are forecasting an initial reduction in total demand during the remainder of AMP6 and into AMP7 (2020-25). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area. Our revised dWRMP will include a leakage reduction of 15% in AMP7 as per Ofwat's challenge and include aim to achieve a 50% leakage reduction by 2050 as per National Infrastructure Commission report.**<br><br>**Our demand forecast is supported by actual data gathered from our Water Saving Programme which shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is consistent with other metering programmes in the water industry.**<br><br>***3. Ensure Abingdon Reservoir is built***<br><br>**We are committed to working with neighbouring water companies and regulators to identify strategies that can benefit more than one company and adopt a coordinated regional perspective to water resources planning. To this end, we have been supporting and have actively taken part in two regional groups - Water Resources South East and Water Resources East and the Water UK Water Resources Long Term Planning Framework projects.**<br><br>**Within the regional context, our draft WRMP included plans to invest in new resource development on the Upper Thames as part of a regional scheme that might benefit multiple water companies in the South East. Based on work done to date, the preferred strategy is to secure additional reliable water by transferring water from a new regional reservoir in the Upper Thames catchment (referred to as the South East Strategic Reservoir) in partnership with Thames Water. This could support new abstractions in the Lower River Thames reaches. It should also increase our resilience and allow full conjunctive use of the surface and groundwater system. The recent dry weather experience in the summer of 2018 highlighted that the conjunctive use is the most appropriate for water resources management in order to meet the rising demand under variable weather patterns.**<br><br>**However, we are carefully considering the suitability of this option along with the appropriate delivery date for our revised dWRMP.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and further reduction to 110 l/h/d by 2040.<br><br>Conditioning treatment of our supply from Anglian Water, enabling us to move water freely around our Central region.<br><br>Increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024<br><br>Investment to unlock the potential for our supply area to act as a transfer hub for South East England providing the foundation for future water trading and long-term regional supply and environmental resilience. We have named this "Supply 2040". |
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| 28. Water Plus | | |
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| 28.1 | Representation | Have you consulted with retailers? |
| | **Our Response** | **We invited retailers to participate in our draft Drought Management Plan, Water Resources Management Plan and Business Plan consultations.**<br><br>**We participated in a Joint Water Company dWRMP event (April 2018). The issues raised by water retailers attending are detailed in this report. View from retailers that joint water company events are good mechanism to engage with them as they can engage with several water companies at the same time.** |
| | Summary of any change to our revised dWRMP | We will consider how we engage more effectively with water retailers in the revised dWRMP further consultation, Spring 2019. |
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| 28.2 | Representation | It is important to involve retailers and businesses in water efficiency programme. |
| | **Our Response** | **We agree that retailers have an essential role to play in influencing non-household consumers are very keen to work more closely with retailers and non-household consumers on water efficiency**<br><br>**We already work closely with retailers across a range of areas and are keen to understand more about how retailers are meeting their duty to promote the efficient use of water by their customers.**<br><br>**As part of our AMP7 Business Plan, we have developed a Bid Assessment Framework which describes the bid assessment process we will use when we identify requirements for new water resources, leakage or demand management services. Details of this framework can be found in Appendix 5 of our AMP7 Business Plan.**<br><br>**We are keen to foster future opportunities in water trading, demand management and leakage services and our bid assessment framework will provide third parties with confidence that options they propose will be assessed on a level playing field with in-house options.**<br><br>**We believe there is scope for us to incentivise retailers to offer creative demand management services to their non-household customers; a model that could ultimately lead to a cascade of water from water-rich areas to water-stressed areas and drive innovation in the market.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 28.3 | Representation | As a company do you feel comfortable engaging with businesses? |
| | **Our Response** | **We believe it is essential for engagement with businesses about their water usage to achieve necessary reductions.**<br><br>**There is currently no market process by which a wholesaler can support retailers with promoting water efficiency and we would be supportive as a wholesaler of a protocol being developed by market participants to ensure that potential water efficiency benefits of the retail market for business consumers, retailers and wholesalers are realised.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 28. Water Plus | | |
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| 28.4 | Representation | Why is reducing PCC to 110 challenging? |
| | Our Response | The starting point is high, average of 152 litres per head per day in our area. Water is relatively cheap particularly in affluent areas. Reducing per capita consumption **(PCC)** requires a combination of approaches to tackle it effectively i.e. metering, leakage, behavioural change. In terms of the reducing PCC to 110, we stated in our dWRMP that we would require support from government and other partners on this, it would be very ambitious and though our ambition is to reduce it down to these levels we would find it difficult without a wider more comprehensive campaign and policy push at a national level which would also help with water literacy amongst the public. |
| | Summary of any change to our revised dWRMP | A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and further reduction to 110 l/h/d by 2040. |

| 29. Waterwise | | |
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| 29.1 | Representation | The key elements of our response include:<br><br>• Waterwise supports the leading work Affinity work has been undertaking on behaviour change and metering in PR14.<br><br>• Affinity Water has a PCC of 160l/h/d, which is one of the highest in the sector. The draft plan suggests going down to 120l/h/d in the preferred plan. We suggest that the final plan should be at a lower level of 110 l/h/d.<br><br>• We plan to work with Affinity Water through our Water Efficiency Strategy Steering Group to gain wider support for water efficiency from Government and other stakeholders.<br><br>• We'd like to see more details of the innovative approaches proposed to reduce consumption and suggest that the level of risk associated with wider government and societal changes be revisited.<br><br>• We'd like to see greater partnership working with retailers and will be working with Affinity Water and retailers through a new Leadership Group on Retail Water Efficiency to help all companies progress in this area. |
| | **Our Response** | **Our revised dWRMP will include a wider suite of demand management options to achieve more challenging levels of per capita consumption (PCC) aiming towards 110 l/h/d by 2040. We are committed to reducing PCC and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 compared with our current average consumption of 151.7 l/h/d which is ambitious.**<br><br>**We have included a greater emphasis on demand management options to try to reduce PCC in our supply area and to show ambition in doing so. Further clarity will be provided in the presentation of our water efficiency portfolio to detail the activities we are proposing in order to bring down PCC.** |
| | Summary of any change to our revised dWRMP | We are committed to reducing per capita consumption and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 29.2 | Representation | Ambition on demand management<br><br>Affinity Water has been demonstrating increasing ambition on water efficiency in PR14, including:<br><br>• 29 Ml/d of savings through their Water Saving Programme<br>• 139,709 new AMR meters installed and 64,097 Home Water Efficiency Checks completed since the beginning of AMP6<br>• Water efficiency initiatives, e.g. #TapChat and Save Water South East<br><br>A comprehensive description is provided in the draft WRMP of the actions that Affinity Water has undertaken over the current price review period, relating to demand management. However, there is less clarity on the actions intended or planned to be taken during the following privy review period - from 2020 to 2025.<br><br>It is encouraging to see the company's ambition for improving the quality of information provided to customers, including the longer term plan, from 2025 - 2035 as existing meters reach the end of their asset life, to roll out the fixed network smart metering option with the aim to have installed smart meters at all properties where possible by the end of the programme and anticipated benefits to extend to 2050. Affinity Water has now a golden opportunity to prepare for this activity through careful and targeted customer engagement, ensuring that the smart metering programme delivers maximum benefits, and that tailored messaging and insights are delivered to customers encouraging the efficient use of water. |

| 29. Waterwise | | |
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| | | We note that engagement with non-households is largely contained only with the alternative plan, and would like to see more acknowledgement of the crucial role business plays in reducing water demand within the final plan. Whilst there is a level of complexity introduced by the separation of the retail market, this should not be insurmountable and could enable wider engagement on water efficiency.<br><br>We welcome the focus on leakage reduction included within the plan, as part of a comprehensive approach to demand management measures that includes leakage, water efficiency and metering. The links between these options for highlighting and responding to customer side leakage could be more clearly outlined, as customer engagement will underpin the level of success seen from the implementation of all of these options. |
| | **Our Response** | **In our revised dWRMP, we are proposing a twin-track approach with demand-side measures alongside strategic supply options. This approach will ensure an appropriate mix of interventions is selected that increases our resilience to drought and population growth.**<br><br>**We are currently delivering an ambitious plan of demand and leakage reduction included in our last WRMP 2014. This includes our Water Saving Programme (WSP), comprising meter installation, customer supply pipe leakage reduction, water efficiency activities, and a further 27 Ml/d through our leakage programme which equates to 14%, the largest leakage reduction in AMP6 across the water industry.**<br><br>**We are proposing reducing leakage by a further 15% by 2025, in line with Ofwat and customers' expectations and we plan to further include aim to achieve a 50% reduction by 2050 as per National infrastructure Commission report.**<br><br>**These activities are reflected in our baseline demand forecast for WRMP 2019 and thus we are forecasting an initial reduction in total demand during the remainder of AMP6 and into AMP7 (2020-25). However, demand for water is forecasted to pick up again primarily as a result of sustained population growth within our supply area.**<br><br>**Our demand forecast is supported by actual data gathered from our Water Saving Programme which shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is consistent with other metering programmes in the water industry.** |
| | Summary of any change to our revised dWRMP | Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050. |
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| 29. Waterwise | | |
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| 29.3 | Representation | Ambition on Per Capita Consumption (PCC)<br><br>We consider that Affinity Water should be setting an ambitious reduced trajectory for per capita consumption over the period of the draft Water Resource Management Plan. It is acknowledged within the draft plan that Affinity Water's current per capita consumption (PCC) is one of the highest in the sector - at around 160 litres per day.<br><br>The draft WRMP preferred plan sets out a projected decrease in per capita consumption over the period to 126 l/h/d by 2045. An alternative plan is included that sets a more ambitious reduction, but only to a level of 120l/h/d within a 25 year horizon. Reflecting an 'ambition' to achieve 110 l/h/d, Affinity Water comments that it will be exploring 'whether our key stakeholders and community partners are willing to commit to working in partnership with us to work towards ambitious targets for lower water consumption.' We consider that this approach should be more ambitious, identifying ways to work with key stakeholders and community partners to achieve lower water consumption.<br><br>Affinity Water states in its draft plan that moving to a more ambitious 110 l/h/d consumption level would enable the avoidance of significant operational and investment costs. We support that assertion. However, we do not agree that this option requires wider collective societal and regulatory action to enforce the use of high efficiency appliances and is therefore a higher risk strategy. The draft plan says that Affinity Water will only be able to move forward with this option if it obtains commitment from Government, regulators and community partners through joint action. We believe the company has a leading role to play in this space, and would like to see a commitment to 110 l/h/d in the plan, as well as a set of milestones and a roadmap to achieve it. Waterwise plans to work with Affinity Water through our Water Efficiency Strategy Steering Group and our Leadership Group on Water Efficiency and Customer Participation to help deliver this higher ambition on water efficiency.<br><br>Recent research published by Ofwat has suggested that tacking household leaks and using innovative technologies could help to decrease water use in England and Wales by two thirds over the next 50 years, despite significant population growth. The Government has also made it clear in its 25 Year Environment Plan that it wants to work with the sector to develop an ambitious cross-England target in the near future.<br><br>The NIC report "Preparing for a drier future" sets out an aim for water efficiency to provide 34% of the recommended level of resilience we need through water efficiency. This includes reducing demand from 141 to 118 litres per head per day by 2050. Southern Water is setting a demand reduction target to reduce per capita consumption to 100 litres per head per day across its region by 2040. Target 100 is not just about reducing water consumption; it is about shifting society to value water.<br><br>We would like to see Affinity Water's final WRMP contain a per capita consumption target for 2045 of 110 or less, with five-year milestones including an ambitious target for the Business Plan. The common performance commitment on PCC which Ofwat is requiring from all companies in their PR19 submissions, to cover 12 years, should be the halfway point to the 2045 target.<br><br>This will reflect customer views (strongly supportive of water efficiency, as the draft WRMP states), good practice across the industry, and government and regulatory ambition. |
| | **Our Response** | **We are committed to reducing per capita consumption (PCC) and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.** |
| | Summary of any change to our revised dWRMP | We are committed to reducing per capita consumption and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 29. Waterwise | | |
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| 29.4 | Representation | Water efficiency options<br><br>We are pleased to see such a focus on continuing to develop the existing water efficiency programme - described as 'building upon the approach of leveraging community partnerships and exploring innovative solutions to help people save water.' Affinity's campaign with hubbub is industry-leading and we look forward to Affinity developing further innovative approaches to customer engagement for water efficiency. We would like to see details of the innovation solutions outlined within the final plan for transparency. We would expect that a combination of metering and tailored behavioural and technological interventions to homes should allow an ambitious PCC target to be achieved.<br><br>Affinity's comprehensive approach to engaging with customers and schools is welcome; we would like to see approaches extended to non-households including via retailers within the preferred plan for the final WRMP. We look forward to working with Affinity on this through our engagement with the water retail sector, driving ambition. |
| | **Our Response** | **Our revised dWRMP will include a consumption reduction target of 129 l/h/d by 2025 compared with our current average consumption of 151.7 l/h/d. This is stretching target for us and involves more demand management than was in our dWRMP including our innovative fast data option to better engage with customers and Water Re-use schemes with non-households via retailers.**<br><br>**These re-use schemes include the implementation of a rainwater harvesting system in the Terminal and Hangar Buildings of a large commercial airport. We will work with Retailers and with commercial customers to install free standing rainwater tanks at optimal collection points across site, and water re-use for toilet flushing only. This project anticipates 2.3 Ml/d saving by 2025.** |
| | Summary of any change to our revised dWRMP | Reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 29.5 | Representation | Metering<br><br>The move towards customer metering is useful for the wider demand management agenda and we believe that the inclusion of the water efficiency engagement alongside the metering rollout will be critical to maximising potential demand reductions.<br><br>We are interested to see the plans for providing greater customer insights from metering data in conjunction with live network hydraulic models, and would be keen to explore with Affinity Water how to maximise the value of these insights for customer engagement around water using behaviours. |
| | **Our Response** | **We will continue our universal metering programme as part of our Water Saving Programme (WSP) which we plan to complete by 2025. As part of the WSP programme we will continue to offer home water efficiency checks to all WSP customers. Alongside this, we will implement our innovative fast data option in AMP7 (2020-25) to provide customers with more detailed information about their usage through the most appropriate communication channels to help change behaviours and reduce consumption. We are expecting to deliver in total 17 Ml/d benefit from our fast data option which includes reduction in household consumption and customer side leakage.** |
| | Summary of any change to our revised dWRMP | N/A |
| 29.6 | Representation | Customer engagement<br>We are encouraged that Customer engagement and Water Efficiency are integrated throughout the plan. We welcome the commitment to use customer engagement to build the evidence base, educate and influence for long term behaviour change. The direct engagement with stakeholders as well as through the Hubbub programme provides valuable insights to support higher ambition on water efficiency in the final plan. |

| 29. Waterwise | | |
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| | **Our Response** | **We are keen to promote a concerted effort to reduce water use nationally and welcome support and working together with Waterwise to increase engagement and drive behaviour changes.** |
| | Summary of any change to our revised dWRMP | N/A |
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| 29.7 | Representation | Non-household consumption<br><br>Empowering non-households to understand and control their water use through continued increases in non-household meter penetration is encouraging. We would welcome the inclusion of a stronger water efficiency support focus within the final WRMP reflecting the critical role that many businesses will have in helping to minimise water waste in the future.<br><br>This will include liaison with retailers - a dialogue that water wise is helping to facilitate and support through its work as an independent voice on water efficiency. We welcome discussion on how this can be achieved across the Affinity Water area. |
| | **Our Response** | **We have identified an opportunity for retailers to play a significant role in demand management with the attendant benefits of lower costs for all customers and improving resilience through spreading demand reductions across all water users. We envisage that we could provide an incentive to retailers in return for their work in supporting their non-household customers in reducing demand.**<br><br>**We will publicise this opportunity to all retailers to ensure a level playing field and will seek partners to pursue opportunities within our supply area.**<br><br>**This is a financial incentive, allied to the work on regional coordination, and because of the nationwide reach of retailers this could lead to the 'cascade' of water from those areas that are water-rich to those that are water-stressed. This has the potential to drive innovation across both the wholesale and retail markets.**<br><br>**We would welcome discussion on the support offered by Waterwise regarding liaison with retailers.** |
| | Summary of any change to our revised dWRMP | We are aiming to achieve a 13 Ml/d reduction in non-household demand by 2025, which is approximately 10% of the total. |

| 30. Wood PLC | | |
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| 30.1 | Representation | Would it be possible to send me a copy of the Technical Report 3.1 Outage, that accompanies your draft Water Resources Management Plan? |
| | **Our Response** | **Copy sent.** |
| | Summary of any change to our revised dWRMP | N/A |

| 31. WWF-UK | | |
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| 31.1 | Representation | Our comments on the draft Water Resources Management Plan (WRMP) are below. As part of the Blueprint for Water coalition of environmental NGOs, WWF has identified a number of high-level outcomes we would like to see delivered in PR19 through the WRMPs and Business Plans (see: http://blueprintforwater.org.uk/2016/11/ensuring-water-companies-deliver-for-nature/). These outcomes were discussed with and shared with the water sector through 2017 and into 2018. Blueprint for Water has also undertaken a comparative piece of work looking across the sector's draft WRMPs - our response draws on this. |
| | **Our Response** | **N/A** |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 31.2 | Representation | Demand management<br><br>In the face of increasing pressures on water resources, we must make the best use of the water we take from the environment, ensuring it is not lost or wasted. WWF expect to see WRMPs that not only prioritise demand management options over major new supply schemes, but also provide a step-change in both scale and ambition. This is particularly relevant for Affinity Water's area where the issue of dry rivers is coupled with high water consumption.<br><br>We are disappointed that Affinity Water have not set a more stretching PCC target when looking out to 2045. Across the board, we want to see more ambitious targets on PCC of 100 litres by 2025, and 75 litres by 2050. Only with serious targets can the water industry drive forward with serious ambition, searching out innovative solutions and breaking from 'business as usual' planning.<br><br>We would like to see Affinity Water accept their role in reducing PCC in the long term. Whilst we acknowledge that serious change will require efforts from other parties, and collaborative work in partnership with others, there is a great deal that the water company can achieve themselves with the right ambition and will.<br><br>We support Affinity Water's plan to achieve 90% meter penetration by 2025. This is ambitious target is essential because some of the communities supplied by Affinity Water have the highest unmeasured PCC levels in the country - in a highly water stressed area. As long as appropriate tariffs and schemes are in place to ensure those in vulnerable circumstances are protected from disproportionate bills, water metering is the fairest way to pay for water. Water meters are an important part of the demand management mix, not only assisting with leak detection and providing a corner stone to water efficiency work, but with smarter technology also offering the potential for long-term, targeted engagement with customers.<br><br>We support Affinity Water's intention to install smart meters - to maximise the longer-term savings achievable through scaling-up metering, it is essential that the meters being installed are as smart as possible – with the ability to relay information not only to the water company, but also the customer. It makes no sense to install 'dumb' meters.<br><br>We want to see Affinity Water take up Ofwat's challenge of reducing leakage by 15% during AMP7 (not the 11% proposed). We would expect to see a continuation or improvement on this level of reduction moving into the future. It is not acceptable to be considering new water supplies whilst wilfully wasting those already used.<br><br>We would like to see stretching delivery targets for Home Water Efficiency Checks – water efficiency home visit retrofits. The numbers of home visit retrofits being carried out would have been unimaginable just a few years ago. However, the scale of delivery remains relatively modest compared to the size of the patch and the scale of issues Affinity Water faces.<br><br>We want to see Affinity Water commit to working with developers to ensure new developments are water efficient and to advocate (with other stakeholders) for stronger building regulations in water stressed areas. |

| 31. WWF-UK | | |
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| | **Our Response** | **With the high starting point within the Affinity Water area it would not be possible to reduce per capita consumption (PCC) to 100 l/h/d by 2025. Planning on this basis would result in an unacceptable level of risk being adopted within our plan and put public supply of water at risk. We are considering if we can go further with our demand management options within our revised dWRMP and will be implementing our innovative fast data option.**<br><br>**We have set a target in our Business Plan for AMP7 (2020-25) to PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**The accuracy of our assumptions about the effectiveness of demand-reduction measures, is supported by data gathered from our Water Saving Programme. This shows that consumption of newly metered households is reduced when switched to measured charges on average by 18% compared with unmetered ones. This is broadly consistent with other metering programmes in the water industry. On top of this we intend to introduce other schemes in order to help further reduce customer demand for water.** |
| | Summary of any change to our revised dWRMP | Reduce PCC to 129 l/h/d by 2025 and aiming towards a further reduction to 110 l/h/d by 2040. |
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| 31.3 | Representation | Supply development<br><br>Whilst we want companies to prioritise investment in demand measures which leave more water in the environment, we recognise that long-term development of sources is likely to be needed to remove or offset the environmental impacts of certain abstractions, prevent future deterioration of water bodies, and maintain security of supply within the context of future climate uncertainty.<br><br>We understand that new supply options have been assessed for their environmental impacts through a Strategic Environmental Assessment (SEA), and that where this screening identified options with unacceptable environmental effects these were rejected from the options list.<br><br>Should there be any notable changes between the draft and final plan with respect to the preferred supply side options, in particular around proposed inter-company transfers and reservoirs, we urge that further stakeholder and customer engagement is undertaken.<br><br>We want Affinity Water to commit in its final plan that all the supply side water resource schemes progressed in AMP7 will deliver a net gain in biodiversity and for the wider environment. |
| | **Our Response** | **We have considered this alongside other consultation responses and have decided there will be no new groundwater from chalk aquifers in our Central region from our available options list based on feedback on current licensing policy from the Environment Agency. This has made our plan more reliant on demand management schemes and transfer schemes with neighbouring companies.**<br><br>**We will further consult on the revised dWRMP in Spring 2019.** |
| | Summary of any change to our revised dWRMP | There will be no new groundwater from chalk aquifers in our Central region.<br><br>We are removing supply side schemes from AMP7 (2020-25).<br><br>We will further consult on the revised dWRMP in Spring 2019. |
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| 31. WWF-UK | | |
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| 31.4 | Representation | Addressing unsustainable abstraction<br><br>Addressing existing unsustainable abstraction and its impact on the environment is essential.<br><br>We welcome that one of the key themes in the draft WRMP is leaving more water in the environment, though sustainability reductions to licences set through RBMP and WFD targets. Given the region is highly water stressed, and contains a large number of sensitive freshwater ecological habitats, we would like Affinity Water to set an ambitious target for reducing the amount of water abstracted from the environment and urge it to pursue its Alternative Plan target (39.81 Ml/d) for returning water to the environment.<br><br>We note that morphological mitigation programmes - e.g. restoration and habitat enhancement - are also planned to help improve the natural resilience of chalk streams and achieve WFD objectives. Monitoring and reporting the resulting ecological response of these streams will be crucial in order to understand how viable this kind of approach is.<br><br>We note that a few sites have been identified where there's potential to increase abstraction within the licence. We want to ensure Affinity Water is committed to monitoring and reporting on ecological impacts at these sites.<br><br>We are pleased that Affinity Water is using the Abstraction Incentive Mechanism (AIM) extensively to help prevent future deterioration. |
| | **Our Response** | **We have included investment in our Business Plan to enable us to deliver the full Water Industry National Environment programme 3 (WINEP3) reductions and we shall not be implementing any of the bringing back up to licence supply schemes.**<br><br>**We are working closely with the Environment Agency to identify sources where groundwater abstraction is found to be impacting on river flows and the environment and are reducing abstraction where required. In AMP6 (2015-20) we have reduced groundwater abstraction 42 Ml/d at the company scale. In our revised dWRMP, a further reduction of 36.31 Ml/d is planned by 2024.**<br><br>**Our extensive monitoring programme will enable us to identify these benefits in river flows and the ecology as we enhance our knowledge of the river catchments and the way the chalk aquifer behaves in an array of droughts. We are also committed to an ambitious programme of morphological works to enhance our rivers and enable them to reach good ecological status and meet the Water Framework Directive objectives.**<br><br>**We welcome your comment regarding our use of the Abstraction Incentive Mechanism.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region. |
| | | |
| 31.5 | Representation | Catchment Management<br><br>We want to see water companies as active players in advocating and encouraging good land management.<br><br>We are pleased that Affinity Water is continuing their catchment management work.<br><br>We would like Affinity Water to scale up this work and ensure they are taking a holistic approach to catchment management, not focussing on one chemical or issue. |
| | **Our Response** | **Our catchments provide the resources that sustain life as well as the goods and services that support and drive the nation's services and economy. We recognise that water is a valuable and shared resource on which we depend and impact both direct and indirectly that is critical to the success of many sectors, the health of the environment and quality of life. We have been working with our customers and communities to deliver innovative catchment interventions in response to the challenges faced and the importance of managing and protecting our water catchments in a sustainable way is at the heart of the development of our future plans.** |

| 31. WWF-UK | | |
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| | | **Alongside this, we have developed a proactive approach to investigating and identifying solutions to pollution affecting the quality of drinking water. This is particularly important as we continue to reduce our abstractions to protect and preserve the environment, it is vital we preserve and protect the quality of what we can sustainably supply to our customers to ensure a greater resilience, both in terms of high quality drinking water our customers can trust and to the environment.**<br><br>**We face challenges from a number of pollution risks including industrial pollutants; pesticides and nitrate from agriculture, amenity and domestic sources. We also face potential pollution threats from future land use changes in our catchments including new developments, mineral extraction and historic contaminants. Since PR14, we have developed an innovative programme to investigate the source of these pollutants, understand the reason why they are contaminating water and develop catchment-based interventions to improve water quality. We will continue to develop this programme and funding for this work has been included within our PR19 Business Plan where further detail can be found** https://stakeholder.affinitywater.co.uk/business-plan.aspx |
| | Summary of any change to our revised dWRMP | N/A |
| | | |
| 31.6 | Representation | Natural Capital<br><br>We would like to see water companies give material consideration to the value of natural capital and benefits of water left in the environment within water resource options appraisals.<br><br>We welcome that, as part of the options appraisal, the ecosystem services potential of different options has been scored. We look forward to understanding more fully how this has informed decision-making. |
| | **Our Response** | **We understand the benefits of water left in the environment and have had extensive discussions with the Environment Agency to ensure appropriate levels of sustainability reductions are undertaken to support improvements in the catchments our supply area covers.**<br><br>**The use of environmental metrics within the decision making has been reviewed and revised since draft plan. We have upgraded our Economics of Balancing Supply and Demand (EBSD) model to include the ability to optimise on items other than least cost.** |
| | Summary of any change to our revised dWRMP | Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>Environmental scores will become a part of our decision making and a much more detailed description of this process will be included within our revised dWRMP narrative. |
| | | |
| 31.7 | Representation | Regional water resources planning<br><br>We support multi-sector, regional water resources planning: it provides more integrated solutions with the potential for wider and multi-sector benefits. We welcome Affinity Water's efforts to engage in regional water resources planning through Water Resources South East (WRSE) and Water Resources East (WRE).<br><br>We'd like to see Affinity Water commit to participating in and promoting national and regional-scale water resources planning which works with other major water-using sectors to assess future challenges and develop solutions. This planning should be guided by recommendations from the Environment Agency's WRMP24 initiative. |

| 31. WWF-UK | | |
|---|---|---|
| | **Our Response** | **During AMP6 (2015-20) we have taken part in both regional and national water resource projects and intend to continue this throughout AMP7 (2020-25). We are a part of the steering group for the Environment Agency WRMP24 project and will be following the recommendations closely.** |
| | Summary of any change to our revised dWRMP | We will continue our work with Water Resources in the South East (WRSE) and Water Resources East (WRE) and will share our activity based costing model with other companies in the WRSE to promote transparency of cost of water transfers, which we believe is essential for water transfer arrangements. |
| | | |
| 31.8 | Representation | How are you planning to meet supply options? |
| | **Our Response** | **This is set out in the in the plan and the consultation document. There will be no new groundwater from chalk aquifers in our Central region.** |
| | Summary of any change to our revised dWRMP | There will be no new groundwater from chalk aquifers in our Central region. |
| 31.9 | Representation | How will you act on the consultation? |
| | **Our Response** | **We have set out in this Statement of Response how we will act on the representations received through the consultation on our draft WRMP.**<br><br>**We will be undertaking further consultation on our revised dWRMP in Spring 2019.** |
| | Summary of any change to our revised dWRMP | We will be further consulting with customers and stakeholders on the revised dWRMP in Spring 2019. |

## 32. Wycombe District Council

| | | |
|---|---|---|
| 32.1 | Representation | Dear Sir, Madam,<br><br>Wycombe District Council (referred in the rest of this response as "the Council) is pleased to have had the opportunity to review Affinity Water's Water Resources Management Plan, which it understands to be a very long term plan looking at water supply up to 2080.<br><br>The Council understands that this timescale means that there will be uncertainties in terms of supply and demand projections, and in terms of solutions being brought forward at the various stages. As such, reviewing the WRMP on a regular basis appears essential.<br>The Council wishes to keep having a dialogue with Affinity Water in terms of understanding their population forecasts to ensure that this is aligned with the growth planned for in emerging local plans, and that the growth has fully been taken into account.<br><br>In terms of the menu of solutions being brought forward, the Council would like to raise the following points:<br><br>• In relation to resilience to drought, the Council understands your preferred option as being more realistic and have no particular comment on this. The Council would in parallel raise the need to become more resilient to more heavy rainfalls as a result of climate change and to ensure that rainwater can be better captured and used as supply. The Council also considers that more initiatives could be put in place to make better use of greywater.<br><br>• In relation to leakage, although this incurs a higher cost, the Council is in favour of your alternative plan option. The Council does not find it sustainable to increase water supply without dealing with further pipe leakages. These pipe leakages can be responsible for major local flood events. The Council also considers that not tackling this issue now is only postponing it for future generations to deal with.<br><br>• The Council strongly supports the need to reduce per capita consumption, certainly to your AP proposal, but in fact to the target of 110 litres per head per day. The Upper Thames area is an area under serious water stress, and as a result, there is a strong argument for an ambitious water target. The Council has embedded this requirement in its emerging local plan (now at examination) www.wycombe.gov.uk/wdlpexamination<br><br>• There seem to be contradictory statements in the WRMP in relation to reduction in abstraction – whilst there is a broad commitment to reducing abstraction, there are also instances where further abstractions are proposed to meet demand. The Council's general view is that it would support a reduction in abstraction from groundwater supply as this protects the Chalk Aquifer, which is a precious asset in the area. The Council is broadly supportive of abstractions in the Thames, although this needs to be in line with meeting the Water Framework Directive Requirements in terms of water quality and reaching Good Ecological Status.<br><br>• Finally, the Council supports joint working between water companies providing it is effective. The Council would support greater collaboration with other stakeholders such as Local Planning Authorities, Lead Local Flood Authorities, the EA, Natural England, etc.<br><br>We hope you find these comments useful and wish to be kept informed of the consultation outcomes and final WRMP. |
| | **Our Response** | **As part of reviewing our growth projection we will align with population forecasts in local plans. We have also compared our revised property forecast with detailed information gathered from local authority plans. This analysis shows that, although zonal variations exist, we are forecasting slightly more total properties than local authorities in the first 15 years of our forecast.**<br><br>**Our revised dWRMP will include a wider suite of demand management options to achieve more challenging levels of per capita consumption (PCC) aiming towards 110 l/h/d by 2040. We are committed to reducing PCC and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 compared with our current average consumption of 151.7 l/h/d which is ambitious.**<br>**We have included in our business plan grey water re-use schemes to reduce non-** |

| 32. Wycombe District Council | | |
|---|---|---|
| | | **household consumption working with retailers.**<br><br>**Our revised dWRMP will include a leakage reduction of 15% in AMP7 and will aim to achieve a 50% leakage reduction by 2050.**<br><br>**Along with further sustainability reductions, our revised dWRMP will also propose that there will be no new groundwater options abstracting from chalk aquifers in our Central region to further protect the chalk streams and meet representations from respondents including the EA.** |
| | Summary of any change to our revised dWRMP | A normal year annual average PCC of 129 l/h/d by the end of AMP7 in 2024/25 and aiming towards a further reduction to 110 l/h/d by 2040.<br><br>Inclusion of grey re-use schemes in our business plan which include schemes to capture and reuse rain water run off working non-households via retailers.<br><br>Leakage reduction of 15% during AMP7 and aim to achieve a 50% leakage reduction by 2050.<br><br>Sustainability reductions of 33.71 Ml/day in our Central region and 2.6 Ml/day in our East Region.<br><br>There will be no new groundwater from chalk aquifers in our Central region. |

Affinity Water

Your local supply, on tap

# Statement of Response

## Appendix Two

## Response to national reports

# Appendix Two: Table of Contents



Appendix Two sets out our responses to three national reports which are relevant to our water resources management plan but which do not make not specific representations on our dWRMP.

| 1. Blueprint for Water Report - Watered Down Ambitions? – How the Draft Water Resource Management Plans Miss the Environmental Target | | |
|---|---|---|
| 1.1 | Comment | 1. Abstraction<br>There was strong evidence in the plans of a commitment to addressing water abstraction where it is thought to be already impacting on the health of our rivers. This is good news but perhaps not surprising as the sector has been working with the environmental regulators to deliver this ambition for at least two decades! In the case of the Test and Itchen in Hampshire decades of studies and circular debate has only recently been resolved but although Southern Water will cut back on its abstraction in the area it is clear from their plan that no alternative solution has been readied so we will see a decade of frequent drought permits and orders until a solution can be implemented. Interestingly in Severn Trent's plan rather than try to fix numerous site-specific abstraction issues they are progressing a more strategic solution to move water into and around their supply area that will enable them to step away from impacted sites.<br><br>There is also a large programme of work in the plans linked to ensuring that there is no deterioration in Water Framework Directive (WFD) status, a legal red line in the WFD. We welcome efforts by the sector to address this risk. However, despite OFWAT setting a common performance commitment for the sector on the use of the Abstraction Incentive Mechanism (AIM) to reduce the impacts of abstraction on the environment most plans fail to set out what they plan to do on AIM. |
| | **Our Response** | **We are working closely with the Environment Agency to ensure that we undertake targeted sustainability reductions in locations that will deliver the required benefit in order to meet the Water Framework Directive objectives. We are leading in the water industry with regards to the number of Abstraction Incentive Mechanism (AIM) sites identified and adopted in our current Business Plan and have been operating AIM successfully since its introduction in 2016. Our aspiration is to also address any No Deterioration issues where this is applicable to ensure we minimise our impact on the environment whilst we meet the demand of a growing population.** |
| | | |
| 1.2 | Comment | 2. Leakage and Demand Management<br>The environmental NGOs have been very vocal in pushing the sector to step up ambition on leakage and demand management so that companies don't need to take as much water from the environment in the first place. This set of plans certainly goes further and faster than previous plans with the result that the sector as a whole is expecting to put less water into distribution in England in both the short term and long term despite climate change and population growth (see Table 1).<br><br>Political, regulatory and peer pressure – and comments from customers, in particular – all appear to be providing an effective collective nudge here, to the good of the environment and to enhanced supply resilience.<br><br>On leakage the steer from OFWAT is that companies should target a 15% reduction from 2020 to 2025. This is reflected in the level of ambition of most companies although there is still considerable variation in both short and long-term ambition (see Table 2). The National Infrastructure Commission report (April 2018) into the resilience water supply infrastructure recommends companies halve leakage by 2050 and it is evident most fall well short. UKWIRs 'Big Questions Facing the Water Industry' agenda for research goes further still, in asking "How will we achieve zero leakage in a sustainable way by 2050?" There's much to be done. |
| | **Our Response** | **Our revised dWRMP will include a leakage reduction of 15% in AMP7 (2020-25) as per Ofwat's challenge and we plan to aim to achieve a 50% reduction by 2050 as per National Infrastructure Commission report and a higher level of demand management to ensure that we leave more water for the environment whilst ensuring we have enough water for a rising population.**<br><br>**Resilience is also a key component in our planning and to this end, we plan to increase our resilience both in terms of supply and network/transfers to become resilient to a 1 in 200 drought event with no drought permit use by 2024.** |

| 1. Blueprint for Water Report - Watered Down Ambitions? – How the Draft Water Resource Management Plans Miss the Environmental Target | | |
|---|---|---|
| 1.3 | Comment | Unfortunately, there was no comparable sector steer from OFWAT on water use efficiency measured as per capita consumption (PCC). The levels of ambition in the draft plans are generally disappointing, particularly in the long term (see Table 3)<br><br>The NIC report recommends that companies should be targeting 118 litres/head/day (l/h/d) and a report published by OFWAT in May 2018 (OFWAT Report) into the potential for deep reductions in household water demand concludes that it is possible to achieve average household consumption of between 50 and 70 l/h/d by 2065 without a reduction in the level of utility or quality of water use; although it does highlight that this will not be delivered by the industry working in isolation. Interestingly what seem like ambitious PCC targets were actually the norm in the 1950s and 1960s. Behaviour has changed a lot since then, with high abstraction consequences.<br><br>Southern Water's 'Target 100' scheme aims to support customers in reducing their personal water use to 100 litres per head per day by 2040 and in the five-year period to 2025, their reduction target is the most ambitious of all companies at 9.9%. By contrast, neighbouring Portsmouth have one of lowest levels of ambition at 2.8%. These very different targets are heavily influenced by the companies' ability to meter their customers; Southern Water's universal metering programme has already seen significant reductions in PCC, but Portsmouth's inability to meter makes it difficult for them to incentivise their customers to save water despite the fact that the two companies are looking to increasingly share precious resources in the future. Government should remove restrictions on metering as recommended by the NIC. This would enable companies to increase their efforts on water efficiency, with water savings then available to contribute to regional shortfalls in supply. |
| | **Our Response** | **We are committed to reducing per capita consumption (PCC) and have set a target in our Business Plan for AMP7 (2020-25) to reduce PCC to 129 l/h/d by 2025 and are aiming for a further reduction to 110 l/h/d by 2040. Our revised dWRMP consumption reduction target of 129 l/h/d compared with our current average consumption of 151.7 l/h/d, remains stretching.**<br><br>**We will continue our universal metering programme as part of our Water Saving Programme (WSP) which we plan to complete by 2025. As part of the WSP programme we will continue to offer home water efficiency checks to all WSP customers.**<br><br>**Alongside this, we will implement our innovative fast data option in AMP7 (2020-25) to provide customers with more detailed information about their usage through the most appropriate communication channels to help change behaviours and reduce consumption. We are expecting to deliver in total 17 Ml/d benefit from our fast data option which includes reduction in household consumption and customer side leakage.** |
| | | |
| 1.4 | Comment | 3. Resilience & catchment management<br><br>The resilience of the water sector is important for the environment, as well as for household and non-household water takers and users. It is usually the environment that suffers when water companies are not resilient through an increased reliance on drought permits and orders and through more pollution incidents. Both government and the regulators have signalled strongly that water companies need to do more to improve their resilience, particularly to drought. The companies have responded to this and the plans generally set out their current level of resilience to a 1 in 200-year drought and where there are gaps they highlight measures they will take to improve resilience.<br><br>Where the plans are much weaker is in recognising the role of the environment and land management in the resilience of their water sources. Anglian Water's catchment work is not even mentioned in their draft water resources plan and there still seems to be some siloed thinking in some companies on this issue. How catchments are managed is critical to the sustainability of our water sources in those catchments. The connectivity between land management and the management of water resources is fundamental. There are significant risks and opportunities post Brexit in this area and we need water companies to join us in being far more active in advocating for a land and water management system that works for them and their customers. |

| 1. Blueprint for Water Report - Watered Down Ambitions? – How the Draft Water Resource Management Plans Miss the Environmental Target | | |
|---|---|---|
| | **Our Response** | **We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**Our revised dWRMP includes an additional 36.31 Ml/d sustainability reductions on top of the 42 Ml/d delivered in AMP6 (2015-20) to meet Water Framework Directive objectives. Further to this, we are committed to continue with the river restoration work to allow our rivers and chalk streams to have the maximum benefit possible from the abstraction reductions.**<br><br>**Catchment management is key feature in our plan to ensure that the water quality risks arising from the land management practices are addressed and that the water resources at a catchment scale are managed in an optimum way both from a quality and quantity perspective.** |
| | | |
| 1.5 | Comment | 4. Collaboration to find the best solutions<br><br>Initiatives such as Water Resources East led by Anglian Water have shown how water companies can collaborate with each other and with other sectors such as agriculture, energy and the environmental sector both in terms of identifying the water resources challenges ahead for each sector and potential solutions that could deliver multiple benefits. This is definitely a blueprint for how water resource planning should be done in the future.<br><br>Unfortunately, that spirit of collaboration to find the best solutions does not seem to have translated well into the draft WRMPs. Very few look at the future needs of other sectors or at solutions that work across sectors. Indeed, the impression I have is that the plans don't even join up with each other across neighbouring water companies. Multi-company options such as new water transfers are referred to briefly or parked in many of the draft plans which generally favour company specific solutions. I suspect this issue is partly a cultural issue within the companies, partly a failure of the economic regulator to provide the right carrots and sticks to encourage collaboration and partly a failure of the Environment Agency to provide the leadership at a regional and national scale on water resource planning. It does leave a hanging question in my mind as to whether we are really seeing the best regional and national solutions coming out of the WRMP process. As it stands, a change in one company's plan has the potential to set off a multi-directional domino-effect impact on other companies' plans. |
| | **Our Response** | **We recognise the importance of regional solutions and are actively working with the Water Resources South East and Water Resources East regional groups. The aim of these groups is to identify ways that neighbouring water companies can collaborate and share resources both in the short/medium term but also for long term planning. We have actively engaged with both regional groups and their outputs have fed into and shaped our revised dWRMP accordingly. This will be reflected in our revised dWRMP.** |
| | | |
| 1.6 | Comment | Summary<br><br>Despite some signs of progress on leakage and drought resilience, overall, I was left disappointed with the draft Water Resource Management Plans. In particular I am concerned there is a lack of join up within companies and between them and that we aren't seeing the best solutions coming out of the process. |
| | **Our Response** | **We already have and will continue to work with the regional groups Water Resources South East and Water Resources East to identify options to share resources and shape the future water resources of the South East of England for our customers and the environment.** |

| 2. Defra Report - A Green Future: Our 25 Year Plan to Improve the Environment | | |
|---|---|---|
| 2.1 | Comment | Clean and plentiful water<br><br>We will achieve clean and plentiful water by improving at least three quarters of our waters to be close to their natural state as soon as is practicable by:<br><br>• reducing the damaging abstraction of water from rivers and groundwater, ensuring that by 2021 the proportion of water bodies with enough water to support environmental standards increases from 82% to 90% for surface water bodies and from 72% to 77% for groundwater bodies<br><br>• reaching or exceeding objectives for rivers, lakes, coastal and ground waters that are specially protected, whether for biodiversity or drinking water as per our River Basin Management Plans<br><br>• supporting OFWAT's ambitions on leakage, minimising the amount of water lost through leakage year on year, with water companies expected to reduce leakage by at least an average of 15% by 2025<br><br>• minimising by 2030 the harmful bacteria in our designated bathing waters and continuing to improve the cleanliness of our waters; we will make sure that potential bathers are warned of any short-term pollution risks |
| | **Our Response** | **We are changing our levels of service to a 1 in 200-year drought event with no use of drought permits or orders from 2024 (as per the Alternative Plan) and increasing drought resilience beyond a 1 in 200 year drought at a future point after 2024.**<br><br>**Our revised dWRMP includes an additional 36.31 Ml/d sustainability reductions on top of the 42 Ml/d delivered in AMP6 (2015-20) to meet Water Framework Directive objectives. Further to this, we are committed to continue with the river restoration work to allow our rivers and chalk streams to have the maximum benefit possible from the abstraction reductions.**<br><br>**Catchment management is key feature in our plan to ensure that the water quality risks arising from the land management practices are addressed and that the water resources at a catchment scale are managed in an optimum way both from a quality and quantity perspective.** |

| 3. National Infrastructure Commission Report - Preparing for a drier future | | |
|---|---|---|
| 3.1 | Comment | The Commission recommends that government should ensure plans are in place to deliver additional supply and demand reduction of at least 4,000 Ml/day. Action to deliver this twin-track approach should start immediately: |
| | **Our Response** | **See responses below.** |
| | | |
| 3.2 | Comment | Ofwat should launch a competitive process by the end of 2019 complementing the Price Review so that at least 1,300 Ml/day is provided through (I) a national water network and (ii) additional supply infrastructure by the 2030s. |
| | **Our Response** | **Our draft WRMP included provision for a regional reservoir (the South East Strategic Reservoir) at the earliest date practical to improve supply side resilience and to help contribute toward the 1,300 Ml/day requirement stated.**<br><br>**We are carefully considering the need for and suitability of this option, and the suitability of other strategic options, along with the appropriate delivery dates.** |
| | | |
| 3.3 | Comment | The Department for Environment, Food and Rural Affairs should set an objective for the water industry to halve leakage by 2050, with Ofwat agreeing 5 year commitments for each company (as part of the regulatory cycle) and reporting on progress. |
| | **Our Response** | **Our revised dWRMP will include a leakage reduction of 15% in AMP7 (2020-25) and we are aiming to achieve a 50% reduction by 2050.** |
| | | |
| 3.4 | Comment | The Department for Environment, Food and Rural Affairs should enable companies to implement compulsory metering beyond water stressed areas by the 2030s, by amending regulations before the end of 2019 and requiring all companies to consider systematic roll out of smart meters as a first step in a concerted campaign to improve water efficiency. |
| | **Our Response** | **We will continue our compulsory universal metering programme, which commenced in 2015, as part of our Water Saving Programme (WSP) which we plan to complete by 2025. As part of the WSP programme we will continue to offer home water efficiency checks to all WSP customers. Alongside this, we will implement our innovative fast data option in AMP7 (2020-25) to provide customers with more detailed information about their usage through the most appropriate communication channels to help change behaviours and reduce consumption. We are expecting to deliver in total 17 Ml/d benefit from our fast data option which includes reduction in household consumption and customer side leakage.** |