# Draft Drought Management Plan
# Statement of Response
# 2017

## Affinity Water

November 2017

**Security**

**This document has been written in compliance with our security policy so that no redaction is required for publication. Codes have been used to preserve the security of our production locations.**

# Asset Strategy Document Control Sheet

## Document amendment history

| Version | Status | Date | Amendment to this version |
|---|---|---|---|
| V0.1 | Draft | 23/10/2017 | First draft |
| V0.2 | Draft | 30/10/2017 | Minor amendments following review by BP and IK |
| V0.3 | Draft | 31/10/2017 | Minor amendments following review by EP |
| V0.4 | Draft | 09/11/2017 | Minor amendments following review by MP |
| V1 | Final | 17/11/2017 | |

## Document approval

| Document title | Draft Drought Management Plan Statement of Response 2017 | | | |
|---|---|---|---|---|
| e-Document location | | | | |
| | Name | Signature | Title | Date |
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| Approver 2 (external use) | Mike Pocock |  | Director of Asset Strategy | 17/11/2017 |

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# Executive Summary

Our Drought Management Plan sets out the operational actions we would take in the event of a drought situation in order to maintain water supply to our customers whilst minimising impact on the environment. Our plan is designed to be flexible, and has been tested through scenario modelling to ensure that we are resilient to a range of drought events, including events more severe than those experienced in the historic record. The plan covers all eight of our water resource zones (WRZs) across our three regions. This ensures a consistent approach to drought management is taken throughout the business, and provides clarity to customers and stakeholders about the actions we would take to manage a drought.

Water companies must develop and publish a new drought management plan every five years. As part of this process we are required to undertake a public consultation on the plan, to give stakeholders, customers and regulators the opportunity to view and submit their comments on the draft plan. Our public consultation was open for 8 weeks, between 7th August and 2nd October 2017, during which time a number of different channels were used to engage customers and stakeholders. In total 15 representations on the plan were received. The representations were directed to Defra, and were subsequently sent to us for consideration.

We received a detailed response on our plan from the Environment Agency, which included some comments referring specifically to our drought permit environmental assessment reports. We have created a high level programme for completion of these reports which has been reviewed by the EA. We will continue to work closely with the Environment Agency to achieve the completion dates specified in the programme.

A number of the representations we received referred to water resource management actions which are not within the specific remit of our Drought Management Plan, and these have not resulted in changes in the plan. In most cases these comments will be addressed by work currently being undertaken for our Water Resource Management Plan 2019, and where relevant this has been explained clearly in our responses. The public consultation for our draft Water Resource Management Plan will be held in 2018, during which time the plan will be published for comments.

This Statement of Response details all the representations which were received on our plan, and explains how we are responding to them. Some of the comments have resulted in amendments to the plan, and we have explained these changes. Some comments we have responded to without making changes to our Drought Management Plan, and we have explained why no changes are being made as a result of these.

Along with this Statement of Response, our revised Plan will be submitted to Defra for review. Once satisfied that our Drought Management Plan has met all necessary requirements (and on advice from the Environment Agency), the Secretary of State will notify us to publish our final Plan.

# Glossary and List of Acronyms

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| AMP | Asset Management Period – five-yearly investment period for management of water resources, during which price limits are set |
| Drought Order | An authorisation granted by the Secretary of State under drought conditions which imposes restrictions upon the use of water and/or allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis |
| Drought Permit | An authorisation granted by the Environment Agency under drought conditions which allows for abstraction/impoundment outside the schedule of existing licences on a temporary basis |
| DMP | Drought Management Plan – Operational plan which sets out how the company will deal with a drought situation |
| DTZ | Drought Trigger Zone – a trigger line for groundwater levels at specific points which indicate stages at which different drought actions need to be carried out |
| EA | Environment Agency |
| EAR | Environmental Assessment Report – report to support drought permit applications, which investigates and predicts environmental impacts of permits, as well as setting out the associated monitoring and mitigation actions |
| NEP | National Environment Programme – a programme of investigations and actions for environmental improvement schemes to ensure that water companies meet their statutory environmental obligations |
| SAC | Special Area of Conservation – defined in the European Union's Habitats Directive, to protect habitats and species considered to be of European interest |
| SPA | Special Protection Area – a designation under the European Union Directive on the Conservation of Wild Birds |
| SSSI | Site of Special Scientific Interest – a conservation designation denoting a protected area in the United Kingdom |
| TUB | Temporary Use Ban – demand management action which temporarily restricts non-essential use of water by customers during a drought (formerly a 'hosepipe ban') |
| WFD | Water Framework Directive – a European Union directive which commits EU member states to achieve good qualitative and quantitative status of all water bodies by 2027 |
| WRMP | Water Resource Management Plan – 25 year plan which water companies use to plan ahead and manage their water resources |
| WRZ | Water Resource Zone – the largest possible zone in which all resources, including external transfers, can be shared and, hence, the zone in which all customers will experience the same risk of supply failure from a resource shortfall |

# Table of Contents

# 1 Introduction

As part of the statutory process for water company drought plans, we have carried out a public consultation for our 2017 draft Drought Management Plan (DMP). This document explains the methods of engagement we used during the consultation, the representations we received via Defra, and how we have responded to these. It also provides information on how we have amended our plan as a result of representations.

Drought plans are a statutory requirement for all water companies under Section 39B of the Water Industry Act 1991 (WIA 1991). Our DMP has been produced in line with the Drought Plan Regulations 2005 and the Drought Plan (England) Direction 2016. Our plan is intended to be flexible, and considers the needs of customers and stakeholders, while minimising the effects on the environment.

We submitted our new draft DMP to the Secretary of State for the Environment, Food and Rural Affairs for security sign-off on 12th May 2017. On the 28th July 2017 Defra notified us that we should publish the plan for consultation. The details of how we undertook the public consultation for our DMP are provided in Section 2.

All comments on our DMP were directed to the Secretary of State in accordance with the Water Industry Act 1991. We are now publishing this Statement of Response detailing:

- The representations or comments received on our DMP and the consideration we have given to these;
- The changes we have made to our DMP as a result of comments received;
- Where applicable, the reasons for not making changes to our DMP as a result of comments received.

A number of the comments received referred to water resource management actions which are being dealt with as part of the work being carried out for our new draft Water Resource Management Plan (dWRMP), and this is explained in the relevant responses. The timing of our public consultation and the underlying work for the dWRMP has meant that the levels of service which we consulted on for our DMP are being reviewed. If these do change, we will update our DMP at the first opportunity to do so, to reflect decisions made in our final WRMP. This is likely to be at the first annual update of the DMP in February 2019.

This Statement of Response will be submitted to the Secretary of State along with a revised version of our DMP. The Statement of Response will be published on our website, and those who submitted representations will be notified of this.

The Secretary of State will assess whether we have satisfactorily addressed the comments received on our plan, and whether we have met the requirements of relevant legislation[1], Water Company Drought Plan (WCDP) Guidelines[2], and supplementary technical information[3]. Once satisfied that our DMP and Statement of Response have achieved these objectives, and taking account of advice from the Environment Agency, they will approve our plan and let us know that it can be published as our final DMP.

[1] Drought Plan (England) Direction 2016
[2] How to write and publish a drought plan https://www.gov.uk/government/collections/how-to-write-and-publish-a-drought-plan
[3] Supplementary information provided to water companies on Defra's Huddle website

# 2 Consultation Process

This section summarises the methods we used to engage with customers and stakeholders for the public consultation of our draft DMP.

In accordance with the Environment Agency's 'Water Company Drought Plan Guideline'[4] we published our draft DMP for consultation on the 7th August 2017, inviting views from regulators, stakeholders, individuals and organisations on our proposals. The period of consultation was eight weeks, which ended on 2nd October 2017.

The consultation took place through a number of different channels, to ensure that customers and stakeholders had the opportunity to read, review and respond to the plan. To ensure that the consultation was accessible to a wide audience, we produced a non-technical summary of the plan in print and online. We also offered one-to-one meetings to anyone who wished to meet us to discuss the plan directly. All correspondence sent out clearly stated how to comment on the plan, as well as the deadline for submitting responses.

Those wishing to make representations on the plan were instructed to respond directly to the Secretary of State for Environment, Food and Rural Affairs in accordance with the Water Industry Act.

Overall we received 15 representations on our draft plan, as well as comments from customers and stakeholders at the deliberative sessions we hosted.

While running the public consultation, the company was also carrying out a significant demand management campaign following a period of prolonged dry weather. This took a multi-channelled approach with a reach of over 1.7 million households.

## 2.1 Non-Technical Summary

To ensure that the Drought Management Plan was accessible to our customers and stakeholders, we produced a non-technical summary document. This summary was a 16-page booklet available in print and in PDF and outlined the key points of the plan.

The summary included:

- What a drought management plan is
- How we manage a drought
- What drought triggers are
- How we manage demand for water in a drought
- Our drought permit sites
- How we would monitor water supplies in a drought
- How to comment on the plan

Over 100 copies of the hard copy were distributed to stakeholders including our Customer Challenge Group (CCG), local authority environment leads and those attending various events including our deliberative forums.

The non-technical summary was reviewed by the chair of our CCG prior to publishing and amendments were made as a result, to ensure it was more accessible for customers.

[4] https://www.gov.uk/guidance/before-you-write-a-drought-plan

## 2.2 Stakeholders consulted

As per the Guidelines, we consulted with our statutory consultees including the Environment Agency (EA), Ofwat, Defra, Natural England, and CCWater. The following table provides a high level summary of the stakeholders we engaged with during our public consultation.

**Table 1: Stakeholders we consulted with**

| Group | Number sent to |
|---|---|
| Parish Councils | 560 |
| Councillors | 1,998 |
| Council Chief Executives and Environment Heads | 98 |
| Environmental Health Officers | 74 |
| Members of Parliament | 47 |
| Interest Groups: LRFs, River Groups etc. | 40 |
| Vulnerable customer groups: inc. housing associations | 66 |
| NHH representative groups | 11 |
| Statutory Consultees | 32 |
| Retailers (via Wholesale Operations Service Desk) | 23 |
| Neighbouring water companies | 7 |
| **Total** | **2,956** |

## 2.3 Emails

The majority of our stakeholder engagement was done through emails sent via the web service MailChimp. This enabled us to track click rates. We sent out two waves of emails through this service to gain the greatest potential number of responses. The email to stakeholders explained the DMP and directed readers to our website.

In order to contact retailers and environmental representatives, we sent an email via our Wholesale Operations Service Desk.

Statutory consultees were also contacted by email and directed to links for the full and summary documents.

## 2.4 Digital media

To engage customers on our plan we made numerous posts on various social media accounts and ran a paid for social media advert in areas near our drought permit sites, to engage those customers in areas most likely to be affected by these options.

These posts had a combined actual reach of over 16,000 customers. The posts directed customers to our website: https://stakeholder.affinitywater.co.uk/drought-management.aspx.

Our website hosted a full copy of the plan, the non-technical summary, the appendices and the contact details for making representations. Details were also provided on how to make an appointment to view the full environmental assessment reports (EARs) for our drought permit sites.

Engagement through social media was complemented by other dry weather communications promoted through our accounts.

## 2.5 Public Events

To engage a wider number of customers, we produced leaflets to distribute at local fairs and events attended by our staff. Approximately 500 leaflets were distributed at these events and staff were on hand to speak to customers about the plan.

In total, we attended seven events where we spoke to customers and stakeholders about the plan. This included the hosting of the Herts and Middlesex Wildlife Trust AGM where we had a team of six attending to speak to customers and stakeholders.

## 2.6 One to one meetings

We offered meetings to all of our statutory consultees and environmental stakeholders. The Ver Valley Society requested a meeting at which we presented the details of the Plan and answered questions. This enabled the Society to make an informed representation on the plan.

## 2.7 Deliberative forum events

In order to engage as fully as possible with stakeholders and a cross-section of our customer base, we worked with a third party provider, OPM, to run two deliberative forum sessions, one focused on customers and one on stakeholders.

There were 33 customers in attendance at the customer session. Attendees were selected to reflect the population across our supply area, based on a specification which ensured a broad spread of customers across key demographics. At the event they were introduced to the plan, given presentations about key elements of the plan and took part in activities to gauge their acceptability of our current plan. One of the main objectives of the event was to test customer acceptability of our levels of service and the associated drought management actions. Overall customer acceptance of our current levels of service was found to be high, with the majority indicating that they are happy with them.

The stakeholder session was attended by seven stakeholders from six different organisations including Hertfordshire County Council, Sustainable Letchworth, CCWater, Herts and Middlesex Wildlife Trust, University of Hertfordshire and Colne Valley Fisheries Consultative.

During the session we gave presentations on the plan and had discussions about the key issues of drought permits, levels of service and communication around usage restrictions.

A copy of the full report summarising the methods and outcomes for both events has been included in the appendices of the DMP.

## 2.8 Dry weather campaign

This year we entered into Drought Trigger Zone 2 following an exceptionally dry winter. In response to this and in anticipation of a possible worsening water resource situation we ran a dry weather campaign, encouraging water efficiency and calling for voluntary reductions in usage from our customers. The programme ran between June and September 2017. The programme used a multi-channelled approach including social media, leaflet drops to all customers, local radio and press advertising, as well as advertising on buses across the supply area.

The campaign led to a 450% increase in customers ordering water saving devices on our website and helped raise awareness of the dry weather situation.

We have also been updating our stakeholders via a monthly email update with details of the developing water resource situation.

## 2.9 Responses

We would like to thank the following for their formal representations on our DMP:

- Berkhamsted Town Council
- Chesham Town Council
- Chilterns Chalk Streams Project
- Environment Agency
- Epping Upland Parish Council
- Herts and Middlesex Wildlife Trust
- Hertfordshire County Council
- Kent County Council
- Manningtree Town Council – no comments
- Member of Public Respondent 1
- Member of Public Respondent 2
- Natural England
- The Canal and Rivers Trust
- Ver Valley Society
- Watford Borough Council

We have taken into account all representations made on our draft DMP and made responses to each comment individually. We also explain the changes we have made as a result in Section 3 of this Statement of Response.

# 3 Summary of Representations and Responses

In this section we have listed the representations we have received from Defra in response to our Drought Management Plan (DMP) public consultation. We have provided our responses to each of these, and explained how we have made changes to the DMP as a result of comments. Where we have not made changes we have explained why not.

## 3.1 Environment Agency

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| 3.1.1 | The plan does not include details of how the company has considered if compensation may need to be made as a result of the implementation of a drought management measure. 'Compensation' is within the meaning of Schedule 9 to the Water Resources Act 1991. The draft plan should include information on any compensation it may need to make in the event of losses/damages to source owners/affected parties as a result of implementing a drought management measure. |
| **Our Response** | **We have added information into Section 5.4 of the DMP about how we will consider compensation claims under Schedule 9 of the Water Resources Act.** |
| 3.1.2 | Affinity Water should provide a set of timelines to illustrate how it will apply drought measures under a range of historic and synthetic drought scenarios of different magnitudes and duration, including droughts that are more severe than experienced in the historic record. The company should provide an estimation of the return period for each event and clarify the sequencing and frequency it will need to implement drought permits and emergency measures in order to secure supplies. This will enable customers and stakeholders to understand which drought scenarios trigger the need for drought permits, non-essential use drought orders and emergency drought orders. It will also help the company to demonstrate how its drought triggers and sequencing of drought measures will minimise the risks to the environment and ensure security of supply under a range of drought scenarios. |
| **Our Response** | **We have put together a number of worked examples of drought scenarios which clearly show the sequence of our drought management actions and how these would be implemented at different stages in a drought event. These are included in the Appendices of our main DMP.** |
| 3.1.3 | We would also like to better understand why non-essential use bans are implemented after drought permits (Figure 29) and how this relates to the company's levels of service and (section 1.4). |
| **Our Response** | **The sequence in Figure 29 was previously incorrect and has now been changed to reflect the fact that non-essential use bans (demand-side drought orders) would be implemented before drought permits.** |
| 3.1.4 | Testing the plan to a range of droughts is needed to demonstrate that the company's triggers and measures will enable the timely implementation of drought measures needed to secure supplies under a range of drought conditions.<br><br>It is important to understand which drought permits will be needed to secure supplies, the frequency they will be implemented and the sequencing of their implementation. This will help the company to assess the potential impacts of the permits on environmental and ensure that adequate monitoring and mitigation measures are put in place to help minimise adverse impacts. (Direction 3c, 3e and 3f). |

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| **Our Response** | **Our plan and triggers are based on empirical practice and records of drought and implementation of restrictions in 1990-92, 1996-97, 2006 and 2012.**<br><br>**We have prioritised our drought permits according to likely severity of environmental impacts, and will endeavour to keep this priority should these actions need to be implemented. As per our response to comment 3.1.2 we have also put together worked examples which show the scenarios under which these options are likely to be used.** |
| 3.1.5 | The company should complete as much work as possible to assess the impact of its drought permits for its final plan. The company should focus its efforts on sites where permits are most likely to be needed and should commit to a timetable to complete any outstanding work at other sites as soon as possible.<br><br>The company should refer to the detailed comments we have provided for each EAR, and continue to work with local Area offices to complete the required work to an agreed timetable.<br><br>Completing environmental reports for all permits will help the company to assess the potential impacts of the permits on the environment and to ensure that suitable monitoring and mitigation measures are put in place to help minimise adverse impacts (Direction 3c, 3e and 3f). This will also help the company to determine if drought permit options should be drought orders if its assessments conclude that there is likely to be significant risks to the environment at sensitive sites.<br><br>We also recommend that the company provides details to illustrate how it will implement its drought permits (and/or drought orders) under a range of drought scenario (see Recommendation 1 above). This includes detailing the frequency that drought permits will be implemented and the sequencing of their implementation. We would expect drought permits for most sensitive sites only to be applied for after a non-essential use drought orders is implemented and for a non-essential use drought order to be implemented in-line with the company's stated levels of service. |
| **Our Response** | **We have carried out a significant amount of work as part of the development of the EARs for our drought permit sites, however we acknowledge the need to carry out further work to ensure that all of our drought permit options are as close to 'application ready' as possible.**<br><br>**We have developed a programme of work which has been reviewed by the EA, to prioritise the completion of our EARs according to likelihood of need. We will continue to work closely with local Area offices to ensure that necessary work is completed according to the programme. This is due to be completed in 2018, although we will continue to update the EARs after this date, when new information or experience allows greater understanding of potential impacts. As part of this work we will determine which sites should be applied for as drought orders, which will be decided in agreement with the EA.** |
| 3.1.6 | The company should complete as much work as possible to assess the impact of its drought permits for its final plan and identify and additional monitoring needed to support its assessment. The company should focus its efforts on sites where permits are most likely to be needed and should commit to a timetable to complete any outstanding work at other sites as soon as possible. The company should refer to the detailed comments we have provided for each EAR and work with local Area offices to complete the required work to an agreed timetable. |

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| **Our Response** | **Please see response to 3.1.5. We will continue to work with the EA local area offices to ensure the monitoring plans for each of our drought permit options are comprehensive, and we will respond to the detailed comments on each of the EARs in this respect individually. The programme we have developed for completion of our EARs is ordered according to the prioritisation of drought permits, so that sites where permits are most likely to be needed will be completed first.** |
| 3.1.7 | The company should provide further details on generic supply side options by:<br>• Providing a list of its existing licensed sources and disused and abandoned sources where it plans to undertake work to increase and/or maintain abstraction during a drought.<br>• Clarifying if it will require a drought permit, or if abstraction will be within existing licence limits.<br>• Providing an estimate of the supply-side benefits in Ml/d at each site<br>• Outlining the work needed at each site and how long it will take to deliver the estimated benefits<br>• Ensuring that its drought triggers enable necessary enabling works to take place ahead of supplies being needed in a drought<br>• Outlining any other permits or permissions that may be require to increase or maintain supplies, including actions to mitigate water quality constraints.<br>• Preparing details of any drought permits needed, including an EAR for each relevant site.<br>• Confirming the drought scenarios under which the actions will be implemented, including which actions would only be considered under extreme conditions. |
| **Our Response** | **We have now updated our Plan to ensure that all the above information is included in our DMP. This has been achieved by updating the table which details supply-side options in Section 5.3 (Table 16). Volumes have been provided where possible for full visibility. The table includes details of associated drought triggers and lead in times for each of the actions.**<br>**Based on current long term outages we could install infrastructure at three of our licenced sources to regain DO – this information has now been added to the above table in the DMP, including the associated benefits in Ml/d.**<br>**The DMP includes a list (Table 17) of all options which would require a drought permit, and associated volumes have been provided with this. As described in the Plan, EARs have been developed for each relevant site and we are continuing to work with the EA to bring these to 'application-readiness'.**<br>**The table providing information on our demand-side actions has also been updated to fully comply with the Guidelines.** |
| 3.1.8 | Affinity Water should remove, or explain inconsistencies between the drought measures detailed in its drought plan and those that have been used to test the robustness of its plan as part of its drought scenarios modelling work. |
| **Our Response** | **We have included all of the drought permit options in our scenario modelling, including the sustainability reduction sites, and this has been** |

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| | **explained in our DMP. There are therefore no inconsistencies between our drought options and the scenarios modelled.**<br><br>**The original scenarios modelling we carried out included demand reductions associated with emergency restrictions. Our DMP states that we consider rota cuts and standpipes to be unacceptable. These would therefore fall under the remit of our emergency plan, and so to further align the modelling with our DMP, some additional sensitivity analysis of the modelling was carried out, to ensure that we are able to deal with droughts worse than those in the historic record, without recourse to emergency measures. The technical report produced has been included in our DMP Appendices.**<br><br>**The sensitivity analysis indicated that we are resilient to droughts of up to a 1:200 return period, and our drought management actions are appropriate. Further information on the modelling carried out is provided in Section 4 of our DMP.** |
| 3.1.9 | The company should confirm that the scenarios and drought measures used in the drought plan are consistent with the scenarios and actions being considered by the company to test the resilience of its draft WRMP, including for droughts that are more severe than experienced in the historic record (as required by the WCDP guideline). |
| **Our Response** | **We have carried out additional sensitivity analysis of our drought scenario modelling to ensure that all actions and parameters used are consistent with work for our draft Water Resources Management Plan (dWRMP) 19. This will be addressed in the compliance document written for the dWRMP, and further information has been added to Section 4 of our DMP to explain the results of this. The full report is also available as an appendix of our DMP.** |

## 3.2 Natural England

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| 3.2.1 | A water company is a competent authority under Regulation 7(1) of the Conservation of Habitats and Species Regulations 2010 (which replaced the Habitats Regulations). Under Regulation 9(5) a competent authority, in exercising any of its functions, must have regard to the requirements of the Habitats Directive so far as they may be affected by the exercise of those functions.<br><br>Affinity Water must ensure that its drought plan meets the requirements of the Habitats Regulations and, have if necessary undertaken a Habitats Regulations Assessment (HRA) on the effects of the drought plan (including any supply-side drought management options) on Special Areas of Conservation (SACs), Special Protection Area (SPAs) or Ramsar sites, alone or in combination with other plans.<br><br>There does not seem to be a HRA submitted with the current dDMP, however, we note that SPAs, SACs and Ramsar sites have been screened within the Environmental Assessment Reports (EARs) undertaken to support the dDMP and the drought permits/options selected. The absence of a separately labelled HRA, even just a summary screening of the plan, has made it difficult for Natural England to advise whether the dDMP will have a likely significant effect (LSE) or not, under the Habitats Regulations. We advise that it would be helpful for Affinity Water to pool all of their HRA screening assessments that state no LSE into one clear and concise audit of the overarching plan for |

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| | review. The dDMP, as presented currently, does not contain sufficient environmental information for us to provide more through comments. |
| **Our Response** | **As well as the work undertaken for our drought permit environmental assessment reports (EARs), an HRA has been carried out as part of the development of our dWRMP19. This has included a full assessment of potential likely significant effects (LSE) of using our drought permit options on SACs, SPAs and Ramsar sites. A summary of the results of this assessment for LSE has now been included within Section 6.3 of our DMP. Further details can be found in the relevant section of our dWRMP19, which will be published for consultation early in 2018.** |
| 3.2.2 | Section 6 of the dDMP addresses the environmental impacts posed by actions required in a drought event. Natural England acknowledge the inclusion of the relevant environmental legislation within this section. While these have been succinctly summarised within section 6, we note that the following is stated: "[Affinity Water] have produced detailed Environmental Assessment Reports (EARs) for all drought permit/order sites and fully evaluated any associated potential impacts on Habitats Directive sites or SSSI sites of European importance." Further to this, "Habitat Directive sites" are referenced within this section. While the Habitats Directive is the overarching European legislation that protects SACs and SPAs, it has been transposed into UK law as the Habitats Regulations. As such, we would advise altering the wording in this section to accurately reference UK legislation. In addition to this, "SSSI sites of European importance" seems to imply that only SSSI associated with SACs or SPAs have been considered. |
| **Our Response** | **Noted. The wording in Section 6.1 has been now been updated, to reflect the relevant environmental legislation which we have adhered to, including the Habitats Regulations.** |
| 3.2.3 | <u>Strategic Environmental Assessment</u><br><br>Affinity Water have not undertaken a Strategic Environmental Assessment (SEA) in the development of this dDMP, required under the European Directive 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment'. As such, there is limited environmental evidence presented to provide Natural England with confidence that a strong environmental baseline has been established from which to draw conclusions within the drought permits. There is insufficient reference to designated sites in the drought plan EARs and in the absence of an accompanying SEA, Natural England advises that the proposals have given insufficient evidence of assessment of impacts (or their absence) on of Sites of Special Scientific Interest (SSSI) or any S41 priority habitats and species present across Affinity Water's operational area. Please see the subsequent paragraphs for more specific detail. |
| **Our Response** | **Our DMP does not include any provision for investment. All investment implications related to actions in our DMP have been included in our dWRMP19.**<br><br>**An SEA has been undertaken as part of the development of our dWRMP19, and this includes assessment of all of our supply side drought permit options. As part of this the potential impacts on water dependant priority habitats and species have been considered. This information has been used to further develop our EARs, and all relevant information has therefore been included in these reports. Text has been** |

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| | **added to Section 6.1 to explain that an SEA has been completed for the dWRMP and where the resulting outputs will be used. The SEA report itself will form part of our dWRMP suite of documents, and will be available to view when the dWRMP is published for consultation in 2018.** |
| 3.2.4 | <u>Strategic Environmental Assessment – Nationally Designated Sites</u><br><br>Sites of Special Scientific Interest (SSSI) are nationally designated under the Wildlife and Countryside Act 1981, and many are not also part of European designations. There are several wetland sites within Affinity Water's supply area, which rely on groundwater connectivity to maintain their habitats. Table 19 of the dDMP summaries the potential environmental impacts from 'supply-side drought actions'. This table focuses primarily on the impacts that will be seen on river flows, and does not consider any wetland areas that may also be present within the groundwater catchments from which abstraction occurs, and which may also be put at further risk under a drought permit/order. We advise including this within Table 19, to ensure that the dDMP sufficiently address all potential environmental receptors. |
| **Our Response** | **Noted. We have been in discussions with the local Area EA offices as part of our EAR development and this has highlighted the need to consider additional habitats such as wetlands.**<br><br>**Also, as stated above, an SEA has been carried out which assesses the environmental impacts of our drought options on designated sites, including SSSIs, and the outputs of this will be reflected in our EARs. Table 19 in the DMP has been updated to include possible impacts on wetland habitats.** |
| 3.2.5 | <u>Strategic Environmental Assessment – S41 Priority Habitats and Species</u><br><br>Under the Natural Environments and Rural Communities Act 2006, Affinity Water must have regards to conservation and enhancement of priority habitats and species. As part of this duty the drought plan EARs should identify whether the options presented within their dDMP and drought permits will have any significant impact on any water dependant S41 priority habitats and species. Such habitats and species have not been mentioned within any of the documentation provided. The provision of a SEA would have secured the assessment of the implications of the dDMP on such habitats and species (for example, chalk streams, and chalk dependant wetlands. Furthermore, identifying the presence of and risk to water dependant S41 priority habitats and species would at least allow for Affinity Water to develop appropriate monitoring and mitigation principles within the dDMP. |
| **Our Response** | **As mentioned above, our EARs provide thorough assessments of the potential impacts of our drought permit options, including implications for priority habitats and species. In addition the SEA for our dWRMP has fully assessed possible risks to water dependent priority habitats and species, and this additional work will feed directly into our EARs.**<br><br>**The SEA will be available to view during the public consultation for our dWRMP19 in early 2018.** |
| 3.2.6 | <u>Environmental Assessment Reports</u><br><br>We advise that the Environmental Assessment Reports (EARs) currently provided do not relay sufficient information to ensure that drought options are permit ready, our below comments relate specifically to the considerations of |

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| | SSSI. Natural England note that in several cases it states that various aspects of the environmental assessments will be "completed at the time of application for a drought permit". This includes assessments potentially relating to designated sites. A proposed permit without a developed environmental baseline and without sufficient consideration of impacts and mitigation on nationally important biodiversity is not permit ready. Resultantly, Natural England recommends that all relevant environmental baseline information is included at the current stage, or that it is made clear within the reports that the assessments have been undertaken to level of detail that would be required at permitting. Further to this, there is no discussion over the implications of the drought permits on any S41 priority habitats and species within the EARs provided. In addition any evidence gaps in the baseline data and how such evidence gaps will be filled should also be included within the drought plan EARs. |
| **Our Response** | **We are continuing to develop our EARs as per the programme which has been reviewed with the EA, and we will work to ensure that full assessment of baseline information has been incorporated in the reports, and has been used to assess the likely impacts of using the permit options during a drought event. Designated sites, including SSSIs, have been included as part of this assessment, as well as priority habitats.** |
| 3.2.7 | <u>Environmental Assessment Reports</u><br><br>We note that for many of the Environmental Assessment Reports (EARs) that many of the national and European sites identified have been "reviewed using the latest Natural England report (Natural England, 2017) for any water related issues and no known problems were identified". The assessment in the EAR should be against the specific impacts of the drought option and not in relation to a generic report. However, Natural England cannot see any further detail on these reviews, and we can therefore not identify whether the conclusions drawn from such reviews are appropriate. The EARs should provide more context for the SSSIs that have been screened out from any impacts, as well as reviewing the water dependant priority habitats and species that may be affected by the drought permits. This would afford Natural England the opportunity to fully review the conclusions of the drought options and the relevancy of the mitigation and monitoring approaches. We have included several examples of specific drought permit EARs that we are concerned about in Annex 1 of this letter. |
| **Our Response** | **We have explained in Section 6.1 why we do not need an SEA as part of our DMP. As part of the work for our dWRMP however an SEA has been carried out, including all of the drought permit sites. This involved assessment of potential effects on SSSIs and all relevant information will be included in our EARs.**<br><br>**Most of the SSSIs identified within the scope of impact from the drought permits are not water dependent and have therefore been screened out for any potential impacts, but they have still been included as part of the EARs due to their proximity to sources. We have investigated other sites such as Local Nature Reserves, Local Wildlife Sites and other water dependent features which are in close proximity and are more likely to be affected by initiating a drought permit. We are still in the process of completing our EARs, and are working closely with the EA to ensure** |

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| | **that they are 'application ready' in accordance with our programme.** |
| 3.2.8 | Protected species<br><br>Having reviewed the EARs provided, we also note that there is limited detail of the type of species present within the river systems being assessed. While macrophyte and macroinvertebrate surveys have been undertaken for the sake of the Water Framework Directive (WFD), there does not appear to be any investigation into the presence of protected species. Again, the absence of this information makes it difficult for Natural England to fully comment on the suitable scope of the proposed monitoring and mitigation. Please see Annex 2 of this letter for further information on protected species. Nor are protected species discussed within the main body of the dDMP. |
| **Our Response** | **We believe that the topic of protected species is more relevant to the individual EARs which refer to each of our drought permit options. We acknowledge that further work on this aspect is required for some of our EARs, and we are working with the EA to ensure that this is carried out - where this has not been done already we will request data from biological record centres in order to carry out full assessment of potential impacts.** |
| 3.2.9 | Drought Permit: UTTL<br><br>Natural England requires further clarification on the conclusions of impact on the Debden Water SSSI from the proposed UTTL drought permit. We do not consider that enough information has been provided within the current EAR to infer with confidence that no issues will occur (para. 4.4.2 of the dDMP). The report states the following in relation to this SSSI: "This site was reviewed using the latest Natural England report (Natural England, 2017) for any water related issues and no known problems were identified although these mainly focused on the grassland areas of the site. As the site is a tributary of the River Cam, it is likely that it could become dry under drought conditions." Presumably, when the report refers to drought conditions, it means under normal environmental drought conditions, and not as a result of the permit. This will need clarifying to provide context for the monitoring efforts affiliated with the drought option. Also it is usual the hydrological assessment of drought option will assess whether the drought option will prolong the rewetting following drought in other words prolong the impacts of drought.<br><br>Furthermore, we are not confident of the assertion that the drought option measures will not have any impact on the SSSI, due to its upstream location. More evidence needs to be provided within this EAR to ensure that any risks can be identified, and by extension appropriate monitoring and mitigation is applied to the drought permit. We would expect the following to be provided:<br><br>• Despite the location of the SSSI, we consider that there is potential of impact from the creation of depositional zones<br><br>• If levels drop significantly there is a risk of bank slumping and head cutting<br><br>• The above will depend on how far back up the flow change will effect, and this will be a result of the local slope gradient of the channel subject to drought controls. As such, we would expect this to be assessed within the EAR.<br><br>• We also advise that a discussion over potential impacts on |

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| | groundwater levels is undertaken, in relation to potential drawdown zones that may occur. A summary of local geology and ground water connectivity between UTTL and the Debden Water SSSI should be provided to address this.<br><br>All of the above must be considered in line with both normal environmental conditions under drought, and those exacerbated by the drought permit. We would expect both monitoring and mitigation efforts to take this SSSI into account. |
| **Our Response** | **Where the Cam EAR refers to drought conditions in Section 4.4.2 it does indeed mean under normal environmental drought conditions, and not as a result of the permit. This has been clarified by adding text to the report.**<br><br>**The drought permit option for UTTL would involve only a cessation in the augmentation of the river, and there is no intention to increase abstraction at this site. Text has been added to the report to make it clearer that there would be no increase in abstraction. Consequently, there will be no impacts on groundwater levels other than those experienced under our business-as-usual conditions. Impacts will therefore only be associated with flow changes downstream of the drought permit site.**<br><br>**As Debden Water is upstream of the drought permit site and abstraction is not being increased, groundwater levels here will not be adversely affected by use of the permit. This has been explained in the Cam EAR. There would therefore be no increased risk of bank slumping, head cutting or depositional zones.** |
| 3.2.10 | <u>Drought Permit: FULL</u><br><br>It would be beneficial for additional clarification to be afford to the information within the FULL drought permit EAR. Specifically in relation to both the Sherrardspark Wood SSSI and the Tewinbury SSSI, which have been identified by screened out from risk, within the report. Our advice is as follows:<br><br>• In paragraph 4.4.1 of the FULL drought permit EAR it states that Sherrardspark Wood SSSI will not be affected by the potential drought permit, due to being on high ground. There are some assertions made in this paragraph that Natural England advise Affinity Water re-visit.<br><br>• Natural England have reviewed the maps presented within the EAR against our own mapping software, and we consider that at least some of the SSSI is within the catchment of the River Mimram.<br><br>• In relation to the Tewinbury SSSI, while we acknowledge that this SSSI is quite far downstream from the FULL drought permit location. The report claims the following: “This site is downstream of the influence of abstraction from FULL and the existence of springs at Digswell and Tewinbury allow this section of the river to be very robust.” However, this site is/forms part of the SSSI citation along the River Mimram, and has suffered low flows in the past, with work being undertaken to address issues with flows. As such, we are concerned that this site is not as robust as is assumed in the EAR. Further to this, there is not enough information supplied with the assessment report to allow us to analyse the conclusion made. |

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| | The above information should be covered within the EAR submitted for this drought permit. We do not consider it to be permit ready at present. |
| **Our Response** | **The Sherrardspark Wood SSSI is approximately 30 metres higher in elevation than the FULL drought permit site. In addition the SSSI is on the Lambeth Group (clays and silts) and London Clay, therefore if groundwater is present on the site there, it is not chalk derived and therefore would not be impacted by our abstraction. This information has been added to the EAR for clarity. We will review the map in the EAR and correct.**<br><br>**We will be carrying out further analysis to establish the extent of the potential impacts of using FULL drought permit, and whether this might affect the Tewinbury SSSI.**<br><br>**We acknowledge that further work is needed to bring the FULL drought permit to 'application readiness', and will continue to work with the EA to ensure that the EAR is as complete as possible within the time specified in our programme.** |
| 3.2.11 | <u>European Protected Species protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended)</u><br><br>Natural England's standing advice provides guidance on how protected species should be dealt with in the planning system. Under regulation 9(3) of the Habitats Regulations, competent authorities (in this instance Affinity Water) must have regard to the requirements of the Habitats Directive when exercising any of their functions. This includes having regard to whether the development proposal is likely to negatively affect any European Protected Species (EPS) and whether any necessary licence is likely to be granted by Natural England. This should be based on the advice we have provided in this response on likely impacts on favourable conservation status and our published guidance on the three licensing tests (i.e. no alternative solutions, imperative reasons of overriding public interest and maintenance of favourable conservation status). More information on the requirements to meet the three tests is provided in Defra's draft guidance on the Habitats Directive (of particular interest are paragraphs 125-143) and Natural England's guidance on how we apply the three tests. |
| **Our Response** | **Please see responses to 3.2.1 – 3.2.8.**<br><br>**We are fully investigating all potential impacts of using our drought permits, including possible effects on European Protected Species. Through the work being carried out on our drought permit environmental assessment reports we will ensure that we are fully compliant with the legislation and guidance.** |

## 3.3 Ver Valley Society

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| 3.3.1 | 2017 has demonstrated that it takes just one year of 'below normal' rainfall to reduce the River Ver to a perilous state. Despite all the good efforts of Affinity Water to balance managing water resources with environmental concerns including the closure of BOWB pumping station in 2016, we are disappointed that the River Ver, especially in the upper reaches, is still suffering with little or no flow |

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| | on an increasing basis. |
| **Our Response** | **We are continuing our committed sustainability reductions, with 42 Ml/d reductions to be delivered during AMP6 and further reductions due in AMP7. This is in addition to reducing abstraction at FRIA by 13 Ml/d in 1993. We have also implemented an extensive monitoring programme to assess the effectiveness of these reductions both at local and catchment scale. We are also reviewing WINEP1 and 2 with the Environment Agency as part of our PR19 Business Plan, to bring local rivers to good ecological status or potential.** |
| 3.3.2 | The Ver Valley Society (VVS) believes that this is an unacceptable situation for one of the world's 200 chalk streams and a river which Affinity recognises 'has high conservation value, as well as recreation values and a record of cultural history in the landscape.' (WRMP14). The Cranfield University Chalk Streams Report (2017) is a more recent analysis of the state of the Chiltern chalk streams and the challenges involved in improving their status from the current 'poor' to 'good'. |
| **Our Response** | **Along with our sustainability reductions, we also have an extensive programme of morphological works which aim to improve the status of six of our local rivers, including the Ver, to 'good' status. These works should improve the habitat quality of the Ver, as well as increasing its resilience to drought events.** |
| 3.3.3 | Abstraction reductions across the Chiltern chalk stream region have failed to halt the decline in flows, and the proposals in this DMP to increase abstractions or re-open pumping stations in drought years will only exacerbate that decline, and lengthen recovery in the river fauna and flora afterwards. |
| **Our Response** | **We acknowledge the Ver Valley Society's concerns, and in our plan we emphasise that we would only consider using any of our drought permit options under very serious drought conditions, and if security of supply was threatened as a result.**<br><br>**We are working closely with the EA to predict and plan mitigation for any potential environmental impacts of our drought actions. We are confident that any such impacts would be temporary and would not reverse the long term gains achieved through our sustainability reductions. In addition, as part of the development of our dWRMP19, we are investigating options to update our levels of service to reduce the proposed frequency or return period of needing to use drought permits.**<br><br>**We are proposing investment options to ensure we are resilient to a drought equivalent to the worst historic event without the need for drought permits. Text has been added to explain this in Section 1.3 of the DMP.** |
| 3.3.4 | Given its current water sources, Affinity has devised a rational system to manage demand in a drought, as set out in Sections 4 and 5 of the Non-technical Summary, but we do not agree that any extra water should be abstracted from the River Ver catchment at FRIA or BOWB as shown in the stage order plan in Section 5, as we fear that as the Ver will already be dry by the time these extra abstractions are triggered the unique chalk stream ecology may never subsequently recover. |
| **Our Response** | **Our drought permit sources have been carefully chosen based on our past experience and knowledge of known water availability during drought events, and we have added further text to explain this in our DMP. We have ranked the drought permit sources and prioritised them according to** |

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| | **likelihood of environmental impacts. We will continue to work closely with the EA to ensure that any impacts are monitored and mitigated, during and after a drought event.**<br><br>**The volume of water abstracted during a drought would be small compared to the deficit of rainfall being experienced at the time, therefore any impacts such as delay in recovery will be proportionately less significant than the natural effects of the drought itself.** |
| 3.3.5 | Affinity is capable of both internal transfers, and import of water from other companies. Rather than further exhaust the chalk aquifers in drought years, all assistance and incentive should be offered to ensure Affinity increase this transfer capacity, to reduce its dependency on its Chiltern boreholes. |
| **Our Response** | **We will optimise internal and external transfer capabilities before consideration is given to using drought permits. In the case of external transfers, their availability depends on the supply position of the donor company at the time of need, as it is likely that under such drought conditions, other water companies in the Southeast of England may also be experiencing issues. The drought permits are to be used only after all other drought management options in our DMP have been exhausted. This is shown in Figure 29 of the DMP, which has now been updated to provide the correct sequence of events, as well as Table 16 which shows sequencing of supply-side options.** |
| 3.3.6 | It is clear that southeast England will suffer an increasing water deficit due to climate change and population increase (600,000 to 2040 in Affinity's supply area alone, requiring an extra 100 million litres per day), so a holistic view needs to be taken to balance supply and demand over much greater distances than is possible today, by transfers from areas such as the North West and Wales (where NERC monthly river flow reports invariably show above or notably higher than average flows). |
| **Our Response** | **We recognise that long term water availability is a wider issue than our company area, and we will continue to work closely with our regulators, neighbouring water companies and regional partners, including Water Resources East (WRE) and Water Resources in the South East (WRSE), to investigate long term options for managing our supply and demand balance whilst minimising impacts on the environment. This will be addressed in our dWRMP19.** |
| 3.3.7 | We call upon the Secretary of State to initiate a major water infrastructure review aimed at creating a National Water Grid with a timetable for implementation while there is still time to save our unique chalk streams heritage. A NWG needs to be in place within 20 years. To continue as we are makes further decline inevitable, because the technical details in the full DMP show that there is little scope for abstraction increases in Southeast England. This would also support the wider economic development of the region. The time for taking water for granted is over. |
| **Our Response** | **We acknowledge the Ver Valley Society's call for a water infrastructure review and fully support the message that water should not be taken for granted. We supported the WaterUK national study to consider all options and the industry has input the work of the National Infrastructure Commission (NIC). We will continue to work with Water UK and the NIC in developing knowledge, and this work is reflected in our dWRMP19.** |
| 3.3.8 | There is a lack of public understanding of the connection between increasing water |

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| | use and the decline of the chalk streams. Affinity should redouble its efforts to educate its consumers about the importance of water-use efficiencies and aim to reduce consumption in its area to the national average. Experience with waste recycling shows that the public will support initiatives to improve the environment once they understand the need and rationale for change. |
| **Our Response** | **We acknowledge the Ver Valley Society's desire for more to be done on educating the public around water efficiency and chalk streams. Affinity Water already engages with school children each year (29,376 between January and September 2017), providing curriculum linked lessons about where our water comes from. We also continuously run our Water Saving Programme (not just when we are in any of the Drought Trigger Zones) where we promote efficient use of water and distribute free water saving devices.**<br><br>**This year we have been operating under our current DMP and have implemented an exemplar communication campaign as part of our DTZ2 actions.**<br><br>**Our campaign entitled "Keep Track of the Tap" promoted the message of water efficiency to all customers. In addition we have added information to our website to inform customers of the developing water resource situation. This includes graphics to help customers visualise and understand the situation.**<br><br>**This year, we have also partnered with national campaign group "Hubbub" to launch an online water saving campaign. We are always looking for new ways to inform and educate customers and will continue to do more over the coming years.** |

## 3.4 Herts and Middlesex Wildlife Trust

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| 3.4.1 | HMWT is the leading voice for wildlife conservation in Hertfordshire and Middlesex with over 22,000 members. Since 2011 the HMWT Living Rivers Project has worked to raise awareness of Hertfordshire's rivers and to restore these degraded habitats. HMWT are also the Defra appointed hosts of the Upper Lea and Upper Lower Lea Catchment Partnerships, a partnership of local stakeholders and users working to achieve EU Water Framework Directive targets of "good ecological status" for the River Lea and its tributaries. There are 47 Wildlife Trusts across the UK: The Wildlife Trusts are the only charities working to protect the full range of UK wildlife and habitats at a local level.<br><br>Hertfordshire's rivers represent a large proportion of the worlds' chalk river resources. There are estimated to be around 200 chalk rivers in the world, 85% of which are found in England of which 12% are found in Hertfordshire. This makes Hertfordshire's rivers an internationally important conservation resource. Despite this none of Hertfordshire's chalk rivers are protected by legal designation. None of Hertfordshire's chalk rivers are currently achieving good ecological status as required under the European Water Framework Directive with the majority failing to meet the required flow levels needed to achieve this. Low flows in Hertfordshire's chalk rivers are directly linked to over abstraction of groundwater resources. |
| **Our Response** | **We recognise the importance of chalk streams in our area, and this is reflected in our commitment to reducing abstraction and leaving more water in the environment. We have been working in partnership with the EA and** |

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| | **local environment groups since 1992, implementing reductions in catchment abstractions. This has included a reduction of 8 Ml/d on average in the Misbourne catchment, and 12 Ml/d on average in the Ver catchment. In addition there will be 42 Ml/d of reductions to be delivered during AMP6 and further reductions due in AMP7. Since 1990 we have also undertaken a significant number of investigations on most of the river catchments in our supply area.**<br><br>**Our current National Environment Programme includes an ambitious programme (river restoration and habitat enhancement) of morphological works to improve chalk stream habitats. We will also continue to work with HMWT through our Strategic Partnership to deliver our Biodiversity Programme and through our work with Catchment Partnerships.** |
| 3.4.2 | During 2017 many of Hertfordshire's chalk rivers dried out due to a prolonged period of dry weather and reduced aquifer recharge. This has allowed scrutiny of the existing drought actions in place. Most notably many of Hertfordshire's chalk rivers were already dry before any public information was made available. This means that the environmental impact of drought on aquatic biodiversity have already occurred and it is likely it will take several years for this to recover fully. As catchment hosts we received several messages from concerned members of the public during this period who were seeking advice which we were unable to provide effectively due to the lack of information provided to us by Affinity Water. It is our view therefore that the Drought Triggers used by Affinity Water should be reviewed to reflect this. Affinity Water should begin raising awareness and appealing for voluntary usage reductions when the situation reaches Drought Zone 1, at present this occurs at Drought Zone 2. Additional information should be made available to catchment partnerships and key water resource stakeholders, HMWT manage several important wetland conservation areas which includes Sites of Special Scientific Interest that would be severely affected in the event of drought, early engagement and information provided by Affinity Water and the Environment Agency would allow us to better prepare for drought and increase resilience, this is also the case for several stakeholders within the catchment partnership for example fishery managers and angling clubs. |
| **Our Response** | **We continuously monitor our water resources and we were aware of the developing dry weather situation from 2016. We have been following our DMP and formed our Drought Management Group (DMP) in January 2017. The group has focused on means of effective communications from the earliest stage. Information on the water resource situation has been included on our website since February 2017. We have been sending out informative monthly emails to stakeholders (including HMWT) since May 2017. This update includes information on water resources, rainfall, Met Office forecasts, as well as what we have been doing to manage the situation. We commenced our full publicity campaign in July. This included a mail drop to all customers, as well as information advertised on radio stations, buses, company vehicles and local magazines. We have also partnered with "Hubbub" to launch an online water saving campaign.**<br><br>**We work in partnership with the EA and Defra to ensure that dry weather communications are sent out early on in a developing dry weather situation, and that these messages are consistent.**<br><br>**With regards to the comment about appealing for voluntary usage before reaching Drought Trigger Zone 2, we run an extensive Water Saving Programme throughout the year, which includes roadshows at many** |

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| | **community events promoting the water saving message and handing out free water saving devices. We also engage with students and run an Education and Environment Centre to reach out to approximately 10,000 students per year, with messages around the importance of saving water.** |
| 3.4.3 | A review of the use of Temporary Usage Bans (TUBS) and their scope is also required. At present these are very broad and do not consider the wider environmental implications they pose. One example of this is the cleaning of boats. Whilst preventing boat users from cleaning boats with hosepipes/pressure washers would save water it increases biosecurity risk posed if boats are moved between multiple sites, by being unable to thoroughly clean boats this risks transfer of non-native invasive species to new sites, there is significant risk of this within the Lea Catchment where species found in very few sites elsewhere in the country are present for example the species Dikerogammarus haemobaphes. Therefore whilst it is evident that the economic and social impact of TUBS has been investigated, more needs to be done to assess the potential wider environmental impacts TUBS could pose. The geographic scale that TUBS are used should also be considered, within Hertfordshire it is clear that environmental drought conditions affect different rivers at different times, for example the Chilterns chalk river system is currently seeing much dryer conditions than the East Hertfordshire Chalk Rivers. A mechanism for triggering TUBS on a more local scale therefore needs to be investigated. |
| **Our Response** | **In implementing Temporary Use Bans we must adhere to the legislation under Section 76 of the Water Industry Act 1991, as amended by Section 36 of the Flood and Water Management Act 2010 and detailed in The Water Use (Temporary Bans) Order 2010. In the case of restrictions on using a hosepipe to clean boats, certain exceptions are allowed, and we would allow an exception 'To prevent or control the spread of non-native and/or invasive species' – this has been added to the list of exceptions in our DMP (Table 13). TUBs are linked to our Drought Trigger Zones, which relate to each of our company regions as this is the most effective way of monitoring and predicting a developing drought event. TUBs would normally be implemented universally across our Central region to ensure the most effective possible results and to avoid confusion for our customers, which could undermine the message of the need for water saving.** |
| 3.4.4 | HMWT are also concerned about the potential long lasting environmental impacts of Drought Permits and Drought Orders. Many of the sites identified by Affinity Water that would be subject to Drought Permits or Drought Orders are sites where abstraction has already been reduced due to the high ecological impacts it caused. HMWT recognises that by this stage in a drought the rivers where Drought Permits and Drought Orders are proposed will likely have already dried out entirely. It takes the aquatic environment 12 years to recover to pre-drought conditions following the end of a drought, by abstracting groundwater from these sites it will increase the amount of time it takes for the groundwater levels to recharge to a point at which rivers can begin to flow again therefore delaying the star of recovery of the aquatic environment. This potentially means Hertfordshire's Chalk Rivers will remain in a state of ecological drought conditions longer than necessary. |
| **Our Response** | **We acknowledge the potential for environmental impacts as a result of using some of our drought permit options. It should however be noted that in most cases the predominant impacts would already have been caused by the natural drought situation itself. As stated previously, the volumes potentially abstracted through our drought permits are very low in comparison to the** |

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| | **deficits in recharge being caused by the natural effects of low rainfall in each of the catchments. In the majority of the drought permit sites, the nearby river would be dry at the time of the implementation; hence the impact here will probably manifest as a slight delay in the recovery from the drought, but will not cause the drought effects.**<br><br>**We have carried out and continue to develop thorough assessments of potential impacts as part of our drought permit EAR work, and we have assessed the individual catchments and responses to past droughts. Investigation of macroinvertebrate data sets indicates that habitats tend to recover from drought events within 3 – 4 years. Our drought permits would be used for as short a time as possible, and will cease as soon as we are able to meet demand without them, to ensure that any potential effects are minimised.**<br><br>**We have committed to working closely with the EA before, during and after a drought event to ensure that impacts are monitored and, wherever possible, mitigated. We also continue to engage with HMWT and catchment partners to deliver projects which will benefit our local rivers.** |
| 3.4.5 | Finally HMWT would like to see the Drought Management Plan take into more consideration the impact drought will have on wider services that have a direct impact on the aquatic environment. For example during low flow and drought conditions there is a lower level of dilution of discharges from sewage treatment works. This means that in addition to the impacts of low flows drought will potentially have a negative impact on water quality within the catchment. |
| **Our Response** | **The remit of our DMP does not include mitigating the environmental impacts of a drought itself, however as part of the work developing our EARs we are looking at all potential impacts of our drought permits, including effects on dilution and water quality. As stated previously, we are working closely with the EA to fully investigate these potential impacts.** |

## 3.5 Chilterns Chalk Streams Project

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| | The Chilterns Chalk Streams Project welcomes the opportunity to respond to the above plan.<br><br>An initiative of the Chilterns Conservation Board, the Chilterns Chalk Streams Project (CCSP) was launched in 1997 in order to conserve and enhance all major chalk streams in the Chilterns Areas of Outstanding Natural Beauty (AONB), and to encourage enjoyment and understanding of them. The Project was set up in recognition of the importance of the area's chalk streams and the chronic low flows impacting on their long-term health. |
| 3.5.1 | The comments enclosed below refer specifically to Affinity Water's Central area only and address the potential impact on chalk streams covered by the CCSP, specifically the; Ver, Gade, Bulbourne, Chess and Hughenden Stream. This response represents the views of the CCSP Officer and not the Project's Partners necessarily and we welcome Affinity's strong environmental focus in the DMP and recognition of the importance of the chalk streams in its operational area. However, whilst understanding that the primary focus for Affinity is on maintenance of customer supply during drought scenarios, the Plan is not sufficiently robust to protect chalk streams from serious long term damage in the event of severe drought. |

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| | The fact that Affinity have set out in their plan the need to effectively reverse their past and current programmes of abstraction reduction in the event of medium to severe drought, illustrates clearly the urgent need for the development of new strategic water resources to ease pressure on the Chilterns chalk streams, in the context of increased demand through development and the potential future impacts of climate change. |
| **Our Response** | **Our drought permit sources have been carefully chosen based on our knowledge of known water availability during drought events, and we have added text to explain this in our DMP. We have ranked the drought permit sources and prioritised them according to likelihood of environmental impacts. We will continue to work closely with the EA to ensure that any impacts are monitored and mitigated, during and after a drought event. We would emphasise that the drought permit sources identified within our DMP would only be considered in the event that security of supply is threatened, and once all demand-side options had already been utilised.**<br><br>**We recognise the fact that there is a need for long term strategic water resource planning, particularly in the context of increasing populations and climate change, however the DMP is not a funding mechanism and the need for new infrastructure will be investigated as part of our dWRMP work.** |
| 3.5.2 | Affinity Water have rightly drawn praise from many quarters for its progressive approach to protecting the environment, as set out in its Business Plan, and for its sustainability reductions programme, in particular. The chalk streams in Affinity's Central area have suffered from low flows as a consequence of over abstraction for public supply for many decades. Affinity's Sustainability reduction programme is bringing about much a needed reduction in abstraction to some of the area's most heavily impacted rivers. However, in the event of a Drought Permit or Drought Order being introduced, the actions set out in the DMP would involve significant increases in abstraction, effectively leading to the reversal of Affinity's current and past abstraction reduction programme, at a time when these rivers will already under serious environmental stress. This would be extremely damaging possibly causing long term or irreversible ecological damage, which would compromise much of the work being carried out by Affinity currently under its sustainable reductions programme. This highlights the need for more stringent demand side actions to be put in place earlier in the drought plan and also for the urgent need for new sources of water to be developed in the long term. |
| **Our Response** | **As mentioned previously, our drought permits would only be used when absolutely necessary. In addition we would need to acquire permission from the Environment Agency before using any of these options, and we would work closely with them to ensure possible impacts are monitored and mitigated. It should be noted that drought permits are valid for up to six months, and are therefore relatively short term - this would not be a permanent reversal of our Sustainability Reduction Programme. Our Sustainability Reduction Programme will improve groundwater levels and these benefits accrued over the long term are unlikely to be reversed by a limited time of increased abstraction.** |
| 3.5.3 | There appears to be a mismatch between the proposed drought trigger zones and the conditions being experienced on the ground in chalk stream catchments. The Plan states on p108 that as Drought Zone 3 is reached and 'with drought conditions becoming more severe, chalk groundwater levels would be declining, resulting in the upper reaches of chalk streams drying out'. However, this year all six chalk streams in Affinity's Central area covered by the Project have either dried |

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| | over significant sections of their course or have been completely dry for some time before DTZ3 was reached. This suggests that the monitoring points used for drought triggers in the Central Region do not reflect accurately what is happening on the ground. A further example of this issue is that, groundwater levels in the Chess (Ashley Green) and Misbourne (Amersham Road) catchments are currently the lowest since records began (1988 and 1992 respectively), lower even than in 1997. In 1997, the plan states that we were on the threshold of DTZ4 and yet now when groundwater levels are lower we are only just entering DTZ3. |
| **Our Response** | **Our Drought Trigger Zones have been developed to monitor and predict an approaching drought across our three company regions, and this relates to a drought in water resources terms, as opposed to an environmental drought. It is not possible to have different triggers for different river catchments, and these triggers will manifest slightly differently within each catchment as a drought develops based on the individual catchment characteristics. We use our drought triggers primarily to monitor our water resource situation, so that we can plan and implement drought management actions at appropriate times in order to maintain security of supply. We have extensive monitoring networks across the catchments within our region so we can keep track of the effects of a drought and what this means on the ground for local rivers.** |

## 3.6 Canal and Rivers Trust

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| 3.6.1 | In terms of the draft Drought Plan, the Trusts has the following comments: Drought Permits and Drought Orders – Section 5.4.1 Central Region, (p84). Table 17 details a number of locations where Drought Permits and /or Drought Orders may be sought by Affinity Water. The Trust would expect to be consulted before any Drought Permit(s)/Order(s) were granted to ensure that navigation and the Trust's water resources were duly considered. |
| **Our Response** | **We would seek to actively engage with stakeholders before utilising our drought permit options, including the Canal and Rivers Trust. These plans for engagement will be incorporated into our Environmental Assessment Reports.** |

## 3.7 Hertfordshire County Council

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| 3.7.1 | Hertfordshire County Council welcomes the opportunity to respond to Affinity Water's draft Drought Management Plan and 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>In 2015, Hertfordshire County Council, along with its partners, commissioned The Hertfordshire Water Study 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.<br><br>The study provides an evidence base for the current round of local plans and a guide to future infrastructure needs beyond the current plan periods. This will |

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| | assist in ensuring that any barriers which might prevent the long-term delivery of housing growth are removed. The study will also form the basis for Hertfordshire submissions to the next round of water resource plans not only for Affinity Water, but also for Thames Water and Anglian Water which will be due for submission next year.<br><br>Affinity's proposed levels of service and how they seek to manage demand for water first before instigating supply side measures, is considered acceptable. Restrictions on use and the implementation of permits and drought order restrictions are necessary when water levels become low. Affinity has stated they are secure against a severe drought at least until the next AMP, when investment requirements will be reviewed. The Water Study in Hertfordshire has shown that water supply and wastewater will need investment after 2031 to sustain the predicted growth in the region, and this will be necessary when considering drought mitigation measures in the longer term. |
| **Our Response** | **We acknowledge Hertfordshire County Council's acceptance of our proposed levels of service. We are keen to continue to work with local authorities to ensure sustainable long term solutions to meeting demand with population growth in the area. All of the investment options needed to meet future demands will be addressed in our dWRMP.** |
| 3.7.2 | Hertfordshire County Council welcomes the acknowledgement of climate change, population increase and abstraction licence changes within the plan and the possible impacts for water supply. Trigger zones hope to mitigate demand with repairs to leakage, publicity, metering, and temporary bans reducing demand and in turn reducing the impact on the environment.<br><br>The draft drought management 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.<br><br>Affinity has stated they are working on pre-drought mitigation measures on a number of rivers in the AMP6 (2015 – 2020). River restoration is one way to enhance channel velocity (in periods of low levels) and create a variety of habitats and ecosystems which are more resilient to drought. Although, there is limited information within the plan on what would be done to help the environment recover once the drought is over? |
| **Our Response** | **We are committed to working with the Environment Agency to monitor and mitigate impacts of our drought management actions both during and after a drought event. Further information will be added to our EARs to give some examples of mitigation actions which could be carried out.** |
| 3.7.3 | 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. Have Affinity anticipated what development growth would do to the environment if extraction had to be induced sooner than expected over the next few years? |
| | **The use of our drought permit sources is only intended to meet shortages in** |

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| **Our Response** | **supply should a severe drought occur within the next five years, and our Environmental Assessment Reports are intended to investigate the possible environmental impacts of this. Increased future demand as a result of development is being considered as part of our dWRMP process - this plan will be published for consultation in 2018.** |
| 3.7.4 | Affinity has produced a new way to monitor supply. A water balance model has been built based on the forecasted available supply and demand under long term drought conditions for each Hydraulic Demand Zone (HDZ).The supply/demand forecast is carried out for each potential drought scenario so actions can be considered for each Drought Trigger Zone. Evidence uses an examination of actual drought conditions compared to the baseline Source Reliable Output assessment used in the water resources management plan. Has the modelling and data taken account of growth over the years? |
| **Our Response** | **Our DMP covers only the next 5 years, during which time we are confident we can meet demand within our current levels of service. Anticipated growth has been taken into account as part of the modelling and development of our dWRMP, which will be published for consultation in 2018.** |
| 3.7.5 | 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 at least 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. 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. Resilience needs to be planned for in the short and long term to ensure the interventions are secure. More demand due to growth will put more pressures on the system. In particular, will the five triggers zones be enough to support water supply with the increase in population over the coming years? |
| **Our Response** | **We are aware of the predicted increases in local population in our area, and this is considered as part of the development of our dWRMP - this has included stochastic modelling to model droughts worse than those in the historic record, to ensure we are able to manage events such as these in the future.** |
| 3.7.6 | 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. Understanding water supply needs up to 2051 has helped unlock some of the uncertainty over the timing of potential interventions. 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. |
| **Our Response** | **We are keen to continue working closely with local authorities both now and in the future, to ensure a sustainable and coordinated approach to long term water resource planning. We valued the work commissioned recently by Herts County Council and were pleased to contribute to the study on water supplies for Hertfordshire.** |

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| 3.7.7 | 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 caused by climatic changes 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 have on the environment? What will happen to the environment and habitats if they require more water in increasingly dry conditions and more people? |
| **Our Response** | **Long term planning options are identified and investigated through our dWRMP process. This has included assessment of associated environmental impacts through the development of HRA and SEA reports, and forecasts diminishing access to resources to sustain the water environment in light of climate change, as well as increasing demand from people in our operating area.**<br><br>**In terms of our supply options during a drought, our EARs include detailed investigations into the potential environmental impacts of using our drought permit options. Our DMP is an operational plan and is not intended to drive investment - this is addressed in our water resource planning process.** |
| 3.7.8 | 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. 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. Hertfordshire County Council and its partners look forward to participating in the next round of consultation for the Water Resources Management. |
| **Our Response** | **We recognise that long term water availability is a wider issue than our company area, and we will continue to work closely with our regulators, neighbouring water companies and regional partners, to investigate long term options for managing the supply and demand balance whilst minimising impacts on the environment. We contributed to the Herts Water Study carried out for HCC and considered the results when developing our dWRMP. We would welcome feedback during the public consultation stage of our dWRMP in 2018.** |

## 3.8 Kent County Council

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| 3.8.1 | KCC is pleased to see a number of improvements that have been incorporated within this draft DMP, in particular:<br>• The improvements to the Drought Trigger Zones that provide a more logical structure for the decisions and actions needed during an escalating drought.<br>• The scenario modelling for a range of droughts of different length, timing and severity that go beyond the recent historic records.<br>We are reassured that the WRZ7 is resilient to droughts of up to 5 years duration as clearly shown in Appendix J of the Technical Report. However, this is somewhat undermined by two seemingly contradictory statements within the main report:<br>On page 58: under the heading of 'Results without transfers and without drought management' it is stated that 'In WRZ7 (Dour) there is sensitivity to only the most severe droughts that are significantly worse than those in the historic record'. But in the conclusions on page 62 it is stated that WRZ7 is one of '...the most vulnerable to drought owing to the magnitude of WRZ demand relative to WRZ supplies.' KCC seeks clarity on this point. |
| **Our Response** | **WRZ7 remains potentially vulnerable to supply issues, due to the responsive nature of the chalk aquifer in the region. Vulnerability to drought has however been reduced following the reductions in demand that occurred following our intensive metering programme. This means that the average demand in the region relative to supply is manageable under average groundwater level conditions. It is only during peak demand times when groundwater levels are low that the WRZ is considered sensitive, which is why the section states that there is sensitivity to only the most severe droughts. We have added text to Section 4.5 to clarify this.** |
| 3.8.2 | KCC recognises that the relative timing of the publication of the DMP and WRMP is not within AW's control, however this does appear to raise issues for WRZ7: Housing growth within the area covered by WRZ7 is increading rapidly and the Kent Water for Sustainable Growth Study shows that AW's current Water Resources Management Plan (WRMP 2014) only accounts for some 27% of the housing growth now expected to be in place by 2031. If, as stated on page 62 of the draft DMP, the magnitude of demand relative to supplies is so critical for drought planning within WRZ7, then we have to question the validity of the draft DMP in the absence of a WRMP that includes up to date information on future balance of water demand and supply. It would seem better to have a DMP that is published along with, or shortly after, the WRMP. However, in the absence of that, KCC requests some further information on the sensitivity of the results of the draft DMP to the demand and supply balance in WRZ7. |
| **Our Response** | **We are taking into account analysis work carried out as part of the dWRMP in validating the modelling done for our DMP, and we are confident that we are resilient to droughts which may occur within the next 5 years, factoring in some short term housing growth. The DMP is an operational plan which enables us to put short term actions into place as a drought progresses. The dWRMP is a strategic plan which will drive the planning and development of new infrastructure needed to meet increasing demand over the long term, and this will in turn facilitate the development of our next DMP. We would welcome comments on our dWRMP when it is published in 2018.** |

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| 3.8.3 | Kent is served by 5 water companies, each is publishing its draft DMP at a different time and AW is the first to do so. This makes it difficult to comment on the issue of imports from neighbouring companies that would be available in a drought situation as these cannot be checked against the draft DPs of those companies. We therefore have to assume that the Environment Agency (EA) will provide the strategic oversight to address such interdependencies between the companies' draft DMPs. |
| **Our Response** | **We work closely with both the Environment Agency and neighbouring water companies to ensure consistency between our drought plans.** |
| 3.8.4 | Figure 2 on page 13 illustrates the overlap and linkage between the DMP and the company's Emergency Plan however the latter is not available on the AW website. KCC also has emergency planning responsibilities and is a member of the Kent Resilience Forum (KRF). The KRF also has a drought plan and this is somewhat broader in its scope than the water companies' DMPs. We observe that Section 1.3.2.1 of the EA document 'Drought response: Our framework for England' states that "The water companies will communicate in advance with local councils, emergency services and local resilience forums about how best this is co-ordinated in a major drought emergency. This level of detail will not be in their drought plans. |
| **Our Response** | **Noted. We would indeed work closely with our regulators, neighbouring water companies, local authorities, emergency services and local resilience forums during a drought event to ensure an efficient and coordinated approach to managing the drought. We are currently working with the National Drought Group to manage the dry weather conditions. We are now extending our dialogue to local resilience groups and will engage with Kent Resilience Forum.** |
| 3.8.5 | KCC notes the details of the potential Drought Permits that AW would seek to implement within Drought Trigger Zone 4, the Environmental Assessments that have been undertaken on these, and the statement in Appendix 5 that "No other activities are expected to be impacted on. The impacts on other permitted rights of abstraction are likely to be negligible". We have considered the locations of nearby Special Areas of Conservation, Sites of Special Scientific Interest and Local Nature Reserves in relation to the River Dour and, given that they are all at significantly higher elevation than the river corridor, we concur that impacts from minor changes to low flows in the River Dour are most unlikely to affect these sites. |
| **Our Response** | **Noted. These sites have also been considered within our EAR for the Dour catchment drought permit sites.** |

## 3.9 Berkhamsted Town Council

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| 3.9.1 | Having reviewed the consultation papers, Affinity Water is obviously preparing very thoroughly for various drought scenarios demonstrating that it is a responsible authority. Berkhamsted is situated on the edge of The Chilterns where the rare chalk streams can often fall to very low levels during droughts. The Town Council would ask that extraction from such water sources be kept to an absolute minimum in order to protect their unique and much valued ecosystems. |
| **Our Response** | **Noted. We agree that the chalk streams in our area should be protected as much as possible. The decision to abstract from our drought permit sources would not be taken lightly, and this would only happen after all demand management options have been utilised. By this stage the drought** |

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| | **conditions would be severe and local rivers would already have been affected by the lack of rainfall and low groundwater levels.** |

## 3.10 Manningtree Town Council

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| 3.10.1 | Thank you for asking Manningtree Town Council to review your drought management plan. We have no comments to make other than that we are pleased to know that you have a plan should there be a drought. |
| **Our Response** | **Noted.** |

## 3.11 Chesham Town Council

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| 3.11.1 | We welcome this comprehensive and clear set of plans for managing the public water supply in drought conditions. The substantial increase in demand for water during dry years strongly supports Affinity Water's strong emphasis on managing demand for water first before instigating supply-side measures. We are pleased to see Affinity Water's commitment to reducing leakage upon entering Drought Zone 3, although we would welcome an increase in leakage activity upon entering Drought Zone 2 to start tackling more leakage earlier during a drought. It is reassuring that Affinity Water believes that even during a drought as severe as that of 1976, there would be no need for an emergency drought order and that stand pipes and rota cuts would only be used in a civil emergency. |
| **Our Response** | **We appreciate Chesham Town Council's comments in support of our DMP. We acknowledge your request for increased leakage reduction in Drought Trigger Zone (DTZ) 2, and confirm this is always considered first in DTZ 2, to compliment our already ambitious business-as-usual leakage programme.** |
| 3.11.2 | Drought Trigger Zone 3 is said to correspond to a 1 in 10 year drought event (p. 32), but includes the groundwater levels recorded during 1997, which is described later in the document (p. 44) as a 1 in 200 year return event, so we are not clear on what Zone 3 corresponds to. |
| **Our Response** | **We have carried out further analysis on return periods in relation to historic droughts in our supply area, and the reference to the 1997 drought as a 1 in 200 year event actually relates to the severity of the drought as it was experienced nationally. This sentence in our DMP is therefore misleading and has been removed.** |
| 3.11.3 | The conditions experienced on the Upper Chess do not seem to fit well with the Drought Trigger Zones; which is a cause for concern as it may mean that action is not being taken rapidly enough in this catchment. The upper reaches of the Chess (below the traditionally ephemeral stretches) were dry in Chesham for several months in 2016 and 2017 before we saw an increase in communication with customers and stakeholders to increase awareness of drought (an activity associated with Drought Zone Two). Furthermore, on page 108 it is stated that 'After reaching Drought Zone 3 and with drought conditions becoming more severe, chalk groundwater levels would be declining, resulting in the upper reaches of chalk streams drying out', but the Chess upper reaches are dry long before Zone 3 is reached. This would suggest that the groundwater monitoring points used for the Central Region do not reflect what is happening in the Chess |

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| | catchment. |
| **Our Response** | **Our drought trigger zones have been developed to monitor and predict an approaching drought across our three company regions. It is not practicable to have different triggers for different river catchments, and we are aware that these triggers will manifest slightly differently within each catchment as a drought develops based on the individual catchment characteristics. We use our drought triggers primarily to monitor our overall water resource situation, so that we can plan and implement drought management actions at appropriate times, at regional/company level.** |
| 3.11.4 | This is further reinforced by Table 19 on page 93 which looks at the potential environmental impacts from supply-side drought actions (which start in Zone 2). One of the examples of potential impact is 'prolonged period of no flow, resulting in potential for (i) loss of aquatic macrophytes and invasion of terrestrial plants, (ii) drying of river bed and loss of habitat for aquatic fauna and (iii) fish kills'. All three of these events have occurred on the River Chess before Drought Zone Two is reached. What can be done about this, as it would be beneficial to encourage customers to start reducing their water demand far earlier to help protect the Chess? Could additional monitoring in the local area help? There are local voluntary groups who could work in partnership with Affinity Water and the Environment Agency to achieve additional monitoring; as has been done in the ongoing Low Flows Alleviation Study on the Upper Chess. |
| **Our Response** | **We do not have any specific supply side drought management actions located within the River Chess catchment, and so the potential environmental impacts identified in Table 19 would not relate to the Chess. We do have a widespread network of environmental monitoring across our region, including the Chess.**<br><br>**We are generally continuing with our dedicated Water Savings Programme which includes metering and free water saving devices, to encourage customers to reduce their usage in the long term, to reduce environmental effects of abstraction. Short term low flow conditions experienced in a drought are predominantly caused by the absence of rainfall, rather than abstraction, and demand side measures such as restrictions will only have negligible benefits for river flows during a drought.** |
| 3.11.5 | Section 3.3.2 looks at the relationship between rainfall, recharge and soil moisture deficit. Is this relationship changing with increasing urbanisation, or is the level of change in infiltration insignificant in terms of its impact on water resources? If it is a significant change, is the change taken into account when looking at this relationship over time? |
| **Our Response** | **There is a relationship between recharge and numerous factors including land use and rainfall, and there are potential long term impacts associated with increasing urbanisation. Through our extensive monitoring networks we are able to keep track of these factors and continually review our understanding of the relationship between them. Any changes in the relationship will be factored into our calculations for drought forecasting and water resource management planning, and if necessary changes will be explained in our annual update of the DMP and periodic publication of our WRMP.** |
| 3.11.6 | We appreciate that the Statutory Exceptions for Temporary Use Bans are not set by Affinity Water, but to have an exception for filling or maintaining a domestic swimming or paddling pool when done using a hand-held container seems |

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| | unnecessary. This could still result in significant, non-essential water use, especially when public pools would still be open as normal. |
| **Our Response** | **We note your concern and will share that should there be a further opportunity to amend regulatory guidance. Meanwhile we must adhere to legislation when implementing Temporary Use Bans and the associated Statutory Exceptions. It should be noted that filling a domestic swimming or paddling pool using a hand-held container would require significant effort in order to use the same amount of water as would be used by doing so with a hosepipe, and this in itself should deter over-use. In addition, prior to and at the time of introducing restrictions we would be proactively encouraging water efficiency, and helping customers to understand that we are in a drought situation. This should enable the public to understand the implications of wasting water and the seriousness of the situation.** |
| 3.11.7 | We support Affinity Water's decision to implement Temporary Use Bans on all 11 activities simultaneously, as this will be the clearest way of putting the TUB into place and will cause least confusion to customers. |
| **Our Response** | **Noted.** |
| 3.11.8 | We are concerned that abstraction constraints can be lifted and that sustainability reduction sources can be re-commissioned during severe drought scenarios. Whilst we appreciate these options will be used only when droughts worsen, this will apply additional pressures to environmentally-sensitive areas that will already be suffering from the drought conditions. Whilst the Chess is not directly affected by this, increased abstraction from the Misbourne catchment might have the potential to negatively impact on the groundwater levels in the Chess catchment. |
| **Our Response** | **Results from field investigations and groundwater modelling suggest that interaction between the Misbourne and Chess catchments is extremely limited, and any perturbation in the Misbourne catchment is unlikely to result in impacts on the Chess. Drought permits for abstraction from sites where sustainability reductions have taken place would only be implemented after demand side measures have been implemented and rivers will already be largely dry due to the extended low rainfall. Further detrimental impacts resulting from our drought permits will likely manifest as a possible delay in recovery from drought, but this will be minor compared to the effects of the drought itself. The extent of impacts from our actions are fully investigated in the environmental assessment reports associated with each option.** |
| 3.11.9 | Table 16 looks at the risks associated with supply side actions in all of the Drought Zones. We are concerned about the environmental assessment of the risk associated with the 'Additional Outputs' option for Zone 3. In the Summary of Possible Environmental Impacts, it says that the impacts will be low as abstractions will remain within licensed limits. However, the Chess catchment is categorised as 'over-licensed'. This would indicate that increasing abstraction in our catchment would cause environmental damage and feel that additional monitoring would be required to assess this risk. |
| **Our Response** | **The impacts of current abstraction in the Chess catchment are under investigation, and we will continue to work with the EA and key stakeholders to assess and manage these. We do not have any drought permit sources identified for the Chess catchment, and so the implications of this are not within the remit of our DMP.** |

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| 3.11.10 | We are pleased to note on page 90 that the aim of the plan is to manage and, where possible, improve the water resource position during drought to make water available to customers whilst minimising impact on the environment. |
| Our Response | **Noted.** |
| 3.11.11 | The information on page 102 suggests that additional monitoring isn't undertaken until Drought Zone 4 with the application for a drought permit or drought order. Is this correct? As a number of the actions that could be implemented prior to applying for a drought permit or order could have an environmental impact (e.g. additional outputs within a licence), it would seem prudent to increase monitoring for these actions, too. |
| **Our Response** | **As detailed in Appendix 6 of our DMP, environmental drought monitoring begins in Drought Trigger Zone 2, and increases in frequency from Drought Trigger Zone 3 onwards. This monitoring is focused around our drought permit sources, as any other increases in abstraction within licensed volumes are likely to have negligible impacts.** |
| 3.11.12 | It is very positive that, in light of experience from the 2012 drought, direct communications with customers will be favoured for a future drought. We believe that this will be more effective than relying heavily on local radio and newspapers. |
| **Our Response** | **Noted.** |

## 3.12 Watford Borough Council

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| 3.12.1 | Thank you for providing Watford Borough Council with the opportunity to comment on the Draft Drought Management Plan. At this time Watford Borough Council does not wish to submit any comments on the Management Plan itself, however, the Council recognises the importance of water management, including potential drought and flood issues, particularly given the water stress in the wider south-east area and is supportive of a strategy being in place should there be a future drought event. |
| **Our Response** | **Noted.** |

## 3.13 Epping Upland Parish Council

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| 3.13.1 | I refer to the consultation for the above for which please see below this Council's comments - concerns that the water table is much lower than it used to be. By using water in the environment this would make it even lower with the consequent effect on streams, ponds and the local environment. |
| **Our Response** | **We are aware that groundwater levels undergo long term fluctuations, and we have monitoring networks in place to monitor these. As can be seen in Figures 19 and 20 in our DMP, groundwater levels in our area are not lower than they have been historically. If a long term decline in average groundwater levels does emerge, we would factor this into our drought and water resource planning accordingly.** |

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| | **Please see our response to 3.4.4 also.** |
| 3.13.2 | Would suggest that consideration be given to increasing the supply. Further concern as it was understood that Affinity had said that it could see no problem in supplying the increased housing and business in the Epping Forest District Local Plan. |
| **Our Response** | **As part of our demand forecast we continue to review local growth plans. Long term plans to meet supply and demand balance with increasing populations are being dealt with as part of our dWRMP process. This will include options for increasing supply in the long term coupled with further demand management measures. The dWRMP will be published for consultation in early 2018, and we would welcome further comments on that Plan.** |

## 3.14 Member of Public Respondent 1

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| 3.14.1 | I note the comments in the draft plan "that previous investigations have identified a link between BOWB abstraction and flow in the River Ver. Therefore, we will only submit a drought permit application for this site, when we are facing unprecedented levels of groundwater availability." However, I consider that the extraction of water from the sources related to the River Ver should not be permitted, as Affinity Water have not been able to estimate the likely impact and should there be unprecedented levels of groundwater availability it is likely that the river will already be adversely affected. |
| **Our Response** | **Our drought permit sources have been carefully chosen based on our knowledge of known water availability during drought events, and we have added text to clarify this in our DMP. We have ranked the drought permit sources and prioritised them according to likelihood of environmental impacts. It should be noted that at the stage when we would consider using drought permits, the Ver would already be significantly affected by the drought itself, and large sections would likely be dry. Additional impacts from our abstractions would be relatively minor in comparison. We will continue to work closely with the EA to ensure that any impacts are monitored and mitigated, during and after a drought event.** |
| 3.14.2 | The actions in the plan are almost entirely directed at the domestic user. The explanations in the plan should be expanded to include consideration of the commercial user, if only to explain to the domestic user the approach being taken. In particular, consideration should be given the restriction or prohibition of water use by Golf Courses and other high users of water for leisure purposes. Consumers are irritated when they are told to stop using hose pipes if they then see private golf courses using irrigators to disperse thousands of gallons of water. Even if the course has their own source, the impact on groundwater levels should be accounted for and restrictions implemented. The plan does state that the definition of a 'garden' has been "widened to include: a park; gardens open to the public; a lawn; a grass verge; an area of grass used for sport or recreation; an allotment garden; any area of an allotment used for non-commercial purposes; any other green space. It does not include: agricultural land; other land used in the course of a business for the purposes of growing, for sale or commercial use, any crops, fruit, vegetables or other plants; land used for the purposes of a National Plant Collection; a temporary garden or flower display; plants (including plant organs, seeds, crops and trees) which are in an outdoor pot or in the ground, |

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| | under cover." The use of the term garden should be changed so that this is clearer to the public. There also needs to be an explanation of what an area of grass used for sport or recreation includes.<br><br>However, the plan also notes that "an area of grass used for sport or recreation is included in the definition of a garden. This exception would only apply to the active strip/playing area, and not the entire ground. The remaining ground can still be watered using other methods". This would therefore still permit golf courses to water large areas. |
| **Our Response** | **We supported the inclusion of sports turf as a garden at the last amendment of regulations, as we are of the opinion that these should be subject to TUBs in the same way as domestic gardens. We must adhere to legislation when implementing temporary use bans and statutory exceptions. It should be noted that at the time of introducing restrictions we would be proactively encouraging water efficiency, and helping customers to understand the fact that we are in a drought situation - this would also extend to non-household retailers and their customers. An area of grass used for sport or recreation would include all sports grounds such as cricket pitches or football fields, and includes golf courses. So in our DMP these would be covered by TUB restrictions, where they irrigate from the public water supply network. Many golf courses have their own private water supplies - and these would be regulated by the Environment Agency, as we would not have powers to restrict these.** |

## 3.15 Member of Public Respondent 2

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| 3.15.1 | I would like to request that Affinity Water is required to reduce abstraction from the Misbourne River. If they did this, the river would run continuously, with all the attendant environmental benefits.<br><br>For too long has too much water been abstracted to the detriment of wildlife, the environment and the people of the Misbourne Valley |
| **Our Response** | **We are continuing to deliver our committed sustainability reductions, with an additional 42 Ml/d reductions to be implemented by 2018 and further reductions in the future. We are also reviewing our environmental programmes with the Environment Agency to bring rivers in our area to good ecological status. The decision to abstract from our drought permit sources would not be taken lightly. Additional abstraction under a drought permit or order would only be considered after all demand management options have been utilised, and this would need permission from the Environment Agency (Drought Permits) or Secretary of State (Drought Orders).**<br><br>**All the water abstracted from borehole sources in the Misbourne catchment is used to meet demand of local residents and businesses. Affinity Water significantly reduced abstraction in the Misbourne valley in 1997 and increased imports to that water resource zone (WRZ) from other WRZs, to replace the water supplies left in the environment. Since that time we have been monitoring the benefits to the catchment. Winterbourne rivers such as the Misbourne will always dry up to some extent during a drought, as the dominant short term effect is lack of rainfall.** |

## 3.16 Stakeholder Deliberative Forum Event Feedback

The following table provides summarised views of the stakeholders who attended the deliberative forum event we hosted. Attendees were given the chance to discuss and ask questions on the plan, and were also encouraged to submit their representations directly to Defra for formal consideration.

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| 3.16.1 | <u>Temporary Use Bans - Impacts on Customers</u><br><br>Stakeholders mentioned personal impacts of a temporary use ban, including the impacts on gardens, ponds and allotments and questioned who these would matter to. They commented that the impacts felt would depend on the time frame of the restrictions and on how individuals feel about the environment. They also discussed how the temporary use bans would be implemented and policed questioned how this may impact the community.<br><br>A representative from Colne Valley Fisheries commented on the restriction on cleaning boats included during a temporary use ban, and commented that it is difficult to clean a boat without a hosepipe and that the worst-case scenario could lead to boats transferring species between waters. |
| **Our Response** | **Temporary Use Bans would be implemented as per the legislation under Section 76 of the Water Industry Act 1991, as amended by Section 36 of the Flood and Water Management Act 2010 and detailed in The Water Use (Temporary Bans) Order 2010. Further information is provided in Section 5.2.3 in our DMP. In the case of restrictions on using a hosepipe to clean boats, certain exceptions are allowed, and we would allow an exception 'To prevent or control the spread of non-native and/or invasive species' – this exception has been included in our DMP.** |
| 3.16.2 | <u>Temporary Use Bans - Communications</u><br><br>A few stakeholders discussed communication needs before and during a temporary use ban, including letting customers know about water shortage in advance, and letting customers know approximately how long and restrictions would be in place for.<br><br>A representative from the Herts and Middlesex Wildlife Trust commented that they were disappointed by the speed of response to a recent water shortage. They said that even though people could see that the rivers were dry, Affinity Water were not issuing communications about water shortages. A representative from Colne Valley Fisheries acknowledged that even though water abstraction does not have a direct impact of the water levels in rivers, they suggested that in a customer's mind a dry river is associated with a drought, and Affinity Water could be blamed. Participants including a representative from the Middlesex Wildlife Trust suggested that Affinity Water could do more to communicate that they are monitoring the situation. Stakeholders agreed that perception was important and that water companies need to be seen to be managing supply and demand.<br><br>A few participants felt that the list of restrictions during a temporary use ban is too generalised and that it does not take into account the different situations and possible impacts of a drought on a more gradual basis. For example, a representative from Colne Valley Fisheries asked why in a time of water shortage, before a temporary use ban is issued, there is not a ban on watering grass in summer. He expressed concern that Affinity Water are introducing restrictions too late waiting for the 'trip motion' and that more gradual controls should be in place sooner. They commented that the measures in place were reactive as opposed to |

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| | anticipating and avoiding crisis. Participants discussed whether earlier triggers were necessary, although a representative from CC Water felt that greater coordination with other water companies was needed, as opposed to earlier triggers. |
| **Our Response** | **Affinity Water already engage with school children each year (29,376 between January and September 2017), providing curriculum linked lessons about where our water comes from. We also continuously run a Water Saving Programme (not just in any of the drought zones) where we promote efficient use of water and distribute free water saving devices.**<br><br>**We continuously monitor our water resources and we were aware of the developing dry weather situation from 2016. We have been following our DMP and formed our Drought Management Group (DMP) in January 2017. The group has focused on means of effective communications from the earliest stage. Information on the water resource situation has been included on our website since February 2017. We have been sending out informative monthly emails to stakeholders (including HMWT) since May 2017. This update includes information on water resources, rainfall, Met Office forecasts, as well as what we have been doing to deal with the situation. We commenced our full publicity campaign in July. This included a mail drop to all customers, and information advertised on radio stations, buses, company vehicles and local magazines. We have also partnered with "Hubbub" to launch an online water saving campaign.**<br><br>**We work in partnership with the EA and Defra to ensure that dry weather communications are sent out early on in a developing dry weather situation, and that these messages are consistent. We also communicate regularly with regulators and neighbouring water companies to co-ordinate restrictions and ensure effectiveness. When implementing temporary use bans we adhere to the legislation which states which activities are restricted.** |
| 3.16.3 | <u>Temporary Use Bans - Supply and demand</u><br><br>A representative from CC Water commented that there should be a strategic coordinated effort to address supply at a time of water shortage. They agreed with the arguments for a behaviour change strategy but suggested that this should start with suppliers, for example by improving leakage issues. |
| **Our Response** | **We will continue to work closely with our regulators, neighbouring water companies and regional partners, including WRE and WRSE, to investigate long term options for managing the supply and demand balance whilst minimising impacts on the environment. This includes further reductions in leakage. These matters are addressed in our WMRP19. The WRSE water companies also work closely together to co-ordinate responses to drought, as occurred in 2006 and 2012.** |
| 3.16.4 | <u>Drought orders - primary impacts</u><br><br>The primary impacts that stakeholders identified included immediate impacts on businesses, such as builders using water for dust suppression, yet they noted that the impacts would vary depending on the size of the company. |
| **Our Response** | **When implementing drought orders we would adhere to relevant legislation, and we would allow exemptions in cases such as dust suppression for health and safety reasons.** |
| 3.16.5 | <u>Drought orders - secondary impacts</u> |

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| | The secondary impacts discussed by stakeholders included consequences such as effects on public spaces, for example, brown grass, dirty buses and congestion. One stakeholder commented that complaints about this would not be directed to Affinity Water, but to public sector organisations. Other secondary impacts considered included an increased sewer concentration which they said could affect the rivers and lead to long-term issues and a lack of water available for irrigation. A representative from Sustainable Letchworth asked whether work has been done to model water usage for customers along with secondary customers (for example 'customer's customers').<br><br>A couple of stakeholders commented that these effects could lead to a decline in commercial confidence in the water sector, especially if there were more temporary use bans and drought orders, which could then effect confidence in investment and lead to a reduction in funding for infrastructure. |
| **Our Response** | **We understand the potential secondary impacts associated with drought orders, and these would only be implemented under a situation of serious water shortage. The limited dilution in the sewers is taken into consideration from the sewage companies so that the quality of the discharged water is maintained within the discharge consent limits. The return periods of the TUBs and drought orders are driven by many factors including Climate Change and agreed levels of service based on the customers' willingness to pay.** |
| 3.16.6 | <u>Drought permits - environmental impacts</u><br><br>Stakeholders discussed that one impact of a drought permit may mean that people will not be able to engage with the environment if the rivers run dry, which could lead to viewing the environment as 'poor quality' and could in turn lead to vandalism.<br><br>A representative from Sustainable Letchworth commented that if they were the Environment Agency and a water company asked them for a drought permit they would not grant it as it would affect the environment. They commented that Affinity Water have comprehensive plans for drought management, but there is not one that does not affect the environment. They called for a plan that would not lead to environmental damage in any case.<br><br>One participant representing the Customer Challenge Group mentioned that it was important to note that people are part of the environment, and that the priority had to be mitigating impacts on individuals. |
| **Our Response** | **Our drought permits would only be used if absolutely necessary to meet supply, and the decision to use them would not be taken lightly. We would only be utilised after all demand-side drought management actions have been used, and if the water resource situation continues to worsen. In the majority of the drought permit sites, the nearby river would be dry at the time of the implementation; hence the impact here will probably manifest as a slight delay in the recovery from the drought, but will not cause the drought effects. We will continue to work closely with the EA to ensure that environmental impacts are monitored, understood and mitigated.** |
| 3.16.7 | <u>Levels of service - pricing information</u><br><br>A representative from Hertfordshire County Council commented that they had not been given enough pricing information to comment on the acceptability of the levels of service. For example, they were unaware of what the cost is of not introducing a temporary use ban and what the cost would be for greater |

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| | environmental resilience. |
| **Our Response** | **All cost implications of drought management actions are addressed in our dWRMP process. This plan will be published for consultation in early 2018.** |
| 3.16.8 | <u>Levels of service - new pricing model</u><br><br>Stakeholders discussed pricing options to influence behaviour and reduce water use. They had differing views on suitable solutions. A representative from Sustainable Letchworth commented on how cheap water is and suggested a new pricing model should involve a higher rate when people exceed regular water consumption levels, however a representative from (CC Water) commented that there is an affordability issue which this could exacerbate. They also mentioned that the suggestions to amend pricing to reflect use is already happening with tariffs and metering.<br><br>A representative from Colne Valley Fisheries commented that the higher than average water usage in the region is indication that the pricing could be increased, particularly for the vast majority of Affinity Water customers. They suggested increasing the price for those who can afford it would help to offset the bills for those who cannot. |
| **Our Response** | **As stated above, all cost implications of drought management actions are addressed in our dWRMP process. This plan will be published for consultation in early 2018.** |
| 3.16.9 | <u>Levels of service – communications</u><br><br>Participants gave suggestions about communication strategies to effect behavioural change to reduce water usage generally and during restrictions. A representative from Herts County Council queried whether temporary use bans should be more regular to increase awareness, whereas a representative from CC Water felt that this would not be acceptable to customers and others commented that this may make people 'immune' and could reduce compliance as the sense of urgency would be reduced. |
| **Our Response** | **Affinity Water already engage with school children each year (29,376 between January and September 2017), providing curriculum linked lessons about where our water comes from. We also continuously run a Water Saving Programme (not just in any of the drought zones) where we promote efficient use of water and distribute free water saving devices.**<br><br>**We continuously monitor our water resources and we were aware of the developing dry weather situation from 2016. We have been following our DMP and formed our Drought Management Group (DMP) in January 2017. The group has focused on means of effective communications from the earliest stage. Information on the water resource situation has been included on our website since February 2017. We have been sending out informative monthly emails to stakeholders (including HMWT) since May 2017. This update includes information on water resources, rainfall, Met Office forecasts, as well as what we have been doing to deal with the situation. We commenced our full publicity campaign in July. This included a mail drop to all customers, and information advertised on radio stations, buses, company vehicles and local magazines. We have also partnered with "Hubbub" to launch an online water saving campaign.**<br><br>**We work in partnership with the EA and Defra to ensure that dry weather communications are sent out early on in a developing dry weather situation,** |

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| | **and that these messages are consistent. We also communicate regularly with regulators and neighbouring water companies to co-ordinate restrictions and ensure effectiveness. When implementing temporary use bans we adhere to the legislation which states which activities are restricted.** |
| 3.16.10 | Levels of service - onus of responsibility<br><br>Participants, including a representative from Herts County Council commented that there needed to be national leadership from government on droughts and that it should not just be Affinity Water on its own. |
| **Our Response** | **We regularly discuss water resources with other water companies as part of the WRSE and WRE regional groups that feed into our dWRMP and links to our DMP. We agree with this comment and intend to work towards a more coordinated approach to drought management in the region.** |
| 3.16.11 | <u>Levels of service - behaviour change</u><br><br>Participants suggested that marketing about water saving needed to be better targeted and a softer approach could be implemented, a representative from CC Water argued that to influence behaviour change a more segmented marketing strategy on a national level would be required, which would also need to involve government, local authorities and other organisations. A representative from the Customer Challenge Group suggested that leading customer behaviour change would require more incentive. |
| **Our Response** | **As stated above, we regularly discuss water resources with other water companies as part of the WRSE and WRE regional groups that feed into our dWRMP and links to our DMP. We agree with this comment and intend to work towards a more coordinated approach to drought management in the region.** |
| 3.16.12 | <u>Levels of service - non-household retailers</u><br><br>A representative from CC Water suggested that Affinity Water consult with the non-household retailers about their drought management plan, which should involve a discussion about drought restrictions as well as preventative measures before a drought. They suggested that retailers will need more long-term planning than customers when it comes to managing a drought, particularly small businesses who need fair warning to adapt and plan. A representative from Colne Valley Fisheries added that the communication strategy for businesses must be different than that for customers, as the employees who pay the water bills are often not the same people who make strategic decisions and can influence change. |
| **Our Response** | **We sent out engagement material to non-household retailers which we supply, and they and their customers were given the opportunity to comment on our plan. We have a communication strategy in place for non-household customers during a drought event, which involves communication with retailers via the Wholesale Operations Service Desk.** |
| 3.16.13 | <u>Environment</u><br><br>A representative from Sustainable Letchworth commented that there should be no harmful impact on the environment, and to mitigate this, Affinity Water should have more of an emphasis on collection and storage. |
| **Our Response** | **More long term options for maintaining our supply demand balance will be addressed through our dWRMP process.** |

## 3.17 Customer Deliberative Forum Event Feedback

Full details of the methods and outcomes of the customer deliberative forum event can be found in the report appended to the DMP. The high level outcomes of this event are summarised below.

At the end of the event the attendees were asked about whether they found our current level of service for Temporary Use Bans to be acceptable (1 in 10 years).

Out of 33 customers:

- 19 said they found this level of service acceptable
- 3 said they would prefer less frequent TUBs, i.e. a 1 in 15 level of service
- 11 said they would accept more frequent TUBs, i.e. a 1 in 5 level of service

Attendees were then asked about whether they found our current level of service for Drought Orders to be acceptable (1 in 40 years).

Out of 33 customers:

- 27 said they found this level of service acceptable
- 2 said they would prefer less frequent TUBs, i.e. a 1 in 50 level of service
- 2 said they would accept more frequent TUBs, i.e. a 1 in 30 level of service
- 1 said it depends on the business
- 1 did not comment

Attendees were also asked about whether they found our current level of service for drought permits to be acceptable (>1 in 40 years).

Out of 33 customers:

- 29 said they found this level of service acceptable
- 2 said they would prefer less frequent drought permits
- 2 did not comment

# 4 Appendices

- Representations received from stakeholders.
- OPM report detailing the methods and outcomes of the two deliberative forum events.

# Representation on Affinity Water's draft drought plan

29 September 2017

We are the Environment Agency. We protect and improve the environment.

Acting to reduce the impacts of a changing climate on people and wildlife is at the heart of everything we do.

We reduce the risks to people, properties and businesses from flooding and coastal erosion.

We protect and improve the quality of water, making sure there is enough for people, businesses, agriculture and the environment. Our work helps to ensure people can enjoy the water environment through angling and navigation.

We look after land quality, promote sustainable land management and help protect and enhance wildlife habitats. And we work closely with businesses to help them comply with environmental regulations.

We can't do this alone. We work with government, local councils, businesses, civil society groups and communities to make our environment a better place for people and wildlife.

Published by:

Environment Agency
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Bristol BS1 5AH
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Further copies of this report are available from our publications catalogue:
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# Contents

# 1. Our summary of Affinity Water's draft drought plan

## 1.1 Introduction

This is the Environment Agency's review of Affinity Water's draft drought plan. We have a statutory duty to manage water resources in England and Wales. We aim to make sure that there is sufficient water for society, the economy and the environment in a drought. We are also a statutory consultee in the water company drought plan (WCDP) process and provide advice to Government on the content of these plans. We have assessed the plan against the relevant legislation[1], the WCDP guideline[2] and supplementary technical information[3].

A water company drought plan sets out the short-term operational actions that a company will take in a range of drought situations to maintain public water supplies without causing unnecessary risk or damage to the environment. These plans should be flexible, consider the needs of customers and other stakeholders, and be aligned to guidance. In this round of drought plans, we have also asked water companies to consider the resilience of their plans to more extreme drought events, which may indicate the need for resilience options in their water resources management plans.

The document is split into four sections. These are:

- **Section 1:** Summary of our view of Affinity Water's draft drought plan.
- **Section 2:** Reviews compliance with the Drought Plan (England) Direction 2016
- **Section 3:** Sets out our key recommendations for changes to the draft drought plan
- **Section 4:** Outlines further improvements that we consider should be made.

## 1.2 Summary

We recommend that Affinity Water revises some parts of its draft drought plan by providing worked timelines outlining drought management activities under a range of drought scenarios, both experienced and synthetic. We also recommend that the company provides further information detailing which drought permits are likely (and are therefore application ready) whilst committing to a timetable of work for environmental impact reports, monitoring plans and mitigation for outstanding drought permits.

[1] Drought Plan (England) Direction 2016
[2] How to write and publish a drought plan https://www.gov.uk/government/collections/how-to-write-and-publish-a-drought-plan
[3] Supplementary information provided to water companies on Defra's Huddle website

# 2. Compliance with relevant legislation

This section contains our assessment of whether we consider Affinity Water has complied with the Drought Plan (England) Direction 2016.

In this assessment, we consider that a Direction has not been complied with where the draft plan does not meet the principles of the Direction.

## 2.1 The Drought Plan (England) Direction 2016

Section 3 of the Drought Plan (England) Direction 2016 specifies additional matters that should be addressed in water company drought plans. We have assessed the draft plan for compliance against these Directions.

Affinity Water has not presented sufficient evidence in its draft plan to demonstrate compliance with all Directions. The company should provide more details to show how it complies with the following Directions.

| Direction not complied with | Recommended changes to ensure compliance with Direction |
|---|---|
| (c) the permits and approvals that the water undertaker expects to need in order to implement the drought management measures | See Recommendations 2 & Improvement 1 |
| (e) the measures that may be needed to mitigate any adverse effect on the environment resulting from the implementation of a drought management measure | See Recommendations 2 |
| (f) the permits and approvals that the water undertaker expects to need in order to implement those mitigation measures; | See Recommendations 2 |
| (g) the compensation that may need to be made as a result of the implementation of a drought management measure | The plan does not include details of how the company has considered if compensation may need to be made as a result of the implementation of a drought management measure. 'Compensation' is within the meaning of Schedule 9 to the Water Resources Act 1991<br><br>The draft plan should include information on any compensation it may need to make in the event of losses/damages to source |

| Direction not complied with | Recommended changes to ensure compliance with Direction |
|---|---|
| | owners/affected parties as a result of implementing a drought management measure. |

# 3. Recommendations

This section sets out our key recommendations on addressing any major issues for the Affinity Water's draft drought plan.

## 3.1 Summary

We consider that the issues described in this section are significant to maintaining the security of supply and/or presents a moderate risk to the environment during a drought.

Following the recommendations outlined below will ensure Affinity Water's drought plan demonstrates that it is planning a secure supply of water and protects the environment whilst in a drought.

We have set out the evidence to support these recommendations in table 1 of Appendix 1.

### Recommendation 1 – provide a clear timeline of the sequence of actions Affinity Water would take in a range of drought scenarios.

We recommend that Affinity Water provides a range of worked examples that sets out its timeline and sequence of supply and demand actions under a range of different drought scenarios. This will enable Affinity Water's customers and stakeholders to have greater confidence that the company's drought plan is robust to a range of droughts and actions will be implemented in a timely and correct order.

Affinity Water has completed work on droughts scenarios, testing and triggers, but it is unclear how this has been applied to the plan. The company has not clearly presented the actions it would undertake, when, and in what order, when faced with a range of different droughts of differing magnitudes and duration. This includes the sequencing of implementing drought permits.

Affinity Water should provide a set of timelines to illustrate how it will apply drought measures under a range of historic and synthetic drought scenarios of different magnitudes and duration, including droughts that are more severe than experienced in the historic record. This will enable customers to understand which drought scenarios trigger the need for drought permits, non-essential use drought orders and emergency drought orders. It will also help the company to demonstrate how its drought triggers and sequencing of drought measures will minimise the risks to the environment and security of supply under a range of drought scenarios.

### Recommendation 2 – confirm which drought permit sites are application ready and commit to a timetable of work on outstanding drought permits, clearly detailing which permits will be needed in different drought scenarios.

Affinity Water has completed some work on drought permit applications, but has not fully completed assessments of environmental impacts, monitoring plans and/or mitigation options for all drought permits. The company needs to make it clear to its customers and stakeholders which permits are most likely to be needed in a drought and confirm that these are 'application ready'. The company should complete as much work as possible for its final plan, focussing its

efforts on sites where permits are most likely to be needed and should commit to a timetable to complete any outstanding work at other sites as soon as possible.

Completing environmental reports for all permits will help the company to assess the potential impacts of the permits on the environment and help ensure that adequate monitoring and mitigation measures are put in place to help minimise adverse impacts (Direction 3c, 3e and 3f). This will also help the company to determine if drought permit options should be drought orders where there is likely to be significant risks to the environment.

Without adequate assessment of the impact of permits on sensitive species and habitats, suitable mitigation measures may not be put in place to minimise impacts (Directions 3e and 3f). As a result it is highly likely that drought permit applications will be delayed (due to increased likelihood of Public Hearings) and/or applications being refused. This is a risk to the environment and the company's security of supply.

Finally, the company should clearly detail which drought permits (and/or drought orders) will be needed under which drought scenario (see Recommendation 1). This includes detailing the frequency that drought permits will be implemented and the sequencing of their implementation. We would expect drought permits for sensitive sites to only be applied for after non-essential drought orders are implemented and that the frequency of implementing non-essential drought orders is consistent with the company's stated levels of service (1:40 years).

# 4. Improvements

This section sets out our suggested further improvements to Affinity Water's draft drought plan. These improvements are in addition to our key recommendations set out in section 3.

We have set out the evidence to support these improvements in table 2 of Appendix 1.

### Improvement 1 – provide further information on supply options and preparatory work needed for their timely implementation.

We recommend that Affinity Water should provide details of which of generic supply side options listed within its plan will provide any additional supplies and outline preparatory work needed to ensure these options will be implemented in a timely manner to benefit security of supply in a drought.

The company has included generic actions to increase supplies, but does not explicitly detail which options will be need under different drought scenarios, or how much water these options will yield, or the specific work/permissions needed to enable these supply options to be brought on-line in a timely manner. Identifying all actions needed to maintain security of supply in a drought is important so that actions are delivered in a timely way to secure supplies (Direction 3c). Failure to identify the work required to maintain supplies at existing sources and bring new sources on-line could put the environment and security of supply at risk.

The company should provide further details on generic supply side options by:

- Providing a list of its existing licensed sources and disused and abandoned sources where it plans to undertake work to increase and/or maintain abstraction during a drought.
- Clarifying if it will require a drought permit, or if abstraction will be within existing licence limits.
- Providing an estimate of the supply-side benefits in Ml/d at each site
- Outlining the work needed at each site and how long it will take to deliver the estimated benefits
- Ensuring that its drought triggers enable necessary enabling works to take place ahead of supplies being needed in a drought
- Outlining any other permits or permissions that may be require to increase or maintain supplies, including actions to mitigate water quality constraints.
- Preparing details of any drought permits needed, including an EAR for each relevant site.
- Confirming the drought scenarios under which the actions will be implemented, including which actions would only be considered under extreme conditions.

## Improvement 2 – confirm supply and demand management activities used within the company's drought plan are the same as those used to test the plan

Affinity Water should remove or explain inconsistencies between the drought measures detailed in its drought plan and those that have been used to test the robustness of its plan as part of its drought scenarios modelling work, for example:

- Drought permits at sites subject to sustainability changes have been excluded from the scenario modelling, but are listed as being required to maintain supplies in the draft plan.
- Emergency drought orders have been included in the scenario, but are considered unacceptable within company's level of service.

Affinity Water should reassure its customers and stakeholders that the plan has been robustly tested using the same assumptions on the availability and yield of supply and demand options, and if not explain why.

## Improvement 3 – confirm scenarios used for resilience testing

We are aware that Affinity Water is considering testing its draft WRMP against a range of plausible alternative droughts using work developed as part of the WRSE and WRE projects. The company should confirm that the scenarios used in the drought plan are consistent with scenarios and actions being considered by the company to test the resilience of its draft WRMP (as required by the WCDP guideline).

# Appendix 1: Evidence report

Table 1 contains the evidence, details and reasons to support the recommendations we have made in section 3 of this representation.

Table 2 contains the evidence, details and reasons to support the recommendations we have made in section 4 of this representation.

**Note:** If applicable, we will also have sent further minor comments directly to Affinity Water. These comments identify areas which would further improve the clarify of the draft drought plan, but we do not consider to be significant issues to maintaining public water supplies or are a risk to the environment during a drought. If applicable, these are available from the water company contact at the Environment Agency.

## Table 1: Evidence report for recommendations

| **Recommendation 1 –Testing the plans under a range of drought scenarios and the timing and sequence of actions.** | | | |
|---|---|---|---|
| **Area of issue** | **Issue and evidence** | **Implications** | **Information or changes required** |
| Issue 1.1 – The sequencing of drought actions, including drought permits. | The company has not clearly presented the actions it would undertake, when, and in what order, when faced with a range of different droughts of differing magnitudes and duration. This includes the sequencing of implementing drought permits.<br>We would like the company to provide further information to understand the scenarios that will trigger the implementation of drought permits at sites subject to sustainability changes. | Understanding the timing and sequencing of drought measures, including the order which drought permits will be implemented, is needed to demonstrate that drought measures will be implemented in a timely manner that will minimise risks to customers and the environment.<br>The Environment Agency will require evidence that the company has undertaken measures to reduce demand ahead of applying for drought permits. | Affinity Water should provide a set of timelines to illustrate how it will apply drought measures under a range of historic and synthetic drought scenarios of different magnitudes and duration, including droughts that are more severe than experienced in the historic record.<br>The company should provide an estimation of the return period for each event and clarify the sequencing and frequency it will need to implement drought permits and emergency measures in order to secure supplies.<br>This will enable customers and stakeholders to understand which drought scenarios trigger the need for drought permits, non-essential use |

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| | We would also like to better understand why non-essential use bans are implemented after drought permits (figure 29) and how this relates to the company's levels of service and (section 1.4). | Failure to provide this evidence during a drought could result in delays to granting drought permits and this could pose a risk to security of supplies and the environment. | drought orders and emergency drought orders.<br>It will also help the company to demonstrate how its drought triggers and sequencing of drought measures will minimise the risks to the environment and ensure security of supply under a range of drought scenarios. |
| Issue 1.2 – Testing drought actions and triggers against a range of scenarios. | The company has not provided worked examples to demonstrate that its drought triggers and measures are appropriate under a range of droughts of different severities and durations as required by the WCDP guideline:<br>***'Test your drought triggers and proposed actions…***<br>*You should use tests to prove your chosen triggers are appropriate to a range of droughts. Your tests should:*<br>*• identify how well your drought triggers would work in different drought scenarios*<br>*• identify what actions you'd take in different scenarios*<br>*• assess what the effects of past droughts would be and* | Testing the plan to a range of droughts is needed to demonstrate that the company's triggers and measures will enable the timely implementation of drought measures needed to secure supplies under a range of drought conditions.<br>It is important to understand which drought permits will be needed to secure supplies, the frequency they will be implemented and the sequencing of their implementation. This will help the company to assess the potential impacts of the permits on environmental and ensure that adequate monitoring and mitigation measures are put in | See above |

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| | *what actions you'd take if they occurred today'*<br><br>It is unclear which scenarios trigger the need for drought permits and emergency drought orders and how this compares to historic events. | place to help minimise adverse impacts. (Direction 3c, 3e and 3f). | |

| **Recommendation 2 – Improved environment assessment and monitoring of drought permits** | | | |
|---|---|---|---|
| **Area of issue** | **Issue and evidence** | **Implications** | **Information or changes required** |
| Issue 2.1 – Environmental assessment of drought plan. | Affinity Water has completed some work on drought permit applications, but has not fully completed assessments of environmental impacts, monitoring plans and/or mitigation options for all drought permits (section 6 and accompanying site EARs).<br><br>The company needs to make it clear to its customers and stakeholders which permits are most likely to be needed in a drought and confirm that these are 'application ready', as required by the WCDP guideline: '***Include details of drought permits and orders…***You should carry out | Completing environmental reports for all permits will help the company to assess the potential impacts of the permits on the environment and to ensure that adequate monitoring and mitigation measures are put in place to help minimise adverse impacts (Direction 3c, 3e and 3f). This will also help the company to determine if drought permit options should be drought orders where there is likely to be an impact to the environment at sensitive sites.<br><br>Without adequate assessment of the impact of permits on sensitive species and habitats, suitable mitigation measures may not be put in place to minimise impacts (Directions 3e | The company should complete as much work as possible to assess the impact of its drought permits for its final plan. The company should focus its efforts on sites where permits are most likely to be needed and should commit to a timetable to complete any outstanding work at other sites as soon as possible.<br><br>The company should refer to the detailed comments we have provided for each EAR, and continue to work with local Area offices to complete the required work to an agreed timetable.<br><br>Completing environmental reports for all permits will help the company to assess the potential impacts of the permits on the environment and to ensure that suitable monitoring and mitigation measures are put in place to help minimise adverse impacts |

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| | *as much preparation work as possible in advance of a drought event. Applications for drought permits and orders should, where possible, be ready to submit before they're needed.'*<br><br>Further work is required to understand the impact of the company's drought permits on the environment and to ensure adequate mitigation and monitoring is put in place. This includes deciding whether the company should consider applying for drought orders, rather than permits, at sensitive sites. | and 3f). As a result it is highly likely that drought permit applications will be delayed (due to increased likelihood of Public Hearings) and/or applications being refused. This is a risk to the environment and the company's security of supply. | (Direction 3c, 3e and 3f). This will also help the company to determine if drought permit options should be drought orders if its assessments conclude that there is likely to be significant risks to the environment at sensitive sites.<br><br>We also recommend that the company provides details to illustrate how it will implement its drought permits (and/or drought orders) under a range of drought scenario (see Recommendation 1 above). This includes detailing the frequency that drought permits will be implemented and the sequencing of their implementation. We would expect drought permits for most sensitive sites only to be applied for after a non-essential use drought orders is implemented and for a non-essential use drought order to be implemented in-line with the company's stated levels of service. |
| Issue 2.2 – Monitoring of drought permit impacts (and, if relevant, orders). | The draft plan includes an initial monitoring plan (Appendix 6 and EARs) to help determine the impact of its drought permits on the environment.<br><br>Further work is needed to ensure this fully covers the potential impact of its permits on the environment. | Including sufficient information in the drought plan in advance of a drought will allow timely determination of drought orders and permits.<br><br>Without adequate monitoring information applications for drought permits may be delayed or rejected. | The company should complete as much work as possible to assess the impact of its drought permits for its final plan and identify and additional monitoring needed to support its assessment. The company should focus its efforts on sites where permits are most likely to be needed and should commit to a timetable to complete any outstanding work at other sites as soon as possible. |

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| | | This could put security of supplies at risk and could lead to unnecessary damage to the environment. | The company should refer to the detailed comments we have provided for each EAR and work with local Area offices to complete the required work to an agreed timetable. |

## Table 2: Evidence report for improvements

| Area of issue | Issue and evidence | Implication | Recommended improvement |
|---|---|---|---|
| Issue 1 – Confirming supply options available in a drought and the preparatory work needed for their timely implementation. | The company has included generic actions to increase supplies, for example by undertaken engineering works at existing sources of supply and by re-commissioning dormant or disused sources (section 5.3, table 16).<br><br>However, Affinity Water has not explicitly detailed which options will be need under different drought scenarios, or how much water these options will yield, or the specific work/permissions needed to enable these supply options to be brought on-line in a timely manner. | Identifying all actions needed to maintain security of supply in a drought is important so that actions are delivered in a timely way to secure supplies (Direction 3c).<br><br>Any alteration to existing abstraction licences, or applications for new permissions that are required to secure supplies due to an exceptional shortage of rain should be included as drought permits (Direction 3c, 3e and 3f).<br><br>Failure to identify the work required to maintain supplies at existing sources and bring new sources on-line could put the environment and security of supply at risk. | The company should provide further details on generic supply side options by:<br><br>• Providing a list of its existing licensed sources and disused and abandoned sources where it plans to undertake work to increase and/or maintain abstraction during a drought.<br>• Clarifying if it will require a drought permit, or if abstraction will be within existing licence limits.<br>• Providing an estimate of the supply-side benefits in Ml/d at each site<br>• Outlining the work needed at each site and how long it will take to deliver the estimated benefits<br>• Ensuring that its drought triggers enable necessary enabling works to take place ahead of supplies being needed in a drought<br>• Outlining any other permits or permissions that may be require to increase or maintain |

| Area of issue | Issue and evidence | Implication | Recommended improvement |
|---|---|---|---|
| | | | supplies, including actions to mitigate water quality constraints.<br>• Preparing details of any drought permits needed, including an EAR for each relevant site.<br>• Confirming the drought scenarios under which the actions will be implemented, including which actions would only be considered under extreme conditions. |
| Issue 2 – Confirming that the supply and demand management activities used within the company's drought plan are the same as those used to test the plan. | There is inconsistency between the drought measures identified in the plan and those tested in the company's drought management scenario planning report (summarised in section 4).<br>For example, drought permits at sites subject to sustainability changes have been excluded from the scenario modelling (technical report table 2-4), but are listed as being required to maintain supplies in the draft plan (section 5, table 17).<br>Emergency drought orders have been included in the | It is important that the company's plan and scenario modelling are consistent. This will help to reassure Affinity Water's customers and stakeholders that the plan has been robustly tested using the same assumptions on the availability and yield of supply and demand options, and if not explain why. | Affinity Water should remove, or explain inconsistencies between the drought measures detailed in its drought plan and those that have been used to test the robustness of its plan as part of its drought scenarios modelling work. |

| Area of issue | Issue and evidence | Implication | Recommended improvement |
|---|---|---|---|
| | company's drought scenario testing (technical report table 2-3), but are considered unacceptable (draft plan section 1.3) within the company's level of service. | | |
| Improvement 3 – Confirming the scenarios used for resilience testing in the drought plan and consistency with the company's draft WRMP. | The company has included some information on how it has developed its drought scenarios, but we require further information to understand how these have been applied to test the plan.<br><br>We are aware that Affinity Water is considering testing its draft WRMP against a range of plausible alternative droughts using work developed as part of the WRSE project (EA/Affinity Water method discussion meetings). | It is important to understand how the company has used historic and synthetic data to test its plan to a range of different drought scenarios. This is needed help demonstrate that the company's drought triggers and drought measures are robust under a wide range of drought conditions.<br><br>It is important to understand which drought scenarios trigger the need for emergency drought orders and how the company has used this information to help inform resilience testing in its draft WRMP and ensure consistency between the two plans. | The company should confirm that the scenarios and drought measures used in the drought plan are consistent with the scenarios and actions being considered by the company to test the resilience of its draft WRMP, including for droughts that are more severe than experienced in the historic record (as required by the WCDP guideline). |

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Date: 02 October 2017
Our ref: 225600
Your ref: Draft Drought Management Plan (2017-2022)

Secretary of State, Department for Environment Food and Rural Affairs (Defra)
Drought Plan Consultation
Water Resources
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**BY EMAIL ONLY**

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Dear Secretary of State,

**Consultation:** Affinity Water draft Drought Management Plan 2017-2022, October 2017

Thank you for your consultation on the above dated 09 September 2017 which was received by Natural England on the same day.

Natural England is a non-departmental public body. Our statutory purpose is to ensure that the natural environment is conserved, enhanced, and managed for the benefit of present and future generations, thereby contributing to sustainable development.

**The Environmental Assessment of Plans and Programmes Regulations 2004**
**The Conservation of Habitats and Species Regulations 2010 (As amended)**
**Wildlife and Countryside Act 1981 (As amended)**
**Natural Environment and Rural Communities Act 2006**

Natural England have had the opportunity to review the Affinity Water draft Drought Management Plan (dDMP)(2017-2022).

**Habitats Regulations Assessment**
**Internationally designated sites**
A water company is a competent authority under Regulation 7(1) of the Conservation of Habitats and Species Regulations 2010 (which replaced the Habitats Regulations). Under Regulation 9(5) a competent authority, in exercising any of its functions, must have regard to the requirements of the Habitats Directive so far as they may be affected by the exercise of those functions.

Affinity Water must ensure that its drought plan meets the requirements of the Habitats Regulations and, have if necessary undertaken a Habitats Regulations Assessment (HRA) on the effects of the drought plan (including any supply-side drought management options) on Special Areas of Conservation (SACs), Special Protection Area (SPAs) or Ramsar sites, alone or in combination with other plans.

There does not seem to be a HRA submitted with the current dDMP, however, we note that SPAs, SACs and Ramsar sites have been screened within the Environmental Assessment Reports (EARs) undertaken to support the dDMP and the drought permits/options selected. The absence of a separately labelled HRA, even just a summary screening of the plan, has made it difficult for Natural England to advise whether the dDMP will have a likely significant effect (LSE) or not, under the Habitats Regulations. We advise that it would be helpful for Affinity Water to pool all of their HRA screening assessments that state no LSE into one clear and concise audit of the overarching plan for review. The dDMP, as presented currently, does not contain sufficient environmental information for us to provide more through comments.

Section 6 of the dDMP addresses the environmental impacts posed by actions required in a drought event. Natural England acknowledge the inclusion of the relevant environmental legislation within this section. While these have been succinctly summarised within section 6, we note that the following is stated:
"*[Affinity Water] have produced detailed Environmental Assessment Reports (EARs) for all drought permit/order sites and fully evaluated any associated potential impacts on Habitats Directive sites or SSSI sites of European importance.*"

Further to this, "Habitat Directive sites" are referenced within this section. While the Habitats Directive is the overarching European legislation that protects SACs and SPAs, it has been transposed into UK law as the Habitats Regulations. As such, we would advise altering the wording in this section to accurately reference UK legislation. In addition to this, "*SSSI sites of European importance*" seems to imply that only SSSI associated with SACs or SPAs have been considered.

**Strategic Environmental Assessment**
Affinity Water have not undertaken a Strategic Environmental Assessment (SEA) in the development of this dDMP, required under the European Directive 2001/42/EC 'on the assessment of the effects of certain plans and programmes on the environment'. As such, there is limited environmental evidence presented to provide Natural England with confidence that a strong environmental baseline has been established from which to draw conclusions within the drought permits. There is insufficient reference to designated sites in the drought plan EARS and in the absence of an accompanying SEA Natural England advises that the proposals have given insufficient evidence of assessment of impacts (or their absence)on of Sites of Special Scientific Interest (SSSI) or any S41 priority habitats and species present across Affinity Water's operational area. Please see the subsequent paragraphs for more specific detail.

**1 ) Nationally designated sites**
Sites of Special Scientific Interest (SSSI) are nationally designated under the Wildlife and Countryside Act 1981, and many are not also part of European designations.
There are several wetland sites within Affinity Water's supply area, which rely on groundwater connectivity to maintain their habitats. Table 19 of the dDMP summaries the potential environmental impacts from 'supply-side drought actions'. This table focuses primarily on the impacts that will be seen on river flows, and does not consider any wetland areas that may also be present within the groundwater catchments from which abstraction occurs, and which may also be put at further risk under a drought permit/order. We advise including this within Table 19, to ensure that the dDMP sufficiently address all potential environmental receptors.

**2) S41 Priority habitats and species**
Under the Natural Environments and Rural Communities Act 2006, Affinity Water must have regards to conservation and enhancement of priority habitats and species. As part of this duty the drought plan EARs should identify whether the options presented within their dDMP and drought permits will have any significant impact on any water dependant S41 priority habitats and species. Such habitats and species have not been mentioned within any of the documentation provided. The provision of a SEA would have secured the assessment of the implications of the dDMP on such habitats and species (for example, chalk streams, and chalk dependant wetlands. Furthermore, identifying the presence of and risk to water dependant S41 priority habitats and species would at least allow for Affinity Water to develop appropriate monitoring and mitigation principles within the dDMP.

**Environmental Assessment Reports**
We advise that the Environmental Assessment Reports (EARs) currently provided do not relay sufficient information to ensure that drought options are permit ready, our below comments relate specifically to the considerations of SSSI. Natural England note that in several cases it states that various aspects of the environmental assessments will be "*completed at the time of application for a drought permit*". This includes assessments potentially relating to designated sites. A proposed permit without a developed environmental baseline and without sufficient consideration of impacts and mitigation on nationally important biodiversity is not permit ready. Resultantly, Natural England recommends that all relevant environmental baseline information is included at the current stage, or

that it is made clear within the reports that the assessments have been undertaken to level of detail that would be required at permitting. Further to this, there is no discussion over the implications of the drought permits on any S41 priority habitats and species within the EARs provided. In addition any evidence gaps in the baseline data and how such evidence gaps will be filled should also be included within the drought plan EARs.

We note that for many of the Environmental Assessment Reports (EARs) that many of the national and European sites identified have been "*reviewed using the latest Natural England report (Natural England, 2017) for any water related issues and no known problems were identified*". The assessment in the EAR should be against the specific impacts of the drought option and not in relation to a generic report. However, Natural England cannot see any further detail on these reviews, and we can therefore not identify whether the conclusions drawn from such reviews are appropriate. The EARs should provide more context for the SSSIs that have been screened out from any impacts, as well as reviewing the water dependant priority habitats and species that may be affected by the drought permits. This would afford Natural England the opportunity to fully review the conclusions of the drought options and the relevancy of the mitigation and monitoring approaches. We have included several examples of specific drought permit EARs that we are concerned about in **Annex 1** of this letter.

**Protected species**
Having reviewed the EARs provided, we also note that there is limited detail of the type of species present within the river systems being assessed. While macrophyte and macroinvertebrate surveys have been undertaken for the sake of the Water Framework Directive (WFD), there does not appear to be any investigation into the presence of protected species. Again, the absence of this information makes it difficult for Natural England to fully comment on the suitable scope of the proposed monitoring and mitigation. Please see **Annex 2** of this letter for further information on protected species. Nor are protected species discussed within the main body of the dDMP.

For any queries relating to the specific advice in this letter only please contact Sophie Temple on 020 8026 8136. For any new consultations, or to provide further information on this consultation please send your correspondences to consultations@naturalengland.org.uk.

Yours sincerely
Sophie Temple
Thames Team
Sustainable Development and Regulation

Checked by senior adviser Louise Bardsley for quality assurance

**Annex 1 – specific examples of Drought Permit EARs which highlight Natural England's concerns over a general lack of specificity throughout the assessments**

**Drought Permit: UTTL**
Natural England requires further clarification on the conclusions of impact on the Debden Water SSSI from the proposed UTTL drought permit. We do not consider that enough information has been provided within the current EAR to infer with confidence that no issues will occur (para. 4.4.2 of the dDMP). The report states the following in relation to this SSSI:

"*This site was reviewed using the latest Natural England report (Natural England, 2017) for any water related issues and no known problems were identified although these mainly focused on the grassland areas of the site. As the site is a tributary of the River Cam, it is likely that it could become dry under drought conditions.*"

Presumably, when the report refers to drought conditions, it means under normal environmental drought conditions, and not as a result of the permit. This will need clarifying to provide context for the monitoring efforts affiliated with the drought option. Also it is usual the hydrologoical assessment of drought option will assess whether the drought option will prolong the rewetting following drought in other words prolong the impacts of drought.

Furthermore, we are not confident of the assertion that the drought option measures will not have any impact on the SSSI, due to its upstream location. More evidence needs to be provided within this EAR to ensure that any risks can be identified, and by extension appropriate monitoring and mitigation is applied to the drought permit. We would expect the following to be provided:

- Despite the location of the SSSI, we consider that there is potential of impact from the creation of depositional zones
- If levels drop significantly there is a risk of bank slumping and head cutting
- The above will depend on how far back up the flow change will effect, and this will be a result of the local slope gradient of the channel subject to drought controls. As such, we would expect this to be assessed within the EAR.
- We also advise that a discussion over potential impacts on ground water levels is undertaken, in relation to potential draw down zones that may occur. A summary of local geology and ground water connectivity between UTTL and the Debden Water SSSI should be provided to address this.

All of the above must be considered in line with both normal environmental conditions under drought, and those exacerbated by the drought permit. We would expect both monitoring and mitigation efforts to take this SSSI into account.

**Drought Permit: FULL**
It would be beneficial for additional clarification to be afford to the information within the FULL drought permit EAR. Specifically in relation to both the Sherrardspark Wood SSSI and the Tewinbury SSSI, which have been identified by screened out from risk, within the report. Our advice is as follows:

- In paragraph 4.4.1 of the FULL drought permit EAR it states that Sherrardspark Wood SSSI will not be affected by the potential drought permit, due to being on high ground. There are some assertions made in this paragraph that Natural England advise Affinity Water re-visit.
- Natural England have reviewed the maps presented within the EAR against our own mapping software, and we consider that at least some of the SSSI is within the catchment of the River Mimram.

- In relation to the Tewinbury SSSI, while we acknowledge that this SSSI is quite far downstream from the FULL drought permit location. The report claims the following:

  "*This site is downstream of the influence of abstraction from FULL and the existence of springs at Digswell and Tewinbury allow this section of the river to be very robust*." However, this site is/forms part of the SSSI citation along the River Mimram, and has suffered low flows in the past, with work being undertaken to address issues with flows. As such, we are concerned that this site is not as robust as is assumed in the EAR. Further to this, there is not enough information supplied with the assessment report to allow us to analyse the conclusion made.

The above information should be covered within the EAR submitted for this drought permit. We do not consider it to be permit ready at present.

**Annex 2**
**European Protected Species protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and the Wildlife and Countryside Act 1981 (as amended)**
Natural England's standing advice provides guidance on how protected species should be dealt with in the planning system.

Under regulation 9(3) of the Habitats Regulations, competent authorities (in this instance Affinity Water) must have regard to the requirements of the Habitats Directive when exercising any of their functions. This includes having regard to whether the development proposal is likely to negatively affect any European Protected Species (EPS) and whether any necessary licence is likely to be granted by Natural England. This should be based on the advice we have provided in this response on likely impacts on favourable conservation status and our published guidance on the three licensing tests (ie no alternative solutions, imperative reasons of overriding public interest and maintenance of favourable conservation status). More information on the requirements to meet the three tests is provided in Defra's draft guidance on the Habitats Directive (of particular interest are paragraphs 125-143) and Natural England's guidance on how we apply the three tests.

# Ver Valley Society Response to Affinity Water Draft Drought Management Plan 2017

1. 2017 has demonstrated that it takes just one year of 'below normal' rainfall to reduce the River Ver to a perilous state. Despite all the good efforts of Affinity Water to balance managing water resources with environmental concerns including the closure of Bow Bridge pumping station in 2016, we are disappointed that the River Ver, especially in the upper reaches, is still suffering with little or no flow on an increasing basis.

2. The Ver Valley Society (VVS) believes that this is an unacceptable situation for one of the world's 200 chalk streams and a river which Affinity recognises 'has high conservation value, as well as recreation values and a record of cultural history in the landscape.' (WRMP14[1]). The Cranfield University Chalk Streams Report (2017)[2] is a more recent analysis of the state of the Chiltern chalk streams and the challenges involved in improving their status from the current 'poor' to 'good'.

3. Abstraction reductions across the Chiltern chalk stream region have failed to halt the decline in flows, and the proposals in this DMP to increase abstractions or re-open pumping stations in drought years will only exacerbate that decline, and lengthen recovery in the river fauna and flora afterwards.

4. Given its current water sources, Affinity has devised a rational system to manage demand in a drought, as set out in Sections 4 and 5 of the Non-technical Summary, **but we do not agree that any extra water should be abstracted from the River Ver catchment at Friars Wash or Bowbridge as shown in the stage order plan in Section 5**, as we fear that as the Ver will already be dry by the time these extra abstractions are triggered the unique chalk stream ecology may never subsequently recover.

5. **Affinity is capable of both internal transfers, and import of water from other companies. Rather than further exhaust the chalk aquifers in drought years, all assistance and incentive should be offered to ensure Affinity increase this transfer capacity, to reduce its dependency on its Chiltern boreholes.**

6. It is clear that southeast England will suffer an increasing water deficit due to climate change and population increase (600,000 to 2040 in Affinity's supply area alone, requiring an extra 100 million litres per day), so a holistic view needs to be taken to balance supply and demand over much greater distances than is possible today, by transfers from areas such as the North West and Wales (where NERC monthly river flow reports invariably show above or notably higher than average flows).

7. **We call upon the Secretary of State to initiate a major water infrastructure review aimed at creating a National Water Grid with a timetable for implementation while there is still time to save our unique chalk streams heritage.** A NWG needs to be in place within 20 years. To continue as we are makes further decline inevitable, because the technical details in the full DMP show that there is little scope for abstraction increases in Southeast England. This would also support the wider economic development of the region. **The time for taking water for granted is over.**

8. There is a lack of public understanding of the connection between increasing water use and the decline of the chalk streams. Affinity should redouble its efforts to educate its consumers about the importance of water-use efficiencies and aim to reduce consumption in its area to the national average. Experience with waste recycling shows that the public will support initiatives to improve the environment once they understand the need and rationale for change.

**Acknowledgment**

The Ver Valley Society valued the opportunity to discuss this consultation document with Affinity Water officers at Tamblin Way on September 28 2017. We appreciate our relationship with Affinity Water, your local catchment officers and others over many years and hope to continue with this into WRMP19, 24 and beyond. The regeneration of the Ver to good ecological status by 2024 would be the best manifestation of our mutual ambition.

1 Water Resources Management Plan 2014, Affinity Water

2 Development of a Social Impact Monitoring Protocol for Chalk Stream Restoration, Cranfield University, 2017

Secretary of State
Department for Environment Food and Rural Affairs
Drought Plan Consultation
Water Resources
Department for Environment and Rural Affairs
Area 3D
Nobel House
17 Smith Square
London
SW1P 3JR

29 September 2017

Dear Secretary of State

**Affinity Water draft Drought Management Plan 2018 - 2023**

I am writing on behalf of Herts and Middlesex Wildlife Trust (HMWT) in response to the draft Drought Management Plan put forward by Affinity Water. HMWT is the leading voice for wildlife conservation in Hertfordshire and Middlesex with over 22,000 members. Since 2011 the HMWT Living Rivers Project has worked to raise awareness of Hertfordshire's rivers and to restore these degraded habitats. HMWT are also the Defra appointed hosts of the Upper Lea and Upper Lower Lea Catchment Partnerships, a partnership of local stakeholders and users working to achieve EU Water Framework Directive targets of "good ecological status" for the River Lea and its tributaries. There are 47 Wildlife Trusts across the UK: The Wildlife Trusts are the only charities working to protect the full range of UK wildlife and habitats at a local level.

Hertfordshire's rivers represent a large proportion of the worlds chalk river resources. There are estimated to be around 200 chalk rivers in the world, 85% of which are found in England of which 12% are found in Hertfordshire. This makes Hertfordshire's rivers an internationally important conservation resource. Despite this none of Hertfordshire's chalk rivers are protected by legal designation. None of Hertfordshire's chalk rivers are currently achieving good ecological status as required under the European Water Framework Directive with the majority failing to meet the required flow levels needed to achieve this. Low flows in Hertfordshire's chalk rivers are directly linked to over abstraction of groundwater resources.

During 2017 many of Hertfordshire's chalk rivers dried out due to a prolonged period of dry weather and reduced aquifer recharge. This has allowed scrutiny of the existing drought actions in place. Most notably many of Hertfordshire's chalk rivers were already dry before any public information was made available. This means that the environmental impact of drought on

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aquatic biodiversity have already occurred and it is likely it will take several years for this to recover fully. As catchment hosts we received several messages from concerned members of the public during this period who were seeking advice which we were unable to provide effectively due to the lack of information provided to us by Affinity Water. It is our view therefore that the Drought Triggers used by Affinity Water should be reviewed to reflect this. Affinity Water should begin raising awareness and appealing for voluntary usage reductions when the situation reaches Drought Zone 1, at present this occurs at Drought Zone 2. Additional information should be made available to catchment partnerships and key water resource stakeholders, HMWT manage several important wetland conservation areas which includes Sites of Special Scientific Interest that would be severely affected in the event of drought, early engagement and information provided by Affinity Water and the Environment Agency would allow us to better prepare for drought and increase resilience, this is also the case for several stakeholders within the catchment partnership for example fishery managers and angling clubs.

A review of the use of Temporary Usage Bans (TUBS) and their scope is also required. At present these are very broad and do not consider the wider environmental implications they pose. One example of this is the cleaning of boats. Whilst preventing boat users from cleaning boats with hosepipes/pressure washers would save water it increases biosecurity risk posed if boats are moved between multiple sites, by being unable to thoroughly clean boats this risks transfer of non-native invasive species to new sites, there is significant risk of this within the Lea Catchment where species found in very few sites elsewhere in the country are present for example the species *Dikerogammarus haemobaphes*. Therefore whilst it is evident that the economic and social impact of TUBS has been investigated, more needs to be done to assess the potential wider environmental impacts TUBS could pose. The geographic scale that TUBS are used should also be considered, within Hertfordshire it is clear that environmental drought conditions affect different rivers at different times, for example the Chilterns chalk river system is currently seeing much dryer conditions than the East Hertfordshire Chalk Rivers. A mechanism for triggering TUBS on a more local scale therefore needs to be investigated.

HMWT are also concerned about the potential long lasting environmental impacts of Drought Permits and Drought Orders. Many of the sites identified by Affinity Water that would be subject to Drought Permits or Drought Orders are sites where abstraction has already been reduced due to the high ecological impacts it caused. HMWT recognises that by this stage in a drought the rivers where Drought Permits and Drought Orders are proposed will likely have already dried out entirely. It takes the aquatic environment 12 years to recover to pre-drought conditions following the end of a drought, by abstracting groundwater from these sites it will increase the amount of time it takes for the groundwater levels to recharge to a point at which rivers can begin to flow again therefore delaying the star of recovery of the aquatic environment.. This potentially means Hertfordshire's Chalk Rivers will remain in a state of ecological drought conditions longer than necessary.

Finally HMWT would like to see the Drought Management Plan take into more consideration the impact drought will have on wider services that have a direct impact on the aquatic environment. For example during low flow and

drought conditions there is a lower level of dilution of discharges from sewage treatment works. This means that in addition to the impacts of low flows drought will potentially have a negative impact on water quality within the catchment.

Yours sincerely

David Johnson
Hertfordshire Living Rivers Officer

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**Chief Officer**: Sue Holden

Secretary of State for Environment, Food & Rural Affairs
Drought Plan Consultation,
c/o Water Resources Policy
Area 3D
Nobel House
17 Smith Square
London, SW1P 3JR

Date: 2nd October 2017

Ref: CCSP/17/010

Dear Sir/Madam

**Affinity Water Draft Drought Management Plan consultation.**

The Chilterns Chalk Streams Project welcomes the opportunity to respond to the above plan.

An initiative of the Chilterns Conservation Board, the Chilterns Chalk Streams Project (CCSP) was launched in 1997 in order to conserve and enhance all major chalk streams in the Chilterns Areas of Outstanding Natural Beauty (AONB), and to encourage enjoyment and understanding of them. The Project was set up in recognition of the importance of the area's chalk streams and the chronic low flows impacting on their long-term health.

The comments enclosed below refer specifically to Affinity Water's Central area only and address the potential impact on chalk streams covered by the CCSP, specifically the; Ver, Gade, Bulbourne, Chess and Hughenden Stream. This response represents the views of the CCSP Officer and not the Project's Partners necessarily and

**Comments on the dDMP**

We welcome Affinity's strong environmental focus in the DMP and recognition of the importance of the chalk streams in its operational area. However, whilst understanding that the primary focus for Affinity is on maintenance of customer supply during drought scenarios, the Plan is not sufficiently robust to protect chalk streams from serious long term damage in the event of severe drought.

The fact that Affinity have set out in their plan the need to effectively reverse their past and current programmes of abstraction reduction in the event of medium to severe drought, illustrates clearly the urgent need for the development of new strategic water resources to ease pressure on the Chilterns chalk streams, in the context of increased demand through development and the potential future impacts of climate change.

**Proposed Drought Permit sources**

Affinity Water have rightly drawn praise from many quarters for its progressive approach to protecting the environment, as set out in its Business Plan, and for its sustainability reductions programme, in particular. The chalk streams in Affinity's Central area have suffered from low flows as a consequence of over abstraction for public supply for many decades. Affinity's Sustainability reduction programme is bringing about much a needed reduction in abstraction to some of the area's most heavily impacted rivers. However, in the event of a Drought Permit or Drought Order being introduced, the actions set out in the DMP would involve significant increases in abstraction, effectively leading to the reversal of Affinity's current and past abstraction reduction programme, at a time when these rivers will already under serious environmental stress. This would be extremely damaging possibly causing long term or irreversible ecological damage, which would compromise much of the work being carried out by Affinity currently under its sustainable reductions programme. This highlights the need for more stringent demand side actions to be put in place earlier in the drought plan and also for the urgent need for new sources of water to be developed in the long term.

**Drought trigger zones**

There appears to be a mismatch between the proposed drought trigger zones and the conditions being experienced on the ground in chalk stream catchments. The Plan states on p108 that as Drought Zone 3 is reached and 'with drought conditions becoming more severe, chalk groundwater levels would be declining, resulting in the upper reaches of chalk streams drying out'. However, this year all six chalk streams in Affinity's Central area covered by the Project have either dried over significant sections of their course or have been completely dry for some time before DTZ3 was reached. This suggests that the monitoring points used for drought triggers in the Central Region do not reflect accurately what is happening on the ground. A further example of this issue is that, groundwater levels in the Chess (Ashley Green) and Misbourne (Amersham Road) catchments are currently the lowest since records began (1988 and 1992 respectively)[1], lower even than in 1997. In 1997, the plan states that we were on

[1.] Environment Agency Water Situation Report, HNL Area, August 2017

the threshold of DTZ4 and yet now when groundwater levels are lower we are only just entering DTZ3.

Yours sincerely

Allen Beechey BSc(Hons), MSc
Chilterns Chalk Streams Project Officer

07 September 2017

Secretary of State, Department for Environment Food and Rural Affairs (Defra)
Drought Plan Consultation
Water Resources
Department for Environment Food and Rural Affairs
Nobel House (Area 3D)
17 Smith Square
London
SW1P 3JR

**Our Ref** J:\Water Management\070 Outside Parties = Non E.A\70.03 Water Company Drought Plans\Affinity Water\2017\ CRT response to Affinity Water Drought Plan Consultation _ August 2017.docx

**Your Ref**

Dear Sir/Madam

**AFFINITY WATER DRAFT DROUGHT MANAGEMENT PLAN 2017 CONSULTATION**

The Canal & River Trust (the Trust) is the guardian of 2,000 miles of historic waterways across England and Wales. We are among the largest charities in the UK, maintaining the nation's third largest collection of listed structures, as well as museums, archives, navigations and hundreds of important wildlife sites.

We believe that our canals and rivers are a national treasure and a local haven for people and wildlife. It is our job to care for this wonderful legacy – holding it in trust for the nation in perpetuity and giving people a greater role in the running of their local waterways.

In terms of the draft Drought Plan, the Trusts has the following comments:
Drought Permits and Drought Orders – Section 5.4.1 Central Region, (p84).

Table 17 details a number of locations where Drought Permits and /or Drought Orders may be sought by Affinity Water. The Trust would expect to be consulted before any Drought

Permit(s)/Order(s) were granted to ensure that navigation and the Trust's water resources were duly considered.

Yours faithfully,

Dr Adam Comerford
National Hydrology Manager, Water Management team

Cc: Mike Pocock, Affinity Water (via DMPconsultation@affinitywater.co.uk)
Darren Leftley & Kane Horton, Commercial Water Development team, Canal & River Trust

Spatial Planning and the Economy
Environment Department
Hertfordshire County Council
County Hall
Hertford
Hertfordshire
SG13 8DN

Monday 2nd October 2017

**Affinity Water –**
**Draft Drought Management Plan (DMP) consultation**

Dear Sir/Madam,

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. These services include schools, transport, planning, fire and public safety, libraries, social care, trading standards and waste management.

Hertfordshire County Council welcomes the opportunity to respond to Affinity Water's draft Drought Management Plan and 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.

In 2015, Hertfordshire County Council, along with its partners, commissioned The Hertfordshire Water Study 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.

The study provides an evidence base for the current round of local plans and a guide to future infrastructure needs beyond the current plan periods. This will assist in ensuring that any barriers which might prevent the long-term delivery of housing growth are removed. The study will also form the basis for Hertfordshire submissions to the next round of water resource plans not only for Affinity Water, but also for Thames Water and Anglian Water which will be due for submission next year.

## Response to Affinity's main questions:

***What do you think of the proposed levels of service and how acceptable?***

Affinity's proposed levels of service and how they seek to manage demand for water first before instigating supply side measures, is considered acceptable. Restrictions on use and the implementation of permits and drought order restrictions are necessary when water levels become low. Affinity has stated they are secure against a severe drought at least until the next AMP, when investment requirements will be reviewed. The Water Study in

Hertfordshire has shown that water supply and wastewater will need investment after 2031 to sustain the predicted growth in the region, and this will be necessary when considering drought mitigation measures in the longer term.

*Your views on how Affinity plan to monitor the impacts of the environment?*
Hertfordshire County Council welcomes the acknowledgement of climate change, population increase and abstraction license changes within the plan and the possible impacts for water supply. Trigger zones hope to mitigate demand with repairs to leakage, publicity, metering, and temporary bans reducing demand and in turn reducing the impact on the environment.

The draft drought management 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.

Affinity has stated they are working on pre-drought mitigation measures on a number of rivers in the AMP6 (2015 – 2020). River restoration is one way to enhance channel velocity (in periods of low levels) and create a variety of habitats and ecosystems which are more resilient to drought. **Although, there is limited information within the plan on what would be done to help the environment recover once the drought is over?**

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. **Have Affinity anticipated what development growth would do to the environment if extraction had to be induced sooner than expected over the next few years?**

Affinity has produced a new way to monitor supply. A water balance model has been built based on the forecasted available supply and demand under long term drought conditions for each Hydraulic Demand Zone (HDZ).The supply/demand forecast is carried out for each potential drought scenario so actions can be considered for each Drought Trigger Zone. Evidence uses an examination of actual drought conditions compared to the baseline Source Reliable Output assessment used in the water resources management plan. **Has the modelling and data taken account of growth over the years?**

*General Comments*
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 at least 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. 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. Resilience needs to be planned for in the short and long term to

ensure the interventions are secure. More demand due to growth will put more pressures on the system. In particular, will the five triggers zones be enough to support water supply with the increase in population over the coming years?

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. Understanding water supply needs up to 2051 has helped unlock some of the uncertainty over the timing of potential interventions.

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.

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 caused by climatic changes 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 have on the environment? What will happen to the environment and habitats if they require more water in increasingly dry conditions and more people?**

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.

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.

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. Hertfordshire County Council and its partners look forward to participating in the next round of consultation for the Water Resources Management.

Kind Regards,
Sally Talbot
Planning Officer (Spatial Planning)

*Matthew Balfour*
*Cabinet Member for Planning, Highways, Transport and Waste*

Kent County Council
kent.gov.uk

Secretary of State
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Our Ref:
Date: 02 October 2017

Dear Secretary of State

**Response to consultation on Affinity Water Draft Drought Plan**

Thank you for this opportunity to comment on Affinity Water's draft Drought Management Plan (DMP) for the period 2018 to 2023.

Affinity Water (AW) provides water supply services to nearly 15% of the Kent land area, covering most of Shepway District, nearly half of Dover District and a small part of the Canterbury City Council area. These services are vital to the economy and environment and to the health and wellbeing of people. We therefore look to AW to provide high standards of service in normal years and during periods of drought.

Kent has faced three droughts in the last 20 years with the last one in 2011/2012 being saved from reaching a very serious situation only by a rare and very fortunate spell of prolonged, heavy, summer rainfall. From our own investigations[1,2] Kent County Council (KCC) is also aware that climate change is leading to an increased risk of serious drought in this part of the country. We are therefore very pleased that this was addressed through the Water UK 'Water resources long-term planning framework' in 2016 and that that excellent work is now being translated into improved water company drought plans that consider more severe droughts than we have seen in the recent historical record.

The AW supply area covers a large part of north London and parts of Essex in addition to the relatively small area in the southeast of Kent (Water Resource Zone 7 (WRZ7)). We recognise that WRZ7 represents just 5% of the company's total customers and some of its water supply characteristics are quite different from the rest of the company: For example, its local water resources are 100%

[1] Risks and Opportunities for Water: An analysis of long term risks and opportunities for water systems in Kent. KCC (2012)
[2] Kent Spatial Risk Assessment for Water. URS Infrastructure and Environment Ltd. (2014)

groundwater and 90% of its customers have already had water meters for a number of years. Nevertheless, WRZ7 is the main focus of KCC's interests and this is reflected in our comments on the draft DMP.

KCC is pleased to see a number of improvements that have been incorporated within this draft DMP, in particular:

- The improvements to the Drought Trigger Zones that provide a more logical structure for the decisions and actions needed during an escalating drought.
- The scenario modelling for a range of droughts of different length, timing and severity that go beyond the recent historic records.
  We are reassured that the WRZ7 is resilient to droughts of up to 5 years duration as clearly shown in Appendix J of the Technical Report. However, this is somewhat undermined by two seemingly contradictory statements within the main report:

  On page 58, under the heading of '*Results without transfers and without drought management'* it is stated that "*In WRZ7 (Dour) there is sensitivity to only the most severe droughts that are significantly worse than those in the historic record*". But in the conclusions on page 62 it is stated that WRZ7 is one of "*...the most vulnerable to drought owing to the magnitude of WRZ demand relative to WRZ supplies*". KCC seeks clarity on this point.

  KCC recognises that the relative timing of the publication of the DMP and WRMP is not within AW's control, however this does appear to raise issues for WRZ7: Housing growth within the area covered by WRZ7 is increasing rapidly and the Kent Water for Sustainable Growth Study[3] shows that AW'S current Water Resources Management Plan (WRMP 2014) only accounts for some 27% of the housing growth now expected to be in place by 2031. If, as stated on page 62 of the draft DMP, the magnitude of demand relative to supplies is so critical for drought planning within WRZ7, then we have to question the validity of the draft DMP in the absence of a WRMP that includes up to date information on future balance of water demand and supply. It would seem better to have a DMP that is published along with, or shortly after, the WRMP. However, in the absence of that, KCC requests some further information on the sensitivity of the results of the draft DMP to the demand and supply balance in WRZ7.

  Kent is served by 5 water companies, each is publishing its draft DMP at a different time and AW is the first to do so. This makes it difficult to comment on the issue of imports from neighbouring companies that would be available in a

[3] Kent Water for Sustainable Growth Study. AECOM (2017).

drought situation as these cannot be checked against the draft DPs of those companies. We therefore have to assume that the Environment Agency (EA) will provide the strategic oversight to address such interdependencies between the companies' draft DMPs.

Figure 2 on page 13 illustrates the overlap and linkage between the DMP and the company's Emergency Plan however the latter is not available on the AW website. KCC also has emergency planning responsibilities and is a member of the Kent Resilience Forum (KRF). The KRF also has a drought plan and this is somewhat broader in its scope than the water companies' DMPs. We observe that Section 1.3.2.1 of the EA document 'Drought response: Our framework for England' states that "*The water companies will communicate in advance with local councils, emergency services and local resilience forums about how best this is co-ordinated in a major drought emergency. This level of detail will not be in their drought plans.*"

KCC notes the details of the potential Drought Permits that AW would seek to implement within Drought Trigger Zone 4, the Environmental Assessments that have been undertaken on these, and the statement in Appendix 5 that "*No other activities are expected to be impacted on. The impacts on other permitted rights of abstraction are likely to be negligible*". We have considered the locations of nearby Special Areas of Conservation, Sites of Special Scientific Interest and Local Nature Reserves in relation to the River Dour and, given that they are all at significantly higher elevation than the river corridor, we concur that impacts from minor changes to low flows in the River Dour are most unlikely to affect these sites.

Yours sincerely

[redacted]

Matthew Balfour

Good Afternoon

The Transport and Environment Committee at Berkhamsted Town Council has asked me to reply to the above consolation which closes on 2 October 2017.

Having reviewed the consultation papers, Affinity Water is obviously preparing very thoroughly for various drought scenarios demonstrating that it is a responsible authority. Berkhamsted is situated on the edge of The Chilterns where the rare chalk streams can often fall to very low levels during droughts. The Town Council would ask that extraction from such water sources be kept to an absolute minimum in order to protect their unique and much valued ecosystems.

Kind regards

Janet Mason

Town Clerk

Berkhamsted Town Council

Dear Sir / Madam,

Thank you for asking Manningtree Town Council to review your drought management plan. We have no comments to make other than that we are pleased to know that you have a plan should there be a drought.

Kind Regards
Line Djuve-Wood
Clerk to Manningtree Town Council

# Chesham Town Council Consultation Response to Affinity Water's Draft Drought Management Plan 2017

We welcome this comprehensive and clear set of plans for managing the public water supply in drought conditions.

The substantial increase in demand for water during dry years strongly supports Affinity Water's strong emphasis on managing demand for water first before instigating supply-side measures. We are pleased to see Affinity Water's commitment to reducing leakage upon entering Drought Zone 3, although we would welcome an increase in leakage activity upon entering Drought Zone 2 to start tackling more leakage earlier during a drought.

It is reassuring that Affinity Water believes that even during a drought as severe as that of 1976, there would be no need for an emergency drought order and that stand pipes and rota cuts would only be used in a civil emergency.

**Drought Trigger Zones**

Drought Trigger Zone 3 is said to correspond to a 1 in 10 year drought event (p. 32), but includes the groundwater levels recorded during 1997, which is described later in the document (p. 44) as a 1 in 200 year return event, so we are not clear on what Zone 3 corresponds to.

The conditions experienced on the Upper Chess do not seem to fit well with the Drought Trigger Zones; which is a cause for concern as it may mean that action is not being taken rapidly enough in this catchment. The upper reaches of the Chess (below the traditionally ephemeral stretches) were dry in Chesham for several months in 2016 and 2017 before we saw an increase in communication with customers and stakeholders to increase awareness of drought (an activity associated with Drought Zone Two). Furthermore, on page 108 it is stated that 'After reaching Drought Zone 3 and with drought conditions becoming more severe, chalk groundwater levels would be declining, resulting in the upper reaches of chalk streams drying out', but the Chess upper reaches are dry long before Zone 3 is reached. This would suggest that the groundwater monitoring points used for the Central Region do not reflect what is happening in the Chess catchment.

This is further reinforced by Table 19 on page 93 which looks at the potential environmental impacts from supply-side drought actions (which start in Zone 2). One of the examples of potential impact is 'prolonged period of no flow, resulting in potential for (i) loss of aquatic macrophytes and invasion of terrestrial plants, (ii) drying of river bed and loss of habitat for aquatic fauna and (iii) fish kills'. All three of these events have occurred on the River Chess before Drought Zone Two is reached. What can be done about this, as it would be beneficial to encourage customers to start reducing their water demand far earlier to help protect the Chess? Could additional monitoring in the local area help? There are local voluntary groups who could work in partnership with Affinity Water and the Environment Agency to achieve

additional monitoring; as has been done in the ongoing Low Flows Alleviation Study on the Upper Chess.

**Drought Forecasting**
Section 3.3.2 looks at the relationship between rainfall, recharge and soil moisture deficit. Is this relationship changing with increasing urbanisation, or is the level of change in infiltration insignificant in terms of its impact on water resources? If it is a significant change, is the change taken into account when looking at this relationship over time?

**Temporary Use Bans**
We appreciate that the Statutory Exceptions for Temporary Use Bans are not set by Affinity Water, but to have an exception for filling or maintaining a domestic swimming or paddling pool when done using a hand-held container seems unnecessary. This could still result in significant, non-essential water use, especially when public pools would still be open as normal.

We support Affinity Water's decision to implement Temporary Use Bans on all 11 activities simultaneously, as this will be the clearest way of putting the TUB into place and will cause least confusion to customers.

**Increasing Deployable Output of Sources**
We are concerned that abstraction constraints can be lifted and that sustainability reduction sources can be re-commissioned during severe drought scenarios. Whilst we appreciate these options will be used only when droughts worsen, this will apply additional pressures to environmentally-sensitive areas that will already be suffering from the drought conditions. Whilst the Chess is not directly affected by this, increased abstraction from the Misbourne catchment might have the potential to negatively impact on the groundwater levels in the Chess catchment.

Table 16 looks at the risks associated with supply side actions in all of the Drought Zones. We are concerned about the environmental assessment of the risk associated with the 'Additional Outputs' option for Zone 3. In the Summary of Possible Environmental Impacts, it says that the impacts will be low as abstractions will remain within licensed limits. However, the Chess catchment is categorised as 'over-licensed'. This would indicate that increasing abstraction in our catchment would cause environmental damage and feel that additional monitoring would be required to assess this risk.

**Environmental Impacts**
We are pleased to note on page 90 that the aim of the plan is to manage and, where possible, improve the water resource position during drought to make water available to customers **whilst minimising impact on the environment.**

**Environmental Monitoring**
The information on page 102 suggests that additional monitoring isn't undertaken until Drought Zone 4 with the application for a drought permit or drought order. Is this correct? As a number of the actions that could be implemented prior to applying for a drought

permit or order could have an environmental impact (e.g. additional outputs within a licence), it would seem prudent to increase monitoring for these actions, too.

**Communication Plan**

It is very positive that, in light of experience from the 2012 drought, direct communications with customers will be favoured for a future drought. We believe that this will be more effective than relying heavily on local radio and newspapers.

WATFORD BOROUGH COUNCIL

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Secretary of State for Environment, Food & Rural Affairs
Drought Plan Consultation
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Nobel House
17 Smith Square
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October 2nd 2017

Dear Mr Pocock,

**RE Draft Drought Management Plan**

Dear Mr Pocock

Thank you for providing Watford Borough Council with the opportunity to comment on the Draft Drought Management Plan. At this time Watford Borough Council does not wish to submit any comments on the Management Plan itself, however, the Council recognises the importance of water management, including potential drought and flood issues, particularly given the water stress in the wider south-east area and is supportive of a strategy being in place should there be a future drought event.

This is an officer level response on behalf of the Watford Borough Planning Policy team.

Yours sincerely,

[redacted]

Jack Green MRTPI
Principal Planning Officer
Place Shaping and Corporate Performance

# Epping Upland Parish Council

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Parish Clerk: Mrs Val Evans MILCM

LOCAL COUNCIL AWARD SCHEME FOUNDATION

29 September 2017

Secretary of State
Department for Environment Food and Rural Affairs (Defra)
Drought Plan Consultation - Water Resources
Area 3D
Nobel House
17 Smith Square
London
SW1P 3JR

Dear Sir/Madam

**Affinity – draft Drought Management Plan 2018 - 2033**

I refer to the consultation for the above for which please see below this Council's comments –

- concerns that the water table is much lower than it used to be
- by using water in the environment this would make it even lower with the consequent effect on streams, ponds and the local environment
- would suggest that consideration be given to increasing the supply
- further concern as it was understood that Affinity had said that it could see no problem in supplying the increased housing and businesses in the Epping Forest District Local Plan

If there is anything further you require please let me know.

Yours sincerely

Mrs Val Evans
Clerk to the Council

I have the following comments on the Affinity Water Drought Management Plan:

1. I note the comments in the draft plan "that previous investigations have identified a link between BOWB abstraction and flow in the River Ver. Therefore, we will only submit a drought permit application for this site, when we are facing unprecedented levels of groundwater availability." However, I consider that the extraction of water from the sources related to the River Ver should not be permitted, as Affinity Water have not been able to estimate the likely impact and should there be unprecedented levels of ground water availability it is likely that the river will already be adversely affected.

2. The actions in the plan are almost entirely directed at the domestic user. The explanations in the plan should be expanded to include consideration of the commercial user, if only to explain to the domestic user the approach being taken. In particular, consideration should be given the restriction or prohibition of water use by Golf Courses and other high users of water for leisure purposes. Consumers are irritated when they are told to stop using hose pipes if they then see private golf courses using irrigators to disperse thousands of gallons of water. Even if the course has their own source, the impact on groundwater levels should be accounted for and restrictions implemented. The plan does state that the definition of a 'garden' has been "widened to include: a park; gardens open to the public; a lawn; a grass verge; an area of grass used for sport or recreation; an allotment garden; any area of an allotment used for non-commercial purposes; any other green space. It does not include: agricultural land; other land used in the course of a business for the purposes of growing, for sale or commercial use, any crops, fruit, vegetables or other plants; land used for the purposes of a National Plant Collection; a temporary garden or flower display; plants (including plant organs, seeds, crops and trees) which are in an outdoor pot or in the ground, under cover." The use of the term garden should be changed so that this is clearer to the public. There also needs to be an explanation of what an area of grass used for sport or recreation includes.

However, the plan also notes that "an area of grass used for sport or recreation is included in the definition of a garden. This exception would only apply to the active strip/playing area, and not the entire ground. The remaining ground can still be watered using other methods". This would therefore still permit golf courses to water large areas.

Regards,

[redacted]

I would like to request that Affinity Water is required to reduce abstraction from the Misbourne River. If they did this, the river would run continuously, with all the attendant environmental benefits.

For too long has too much water been abstracted to the detriment of wildlife, the environment and the people of the Misbourne Valley

Thank you

[redacted]

Resident, Chalfont St Peter