Affinity Water

Your local supply, on tap

Our Statement of Response

Revised Water Resources Management Plan, 2013

November 2013

Security Notice
In order to preserve the security of our operations we have not named our individual sites. Where we refer to a specific location, we have used the name of the community served

Asset Management document control sheet

Document amendment history

Version	Status	Date	Amendment to this version
1.0	Issue	6/11/13	First issue
1.1	Update	8/11/13	Comments from MP
2.0	Issue	10/11/13	Comments from SM
3.0	Issue	11/11/13	Comments from AM
4.0	Issue	12/11/13	Comments from TM
5.0	Issue	15/11/13	Issued as final draft
6.0	Issue	15/11/13	Issued to DEFRA, EA, Ofwat, CCWater and CCG
6.1	Issue	19/11/13	Minor correction to cost table in summary and table 17

Document approval

Document title	Draft Water Resources Management Plan			
	Name	Signature	Title	Date
Author/originator	M Pocock		Physical Asset Manager	19/11/13
Reviewer	S Martin		Director of Asset Management	19/11/13
Approver 1 (internal use)	T Monod		Director of Legal & Regulation	19/11/13
Approver 2 (external use)	R Bienfait		Chief Executive Officer, Affinity Water	19/11/13

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Executive Summary

We sought the views of our customers and stakeholders on our draft Water Resources Management Plan (WRMP) and investment proposals between May and August 2013. In this Statement of Response, we have shown how we have considered each response together with other feedback we received on our WRMP and Business Plan proposals. We explain how we have revised our WRMP in response to customer and stakeholder views, including feedback on our technical analysis from the Environment Agency, Ofwat and the Consumer Council for Water. We have also taken account of the latest data of population and housing growth forecasts, which has altered the scope, scale and timing of investments. However, our overall strategy remains consistent with our draft WRMP with leakage reduction and, in our Central region, universal metering coupled with enhanced water efficiency activities, together with making best use of our existing supplies and sharing resources with other water companies in the South East of England. We are confident that our revised WRMP balances the needs of customers and stakeholders as well as those of the environment within a cost envelope that is acceptable.

Our WRMP is a key component of our Business Plan for PR14 and all resource requirements needed to implement solutions to solve the supply / demand balance are included in our Business Plan.

We received a wide range of views from 81 respondents and the key themes arising from our draft WRMP consultation responses were:

- Support for our plans to reduce leakage beyond the economic level together with a preference for a greater response to leakage management in times of water scarcity;
- Support for our plans to reduce abstraction where environmental damage is occurring, and acceptance for the impact on bills;
- Calls for commitments to fully assess the natural environment, built environment, heritage and archaeological aspects prior to the delivery of the projects in our Preferred Plan;
- A desire to see Affinity Water take a greater role in championing the protection of rare chalk stream habitats across the South East of England;
- Support for our plans to deliver a programme of universal metering, coupled with water efficiency awareness, to help customers reduce their consumption and save money, but seeking assurance that we have enough flexibility in our WRMP to accommodate variance in our forecast of 13.6% demand reduction;
- However, more information is needed to show that we will be able to support vulnerable customers via transitional arrangements and social tariffs and for the logic underpinning the order of implementation by water resource zone;
- Support for drought resilience proposals, and a number of consultees asked us to explain why we had not included reservoirs, desalination and grey water use in the options in our Preferred Plan;
- Requests from third parties for additional clarity about how we had considered options from outside our operating area to manage the supply / demand balance;
- Further explanation about the water use and future needs of non-domestic customers, including the percentage that are metered and consideration for agricultural requirements;

– The need to agree and align bulk transfers between donor and recipient companies.

We have assessed both formal responses to our plan and other stakeholder feedback collected as part of our integrated programme of consultation for our business plan and changed our WRMP in response to the consultation as detailed below.

– We have **carried out a substantial amount of customer and stakeholder consultation** using a variety of methods to establish support for the proposals in our draft WRMP. Generally, our plans were supported. A number of consultees asked for our abstractions to be reduced further, even when not cost beneficial. We have agreed with the Environment Agency where sustainability reductions are to be undertaken where they are cost beneficial and our WRMP is compliant with the latest information from the Agency (NEP3, August 2013). In our Business Plan, investment is included under our National Environment Programme to implement the confirmed sustainability reductions and continue the investigation of the impact of our abstractions on the environment. We will investigate the potential for further sustainability reductions from the 'uncertain' classification of sources and we have included provision through our Business Plan change protocol for the implementation of these measures, when they are confirmed to us as an outcome of the forthcoming River Basin Management Plans.

– We have also carried out **willingness to pay and bill acceptability studies**. Customers have demonstrated clear preferences for demand management measures (leakage and water efficiency) over increasing abstraction from rivers. Customers that we have engaged with as part of our wider consultation share generally the same views as the consultees responding to our draft WRMP consultation.

– We have **slowed our universal metering programme**, in response to the Consumer Council for Water's comments, so that metering will be delivered approximately equally over two AMPs. We have been developing our communications campaign, taking account of reports such as the Consumer Council for Water's report *The Customer Impact of Universal Metering Programmes (May 2013)*.

– We have continued to work on our **delivery programme for household metering and water efficiency** as well as the introduction of social tariffs and the transition plan to support our customers, as requested by the Consumer Council for Water. We have considered the impact of transitional arrangements on achieving demand savings and to compensate for this, we have enhanced our communications and water efficiency provisions. In this way, we have managed the risk such that it does change the options in our Preferred Plan.

– We have improved our water efficiency programme to **include more educational awareness** and expand the future role of our Education Centre team in Bushey, as many of our customers would like to see us working more with local schools to educate the next generation. We have been able to do this without increasing costs by changing the balance of components of our overall water efficiency programme; this does not have an effect on the options chosen in our Plan.

– We have thoroughly **reviewed our levels of service analysis**, in response to comments from both the Agency and Ofwat, and provided further evidence in support of our assessment. This does not have an impact on the options selected in our Preferred Plan.

  • We plan to introduce a **delay to the implementation of temporary use restrictions for economically vulnerable non-household customers**, such that they receive a slightly higher level of service.

  • We explain that **emergency drought orders for additional abstraction** where it harms the environment would be at **no greater frequency than 1 in 118 years**.

- We have clarified that we consider **emergency drought orders for the use of standpipes are unacceptable** and we are not planning for their use in anything other than civil emergency conditions.
- We will update our Drought Management Plan in 2014 with these changes for consistency.

– We have undertaken additional detailed analysis to show we can continue to supply customers after the **implementation of sustainability reductions**, without affecting their levels of service. There is an additional cost associated with this work that we highlighted in our draft Plan. We have concluded our investigations and are able to explain where we need to make changes to our infrastructure to preserve resilience and the quality of water supplied to our customers for the 42 Ml/d of sustainability reductions to be delivered in AMP6 and the remaining 28 Ml/d in AMP7. We have defined all individual project investments to implement what we need to do and how much it will cost, and are pleased to inform our customers that this will cost less than we identified in our draft WRMP. This has been made possible by retaining some peak licence at one of our sources in Stevenage whilst still reducing average abstraction by 90%.

– We have taken account of the **latest Census data** (2011) in our revised demand forecast. As population is projected to grow at a faster rate than we expected in our draft WRMP, and that our base population was greater than we had planned for in our draft WRMP, we have had to introduce new options to meet the deficits, particularly towards the end of the planning period.

– We have reviewed our **headroom assessment** for our baseline demand forecast to ensure we had fully considered all of the uncertainties around our supply / demand balance. We have responded to feedback on our Plan from Anglian Water and allowed for uncertainties in our bulk transfer from our shared reservoir resource. Details of this change are included in our revised WRMP.

– We have **removed a third party licence groundwater option from our feasible options list** in response to the Agency's concerns that there was no existing licence at this location. This option was selected in our draft WRMP but is no longer available for our revised WRMP.

– We have accounted for the **impacts of climate change on our options** in our modelling, as requested by the Agency. This affects a small number of groundwater schemes, and results in these options being less cost-beneficial later in the planning period and so less likely to be selected.

– We have **concluded our negotiations with regard to bulk transfers of water from our neighbouring water companies and other third party suppliers** so that our respective Plans are consistent with WRSE, as requested by the Agency, Ofwat and the Consumer Council for Water. We show our proposed utilisation of the agreed bulk transfers in section 11.4 of our revised WRMP. We have continued to participate in the concluding phase of work of the WRSE project and are pleased with the alignment between our proposals and the outcomes of the WRSE modelling.

– We have **run additional scenarios** to address customers' views, for example offering reservoirs and desalination options taking account of their significant impact on the environment. We have also run scenarios where all options that have been classified as high and medium risk with respect to the environment are not available, to show the impact on costs.

– We have reflected the **uncertainty of our Preferred Plan in our headroom assessment**, as required by the Agency, and discussed its impact on our WRMP. Some consultees were concerned we had insufficient headroom and that we were overly reliant on our proposed

universal metering programme and bulk transfers from other water companies, who, during drought may be unable to meet our needs. We have also considered contingency options that we may need to develop should our Preferred Plan fail to deliver the benefits projected.

– We have **continued to assess the environmental impact of our options** as part of our Strategic Environmental Assessment (SEA), as requested by the Agency and Natural England. Our assessment shows that the options in the first ten years of our Preferred Plan will not cause deterioration in ecological status in accordance with the Water Framework Directive and that the options in the remainder of the planning period are very unlikely to cause deterioration. We will continue to review our future projects as part of our annual review of our WRMP, and will investigate potential deterioration effects as necessary so that we are able to draw firm conclusions to ensure no deterioration through adoption of alternative solutions well before any option is included in subsequent WRMPs. This approach does not affect the selection of options in our modelling.

– We will **develop a non-technical summary document,** as suggested by the Consumer Council for Water to accompany our WRMP, to aid customer and stakeholder understanding. We will follow the style of our Business Plan consultation document, which was generally well received. We will publish our non-technical summary together with our final WRMP.

The table below shows the breakdown of total cost by component of our revised WRMP investment programme. The costs are shown in the five-year period in which they are incurred, and are presented in 2011/12 prices. The costs shown include capital investment, operational expenditure, capital maintenance, and environmental, social and carbon costs.

Total Expenditure, £ millions	**AMP6** 2015-20	**AMP7** 2020-25	**AMP8** 2025-30	**AMP9** 2030-35	**AMP10** 2035-40	***TOTAL*** *2015-40*
Leakage	19.08	14.71	18.22	31.85	44.01	*127.87*
Metering	57.85	51.29	3.76	35.21	31.23	*179.34*
Water efficiency	3.16	2.20	0.28	1.07	2.57	*9.28*
Demand Management schemes	**80.09**	**68.20**	**22.26**	**68.13**	**77.81**	***316.49***
Supply (ground & surface water)	5.26	1.96	0.71	5.52	26.90	*40.35*
Bulk transfers	0.59	0.60	0.45	2.10	2.90	*6.64*
Network Constraints	0.00	6.73	5.97	2.18	7.67	*22.55*
Supply side schemes	**5.85**	**9.29**	**7.13**	**9.80**	**37.47**	***85.45***
Total per AMP for Supply and Demand	**85.94**	**77.49**	**29.39**	**77.93**	**115.28**	***401.94***
WFD no deterioration investigative works	0.25	0.25	0.25	0.25	0.25	*1.25*
Delivery of Sustainability Reductions	10.54	0.00	0.00	0.00	0.00	*10.54*
TOTAL	**96.73**	**77.74**	**29.64**	**78.18**	**115.53**	***397.82***

** *Estimated to mitigate sustainability reductions beyond AMP7 has not been determined. Our change protocol will apply to ensure that we meet our obligations.*

As a result of discussions with the Environment Agency in November 2013 (see Appendix B2), we have included provision for an early start on the implementation of sustainability reductions measures as part of transitional expenditure in 2014/15 and we have included a change

process in our Business Plan to make provision for the implementation of new obligations in AMP6.

We will continue to work closely with our key stakeholders, including the Environment Agency in particular, with regard to the implementation and monitoring of our Plan. The substantial changes we are proposing to our operations to be able to reduce our abstractions will be a challenge but our Plan preserves resilience of supplies to customers at all times.

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1 Introduction

1.1 Need for a Statement of Response

Water companies in England and Wales are required by law to produce a **Water Resources Management Plan** (WRMP) every five years. The Plan must set out how a water company intends to maintain the balance between water supply and demand over a 25-year period. The Plan has been compiled in accordance with the Water Resources Planning Guideline (WRPG), developed by Government and water industry regulators. It also takes account of and supports Government policy and aspirations for providing secure, sustainable and affordable water supplies to customers.

The WRPG Guiding Principles from DEFRA sets out the statutory process for developing a water resources management plan, with 19 steps highlighted.

Figure 1 gives the key to party responsibility for each step of the process.

The process flow in Figure 2 is taken from the WRPG Guiding Principles.

Figure 1: Key to party responsibility for each step of the process

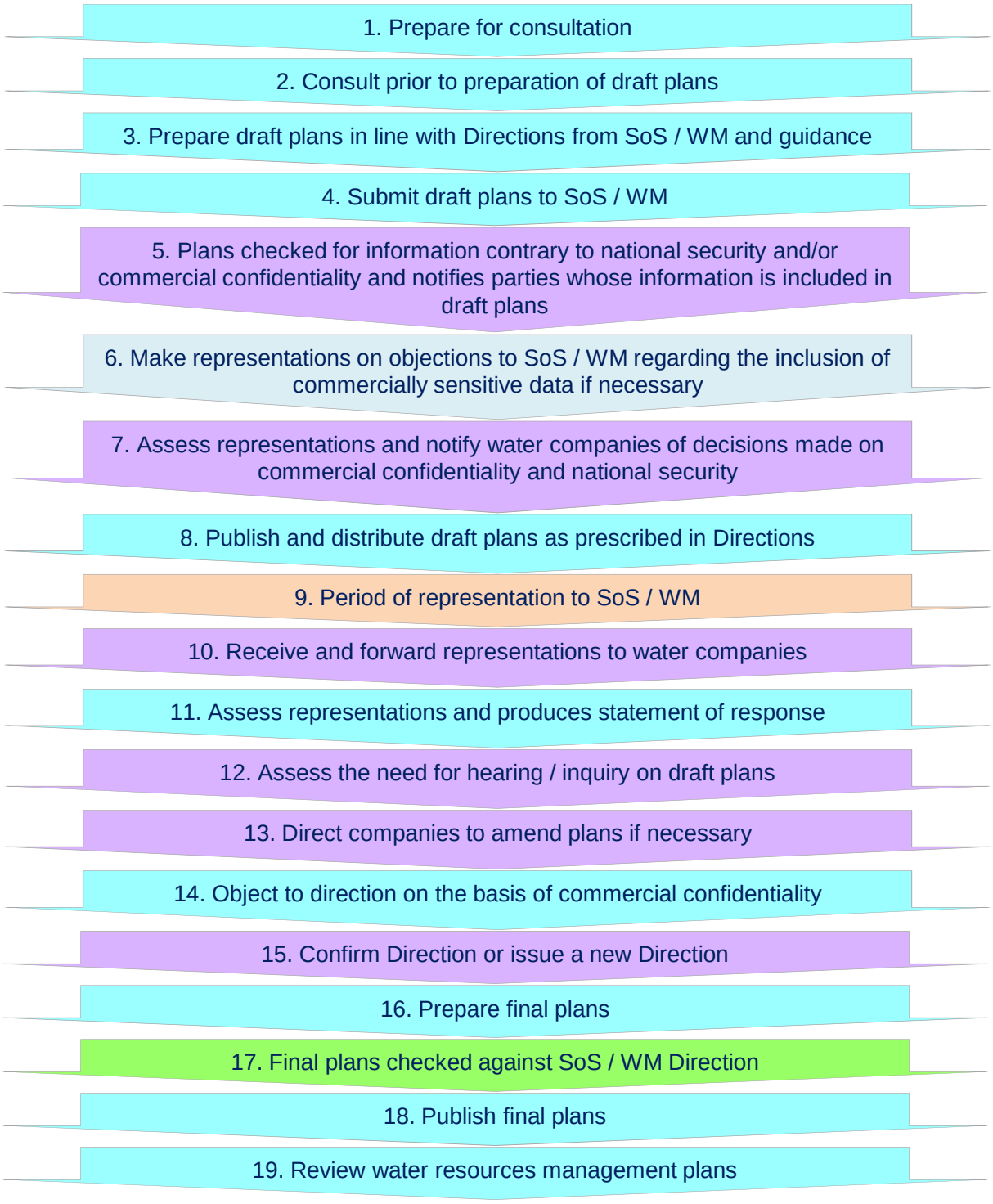


Figure 2: Process for developing a water resources management plan

In accordance with Step 11, we have assessed all of the representations we received on our draft WRMP, including six responses that we received after the closure of our consultation period. We are required to produce a **Statement of Response** (SoR), this document, explaining how we have considered these representations (see section 4 of this report) and how we have changed our WRMP as a result (see section 5 of this report).

Our SoR should include:

- An explanation of how we have considered the representations we received on our draft plan;
- An outline of any changes we have made to our plan and the reasons for making these changes;
- A clear explanation of how the changes affect parts or the whole of the plan;
- Any changes in timing and schemes selected to maintain a balance of supply;
- An explanation where we have not made changes as a result of representations.

We have **revised our draft WRMP** in conjunction with our SoR to demonstrate how our Plan has changed. We have taken care to ensure that our revised Plan is as close in format and structure to our draft Plan as possible and we have highlighted the changes of note.

Figure 3 describes where our SoR sits between our draft WRMP and revised WRMP.

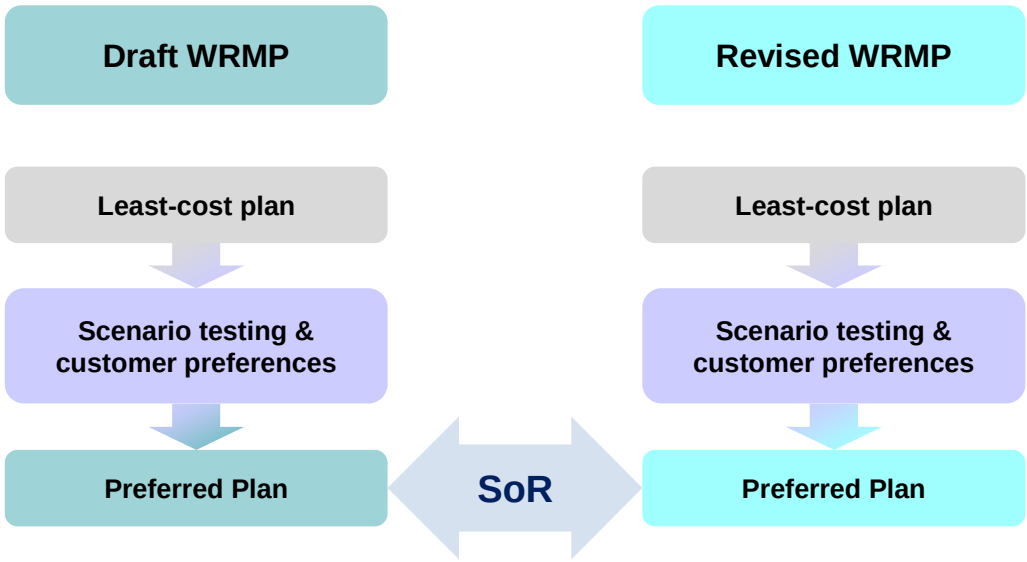


Figure 3: Where our SoR sits between our draft WRMP and revised WRMP

We have also chosen to resubmit our Water Resources Planning tables and updated key technical reports with our SoR to evidence the additional work we have carried out in parallel with the consultation.

1.2 Timeline

The timeline for our main WRMP activities is shown in Figure 2.

We published our draft WRMP on 17th May 2013 following direction from DEFRA, and the consultation period remained open for 12 weeks until 12th August 2013.

We are required to submit our SoR within 26 weeks of publishing our draft WRMP.

Subject to approval by the Secretary of State, we expect to publish our final WRMP early in 2014.

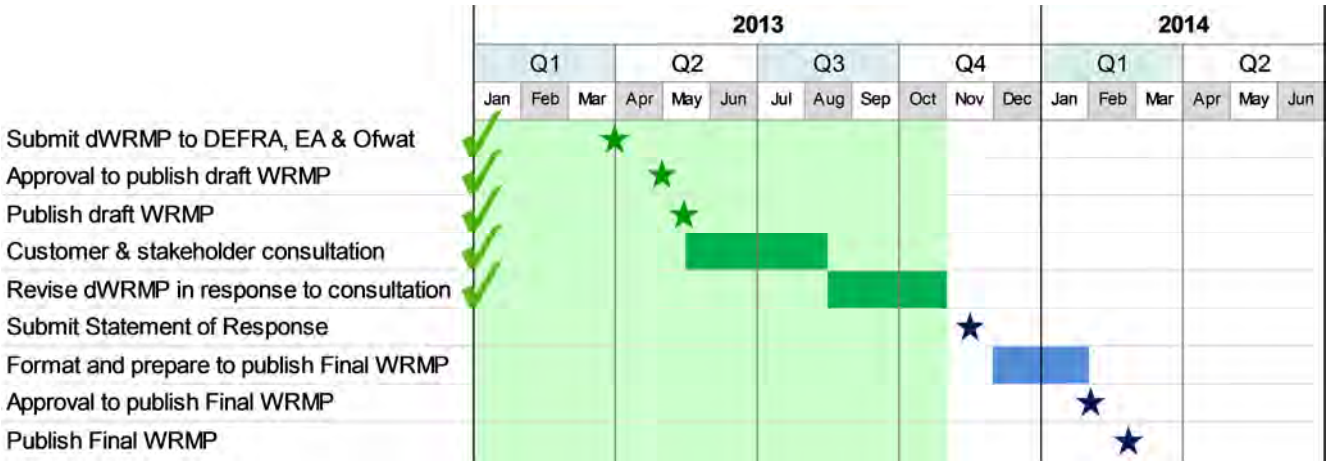


Figure 4: Timeline for WRMP process

1.3 Communicating with consultees

We notified a wide range of key stakeholders and interest groups that our Plan had been published for consultation in May 2013. The list of stakeholders and consultees is given in Appendix B: *List of Stakeholders and Consultees* of our WRMP.

We will publish this SoR on our website, and we will formally notify all consultees identified in Appendix B of our draft WRMP together with all individuals and organisations who commented on our Plan during the consultation phase. Printed copies of our SoR will be provided on request.

1.4 Changes that have influenced our revised WRMP

1.4.1 Our consultation

We received **81 responses** from a variety of stakeholders, including the **Environment Agency**, **Ofwat**, **the Consumer Council for Water**, **Natural England**, **English Heritage**, and the **Canal & Rivers Trust** as well as **local authorities** and **parish councils**. We received six responses after the closure of our consultation period, but have chosen to include them in our analysis. We are pleased to have received a considerable number of responses from **residents** living in our area.

1.4.2 Further engagement during the consultation period

The audience for a draft WRMP consultation is self-selecting, such that those who are obliged or feel minded to respond are more likely to give us feedback than customers and stakeholders who have little reason to contact a water company. As responses to consultation of any type tend to reflect the vested interests of the respondents, it is likely that the views expressed in the themes arising from our draft WRMP consultation are biased to their particular views and interests.

We have prepared a new Technical Report, 3.8: *Engaging Customers in Future Planning*, that provides the results of our consultation. Appended to this report is a suite of documents providing detailed results of our engagement programme that we have used to justify the proposals in our revised WRMP. We have prepared this report for submission with our SoR and revised WRMP.

We felt it was important to gather feedback that was **statistically representative of our customer base** as part of our overall business planning engagement programme to compare with the consultees who responded to our draft WRMP consultation to better understand any bias or conflicts between the consultation required by the WRPG and other avenues of engagement.

We have received over 12,000 individual pieces of feedback from customers as part of our Business Plan engagement activity, which includes our draft WRMP consultation. The type, quality and quantity of responses are important for us to consider in assessing all feedback. We developed robust criteria to evaluate the feedback we received in order to understand how responses should **influence**, **inform** and **provide insight** to our Plan.

The additional engagement activities we have undertaken include:

- Questionnaires to our statistically representative online panel;
- A large-scale questionnaire on general water topics called “Let’s Talk Water” that received over 3,500 responses;
- Environmental forums with local interest groups and environmental regulators; and
- Deliberative forums with our customers.

We have also carried out **willingness to pay** and **bill acceptability studies** in conjunction with our Business Plan consultation programme. The challenges that our WRMP must address have had an impact on our business strategy and it was essential for us to understand customer preferences on all elements of their service, not just having enough water for their needs.

All of the additional engagement that we have carried out during the consultation period is described in detail in Technical Report, 3.8: *Engaging Customers in Future Planning*.

1.4.3 Our Data & Models

Since the submission of our draft WRMP to DEFRA on 30th March 2013, we have updated our models and the data used by those models in light of new information.

- **Updated household and population forecasts** provided by consultants Experian in May 2013, accounting for the Census in 2011, which changes our demand forecast. Not only is

our base population greater, population is projected to increase by 17% by 2040, compared to 14% in our draft WRMP;

- Changes to the **volumes of sustainability reductions** following discussions with the Agency, confirmed to us in August 2013, as to how the changes will be implemented at a detailed hydraulic demand zone level and to avoid the wider use of water with elevated levels of metaldehyde to maintain high quality drinking water. Our Southeast region no longer has sustainability reductions, reducing the supply / demand deficit;
- Analysis of the **impacts of the sustainability reductions** in much more detail, within our water resource zones, to ensure that we do not have deficits. We have been able to design the schemes that need to be delivered prior to the implementation of the sustainability reductions to ensure we can supply water to all areas of our Central region, maintain our customers' security of supply and preserve levels of service;
- Further analysis of our **levels of service calculations** and ongoing dialogue with the Agency to ensure that they are satisfied with our rigour. We have clarified how these relate to the levels of service provided to customers;
- Modifications to our **micro-component and demand forecast models** to map directly to the Environment Agency's Water Resource Planning tables to improve quality assurance;
- Reviews of our **headroom assessment** following feedback from our consultees, our auditors and neighbouring water companies to ensure that our assessment of uncertainty and the associated 'buffer' between supply and demand was appropriate and robust. We have agreed with Anglian Water to include the uncertainty associated with the bulk transfer we receive from Anglian Water and so our headroom in the early years is higher for our revised WRMP than for our draft WRMP, but lower at the end of the planning period. Our risk profile remains the same;
- Refinement of our **leakage cost curves**, making best use of our leakage management data to ensure that the costs to deliver our leakage options are more accurate. This has resulted in a higher level of background leakage, and a steeper curve for the greater levels of leakage reduction. This change means we have increased the long-term availability of leakage options in our economic modelling;
- Reviewing our **customer supply pipe leakage repair costs**, which we found to be less (on average) than what we had assumed in our draft WRMP. Conversely, evidence from Southern Water's universal metering programme suggests a higher percentage of supply pipes needed repair than we had assumed in our draft WRMP. Combining these changes meant we increased the forecast of repairs in our metering options, resulting in a higher yield without increasing the total costs. This change improves the cost benefit of metering;
- Checking that **water trading options from neighbouring companies and third parties remained feasible**, updating with latest pricing data where provided. Where companies have entered into heads of terms for bulk supplies, those supplies are no longer available to us as feasible options. We remain consistent with the outcomes of the Water Resources in the South East project;
- Improvements to our **Economics of Balancing Supply and Demand model** to determine more discrete changes in leakage management at Water Resource Zone level. This means our model is able to choose any value for leakage reduction within a given range where it is economic;
- Review of our feasible options costs in light of the **unit cost** work being carried out as part of our Business Plan submission to ensure that the cost build-up from two different methods are comparable;

- Integrating the outcomes of **willingness to pay, bill acceptability** and **customer preference** studies as constraints in our modelling;
- Developing our **community engagement programme** to support universal metering and water efficiency campaigns underpinning our WRMP;
- Reviewing and updating our **Strategic Environment Assessment** of our feasible options to be able to show, as far as reasonably practicable, no deterioration in ecological status as required by the Water Framework Directive.

1.4.4 Governance and assurance

As a result of our draft WRMP consultation, we have received feedback from the Environment Agency, Ofwat and the Consumer Council for Water. Details of how we have taken account of this feedback is given in Appendices B, C and D respectively.

Following the consultation period, we have received a number of challenges on particular subjects from our Customer Challenge Group. We have responded to these challenges to explain our rationale and justify our proposals. A copy of these responses is included in Appendix E.

In September 2013, we were invited to provide additional information on our WRMP and Business Plan to the Environment Agency in order that they would be able to provide their view of the robustness of our Plan to our Customer Challenge Group and to DEFRA. A copy of the information we have provided is included in Appendix B2, including our letter of assurance that we have included all requirements to deliver our WRMP in our Business Plan.

Our Directors and Board have closely monitored the development of our water resources strategy, our WRMP and our supply / demand investment proposals for our Business Plan. Our Board has endorsed our revised WRMP for submission to DEFRA.

At various points in the development of our WRMP, we have been subject to third party audits and assurance of our methods, data, modelling and interpretation. We have taken appropriate action to address areas for improvement, which are addressed by the points described in section 1.4.3.

2 Engagement programme: pre-consultation phase

2.1 Introduction

During 2012 and early 2013, we carried out a number of activities as part of the pre-consultation phase in order to understand customers' views in the development of our draft WRMP.

2.2 Methods

2.2.1 Investing for your community

During 2012, we published a consultation document *Investing for your Community (October 2012)* which introduced the key aspects of our thinking in terms of our future plans. The document set out the primary elements that inform our Strategic Direction Statement, our Strategic Environmental Assessment Scoping Report and our draft Water Resources Management Plan. It sought the views of our customers on four proposed customer expectations. We also asked five specific questions and offered a choice of answers asking how we should respond to the challenges we face.

The publication described these challenges; the levels of service available and the implications for customer bills and invited comment on the options available to us.

2.2.2 Have your say

A new web channel 'Have Your Say' was set up to capture feedback on our plans. Customers were offered the option to complete an interactive online questionnaire posing specific questions about the impact of our operations. The channel offered access to a number of primary documents including *Investing for your Community (October 2012)* and our *Strategic Environmental Assessment Scoping Report (September 2012).*

2.2.3 Postal surveys

In October 2012, we wrote to our statutory consultees and our regulators, as well as to a further 900 representative bodies to consult them on *Investing for your Community (October 2012)*. This included local environmental interest groups, MPs, MEPs, parish councils, local and district councils, social welfare bodies, commercial organisations and other representative public interest groups.

A further 200 letters went out inviting feedback on our Strategic Environmental Assessment Scoping Report (September 2012).

2.2.4 Drop-in events

We arranged ten drop-in events that took place between October and December 2012 in our local communities across our regions. The events offered customers the opportunity to drop in on an ad hoc basis to talk with us about any aspect of our plans. The drop-in events were promoted widely through local press advertising, news events and our website.

2.2.5 Qualitative focus groups

Between October and December 2012, we conducted ten independently run focus groups with customers looking for qualitative feedback on our plans. In one group, we consulted small to medium sized enterprises in the sports and leisure sector and the remainder were domestic customer groups across the demographic and geographic range of our customer profile.

2.2.6 Online customer panel

We set up an online panel (independently run by research body ResearchNow) made up of 2000 customers. The sample group was profiled to ensure it was a geo-demographic reflection of our customer groups across our regions. We scheduled panel surveys throughout 2013 and this provided us with a statistically significant number of quantitative responses to key issues posed to the panel.

During this pre-consultation, we ran two panels:

– **December 2012:** a generic fact-finding questionnaire, to enable us to focus in on issues of most concern to our customers, covering topics such as contact, metering principles, water efficiency, planned work, waste water, difficulty paying bills, restrictions, and service values.

– **February 2013:** a survey designed to inform the development of our draft WRMP, including questions on metering, bill frequency, quality of information, stepped tariffs, water saving devices, leakage fix rates, and the importance of the environment.

2.2.7 Billing booklet

We send out over 900,000 accompanying pamphlets with water bills each year. During 2013, we included information prompting for feedback on our plans. We will continue to use this as an avenue of engagement in the future.

2.2.8 Environmental forum

During November 2012, we launched an environmental forum to give voice to the views of environmental groups representative of customers affected by our operations. A second meeting took place during February 2013 to debate key issues and options and gain meaningful input to our plans.

2.3 Results of the pre-consultation phase

2.3.1 Quantitative feedback

Across our online panel of 2,000 members, a total of 949 responses were received from the two customer surveys delivered in December 2012 and February 2013. The profile of responses maps the geo-demographic spread of customers across our water resource zones (WRZ). For each survey, customers were asked to respond to a multiple-choice questionnaire. Customers were also invited to leave comments at the end of each survey.

We received 448 completed responses to our generic fact-finding questionnaire from December 2012[1]. The results included:

- Regarding the household's use of water, 5% consider themselves 'high' users, with 57% 'medium' and 38% 'low' users.
- When asked to rate their water efficiency on a scale of 1 to 10 where 1 was "I don't think about water efficiency – I use as much as I want" and 10 was "I actively reduce my use of water by taking actions, e.g. short showers, only doing full loads of washing etc.", 17% selected 5 or lower, 54% selected a number between 6 and 8 inclusive, whilst 29% selected 9 or above.
- When asked how effective metering is in saving water, with a scale of 1 (very ineffective) to 5 (very effective), 67% selected 4 or above, with 2% selecting 1.
- When asked whether all customers should be metered, 36% said no, customers should be able to choose, with the remaining responses selecting either yes, it is the fairest way to pay for what you use or yes, as it helps to encourage water efficiency.
- When asked if their use of water was restricted in the last year, 43% said no. Of the 57% that said yes, 85% cited that they were affected by the hosepipe ban. Most customers (69%) felt the restrictions they faced were a minor inconvenience.
- When asked if additional support should be provided to customers who have difficulty in paying for their water bill, 21% felt that sufficient safe guards already existed, whilst 14% did not know. 38% felt that personalised payment plans should be provided, 29% felt that targeting specific groups and working with support agencies would help, whilst 17% felt that a lower tariff should be offered, funded by customers. This is pertinent to our proposals for universal metering.

We received 501 completed responses to our water resources questionnaire from February 2013[2]. The results included:

- When asked if meters are the fairest way for everyone to pay for the water they use, 75% said yes, 15% said no, whilst 10% did not know.
- 55% of customers felt that a household water meter would save them money on their water bill, whilst 27% disagreed and 18% did not know.
- 69% of customers would like to receive more information about their water use with their water bill. 23% did not want to receive more information, whilst 8% did not know.

[1] Office for Public Management, Panel Survey Findings report, September 2013: survey 1
[2] Office for Public Management, Panel Survey Findings report, September 2013: survey 2

- When asked about a compulsory metering programme, 77% of respondents felt that everyone should have a meter whilst 14% felt they should only be installed in areas of short supply. A further 9% did not know.
- 87% of customers said they would use water saving devices such as water butts and toilet cistern devices if we supplied them. 5% of customers said they would not use them, and 8% did not know.
- 75% of respondents felt we should increase the rate at which we fix leaks on our network. 11% disagreed, and 14% did not know.
- However, 69% of customers would not be prepared to see an increase in their water bill to allow leaks to be fixed at a faster rate; 15% said they would pay more, with another 15% saying they did not know.
- 87% of respondents agreed that the local environment was important to them, whilst 8% disagreed. 75% of customers would like us to carry out more evaluations at our water sources in order to understand the impact on the local environment.
- However, 31% of customers felt that having as much tap water as they wanted / needed was more important to them than the local environment. 44% of customers felt that the environment was more important, whilst 25% did not know.
- 65% of customers would be prepared to reduce the amount of water they used to keep local rivers and streams flowing, whilst 13% would not.
- 59% of customers would not be prepared to see an increase in their water bill to avoid harm to the environment; 23% said they would pay more, with another 18% saying they did not know.

Detailed analysis of all quantitative feedback has been undertaken by a third party and is appended to Technical Report 3.8: *Engaging Customers in Future Planning*.

2.3.2 Qualitative feedback

The first phase researched the views of domestic and small commercial customers as well as environmental stakeholders on the four customer expectations published in our Business Plan consultation document *Investing for Your Community (October 2012)*:

- Making sure our customers have enough water;
- Supplying high quality water you can trust;
- Minimising disruption in your community;
- Providing a value for money service.

The aim of the study was to collect information about attitudes, opinions and preferences that would assist us in understanding customer issues, including those related to the WRMP. The first stage of the study used focus groups to gain the views of domestic customers and small and medium commercial customers, whilst stakeholder views were captured from a workshop.

We achieved over 180 responses to the pre-consultation phase via *Investing for your Community (October 2012)*. A further 80 individuals attended our focus groups and around 50 fed their thoughts back through their attendance at an Environmental Forum. These responses,

coupled with views gathered from over 100 ad-hoc emails and letters, make up the qualitative response to our pre-consultation exercise.

Key responses relating to the WRMP were that customers wanted us to:

- Stop abstraction where damage is occurring;
- Act to reduce consumption, provide free water efficient appliance fittings and advice to customers;
- Reduce leakage;
- Install meters systematically in water stressed areas provided it is cost-beneficial.

There was a divided response over increasing bills to reduce the frequency of applying restrictions between 'under all conditions' and 'no change'. We sought to explore this during the draft WRMP consultation period and present our findings later in this document.

2.3.3 Customer Challenge Group

Our Customer Challenge Group (CCG) was set up in 2012 to provide us with a means for our plans to be constructively challenged to ensure that they are accepted by customers.

Our CCG was formed in July 2012, is independently chaired and meets regularly.

The role of the CCG is to operate independently of the company to review our customer engagement process. The CCG has considered the emerging evidence to ensure that customers' views are properly taken into account as we develop our plans. The CCG has a mandate to challenge the phasing, scope and scale of work required to deliver outcomes and the degree to which it is socially, economically and environmentally sustainable. The CCG advises Ofwat on the effectiveness of our engagement and whether it considers that our Business Plan reflects a sound understanding and reasonable balance of customers' views.

Throughout our engagement programme we have welcomed the feedback and active participation of our CCG in all aspects of our activities from review and comment on our proposed online panel surveys to attendance at focus groups.

The Chair of our CCG has provided the following feedback on our draft WRMP in March 2013:

> *"The Customer Challenge Group (CCG) has taken a keen interest in the draft WRMP, as it underpins the Business Plan that Affinity Water will submit to Ofwat. Affinity Water colleagues have provided several briefings to the CCG, and CCG members provided their thoughts on the consultation process. The CCG has been presented with the results of the pre-consultation engagement and looks forward to seeing the views expressed in those results carried forward into the draft WRMP consultation."*

2.4 Other consultation

2.4.1 The Water Resources in the South East Group

The Water Resources in the South East Group (WRSE) was set up to review how the six regional water companies should utilise the strategic water resource in the most efficient and effective way. Along with the five other water companies, we provided data on our water availability and our forecast customer demand to facilitate modelling of regional resource needs in the next 25 years. We also provided details of all options for meeting any water deficits. The cost data from all water companies and the modelling approach to date has been subject to independent review.

Our input to the WRSE process has included engagement with the Environment Agency, Ofwat, DEFRA, the Consumer Council for Water and Natural England, as well as with other companies to explore options for best use of resources across the South East.

Companies are expected to explain how their WRMPs are influenced by the outcomes of the WRSE project.

We describe the WRSE modelling and how we have used the outcomes to inform the development of our Plan in section 9 of our revised WRMP. Recent validation runs by the WRSE group confirmed our Plan remains consistent with the WRSE modelling and the Plans of our neighbouring water companies.

Our East region, in East Anglia, is not part of the area covered by the WRSE project; however, we are participating in the Water Resources East Anglia (WREA) project, which has similar objectives to WRSE, although it did not have any outputs to inform this round of Plans. Our Central and East regions are part of WREA and we expect to have results to inform our WRMP in 2019.

2.4.2 Other water companies and third parties

We have held discussions with all of our neighbouring water companies with respect to water trading opportunities.

These discussions explored the potential to create new cross-border supplies between companies as well as opportunities to vary existing agreements for water supply imports and exports from or to our operating area. Such water trading can offer the most efficient way of sharing regional resources for the benefit of all customers. Our discussions with Anglian Water also considered the use of our shared assets and existing transfer arrangements.

2.4.3 Water industry regulators

We have worked closely with all of our regulators, and in particular the Environment Agency, in the development of our Plan. Detailed discussions took place with regard to sustainability reductions and during the various stages of development of our potential options for meeting supply / demand deficits.

When we published our previous Water Resources Management Plan in 2010, we considered the effect of future sustainability reductions and the Environment Agency asked us to include for reductions of 15Ml/d by 2015. We included proposals for universal metering to reduce demand for water and these were accepted by the Secretary of State but we were not able to demonstrate a robust cost-benefit case to Ofwat in our AMP5 Business Plan. Consequently, we

have not implemented universal metering in AMP5, but we have maintained our optant metering programme.

Since then, we have worked closely with DEFRA, the Environment Agency and our fellow water companies, particularly as an active participant in the WRSE project, to agree how we can plan properly for this risk in our Plan. DEFRA and the Agency in particular have supported and challenged our desire to ensure our revised Plan takes proper account of potential sustainability reductions.

For our draft WRMP, we considered the Guiding Principles that form part of the WRPG, which provides that companies with consumption above the national average should reduce that consumption. We therefore proposed a programme featuring demand management measures. We also included options for universal metering which is permitted by the Water Industry (Prescribed Conditions) Regulation 1999, which state that companies in water stressed areas need to evaluate compulsory metering alongside other options.

We have included the sustainability reductions agreed with the Environment Agency in the baseline supply / demand forecast of our Plan, which have been updated since the publication of our draft WRMP following further discussions with the Agency. This means we are able to identify investment needs and consult with our customers on the cost impact.

2.4.4 Local interest groups and other stakeholders

We included local interest groups and community organisations in our customer consultation programme.

We are often invited to present at local interest group meetings and to participate in group discussions. Many are keen to receive an update on the progress of sustainability reductions that could impact on the status of their local rivers.

We have received a number of responses from local interest groups in response to our consultation on our draft WRMP, and many have told us that they participated in the Let's Talk Water campaign.

Consultation has also taken place as part of our Strategic Environmental Assessment (SEA). We engaged with the three statutory environmental consultation bodies (English Heritage, the Environment Agency and Natural England) together with a number of non-statutory consultees including county and district councils, wildlife trusts, and recreation and amenity groups. Section 3.7 of our revised WRMP refers.

3 Engagement programme: consultation phase

3.1 Introduction

As described in section 2, we undertook various forms of engagement and consultation to inform the development of our draft WRMP. We have continued to engage with customers and stakeholders to ensure that our revised WRMP provides the best balance between their preferences, the protection of the environment, Government aspirations and value for money.

This section provides a broad description of the activities we carried out during the consultation phase. We explain our assessment of the results of the consultation in section 4 and how the outcomes of the consultation phase have influenced and informed our revised Plan in section 5.

Further details of the outcome of each of the following elements of consultation and how we have considered these are appended to our Technical Report 3.8: *Engaging Customers in Future Planning* as follows:

- Technical Report 3.8.1: *Engagement Planning Phases*
- Technical Report 3.8.2: *Panel Survey Findings*
- Technical Report 3.8.3: *Environmental Forum Report*
- Technical Report 3.8.4: *A Review of our Plan Following Feedback from our Regulators*
- Technical Report 3.8.5: *draft WRMP Response Log* (also appended to this SoR in Appendix A)
- Technical Report 3.8.6: *Let's Talk Water*
- Technical Report 3.8.7: *Willingness to Pay Study*
- Technical Report 3.8.8: *Bill Acceptability Study*
- Technical Report 3.8.9: *Deliberative Forum Report*
- Technical Report 3.8.10: *Customer Challenge Group Briefing Pack*

3.2 Methods

3.2.1 Draft Water Resources Management Plan consultation

3.2.1.1 Introduction

Consultees were invited to share their views on how well the proposals set out in our draft WRMP balanced the challenges that we face now and in the future. We were particularly keen to understand their views on five key issues, as outlined below.

3.2.1.2 Leakage

Our draft Plan proposed to spend more on repairing pipes than is cost effective for the volume of water saved. We asked customers and stakeholders to consider two questions:

- *Do you agree with this approach?*
- *Weather conditions can have a significant impact on the level of leakage, should our targets be altered to reflect this?*

3.2.1.3 Sustainability Reductions

To enable local river environments to improve we propose replacing or reducing abstraction from those sources likely to be impacting on them. Our initial analysis suggested this could increase customers' water bills by around £10. We asked customers:

- *Are you willing for bills to rise to enable this to be achieved?*

3.2.1.4 Water Efficiency and Metering

We think metering is the fairest way to pay for water. We also think we need to do more ourselves and to help everyone else in being more efficient in the use of water. To do this, we proposed a universal metering programme in our draft WRMP. The cheapest way to meter is achieved via street-by-street installation, fitting a meter to every property that does not currently have one, whilst promoting water efficiency. We asked customers:

- *Do you agree?*

3.2.1.5 Drought resilience

Our experience of the 2012 drought highlighted the need for us to invest around £15.5M to improve the security of water supplies in the case of future severe water shortage in South East of England. We included this investment in our draft WRMP. We asked customers:

- *Should this investment be made?*

3.2.2 Online panels

During the consultation phase, we made use of our independent online panel to run further surveys providing robust quantitative responses to key issues. The panels we ran during the consultation phase of our engagement programme are listed below.

- **May 2013:** testing to seek support for a proposal to include environmental measures within our four proposed outcomes, including questions on environmental impacts and associated investment.
- **July 2013:** a leakage survey to establish if customers believe we manage leakage appropriately, preferences for how to report leakage, options for leakage repair rates, willingness to pay to reduce leakage beyond the economic level, relationship between restrictions and leakage fix rates, management of customers' supply pipes and leakage targets.

– **August 2013:** a survey investigating views on abstraction, bill levels linked to sustainability measures, our strategy on demand management, investment in drought resilience, and temporary use restriction (hosepipe ban) rates.
– **August 2013:** a survey seeking customer views on the principle of providing social tariffs for vulnerable customers.

Learning from the earlier panel surveys of the pre-consultation phase, we worked harder on the format and delivery of the surveys for this phase to provide customers with simply stated and meaningful information about complex issues against which they could feel better able to respond. We grouped questions by topic and for each group provided an initial statement in plain language about the issue.

We also added a final question to surveys to gauge the success of this approach, their comprehension of the issues and the effect this had on customer support of our plans.

3.2.3 Let's talk water

As part of the Business Plan consultation, we ran a campaign to gather feedback from the public on our plans. The campaign was publicised widely in local press to promote a substantial response. The survey was accessible as an interactive form on our website and paper versions were promoted and made available at events throughout our regions. We also ran the same survey with our customer profiled online panel during the consultation period to validate the findings of the self-selecting audience that completed the web and paper versions.

The 'Let's Talk Water' survey asked 19 closed questions about customer perceptions of their water use, metering, leakage, water saving devices, abstraction, water quality and affordability.

3.2.4 Environmental forum

We commissioned an agency to undertake a series of workshop forums to elicit feedback from stakeholders representing the views of customers with an interest in the environment. Our aim was to explore the views of participants around our four customer expectations. We sought to understand their perspective on key issues of resource planning including the relationship between the impact of abstraction and managing demand and the key themes and objectives set out in our Strategic Environmental Assessment (SEA).

We undertook four workshops across our regions in November 2012, February 2013 and July 2013.

3.2.5 Willingness to pay

As part of our business planning process we asked consultants ICS Consulting and Eftec (Economics for the Environment Consultancy) to undertake a series of customer stated preference studies to ascertain customer preferences for different service improvements. The value customers place on differing service measures was examined in a 'willingness to pay' study. As well as a main study, phase two of the work focused on water resources.

A number of key water service attributes formed the basis of the study – our Service Measure Framework is set out below:

- Drinking water notices (combined boil and do not drink);
- Water hardness;
- Discolouration;
- Taste and odour;
- Low pressure;
- 6-12 hour supply interruption;
- Water flooding to properties;
- Water restrictions (temporary use bans and non-essential use bans);
- Low flow rivers;
- Leakage.

The willingness to pay study was commissioned to provide quantitative evidence for use in investment optimisation.

3.2.6 Bill acceptability

We tested our preferred plan to see whether the bill associated with that plan would be acceptable to customers. This piece of work was jointly undertaken by consultants ICS Consulting and Eftec.

Our preferred plan was tested against several other possible options to determine whether this plan or another was the most acceptable plan in the view of customers.

This piece of work was used to determine the best service-bill combination for customers.

3.2.7 Deliberative forum

We asked consultancy Office for Public Management (OPM) to facilitate four deliberative forums for us across our regions in Clacton, Harrow, Folkestone and Bishops Stortford. The purpose of these events was to drill down in greater detail with customers to understand whether they felt we have the balance right between the service they receive and the bill they pay.

Discussion was qualitative in nature during the event though some quantitative data was obtained when participants were asked to vote on three topics at the beginning and again at the end of the day:

- The extent to which they felt well informed.
- Their trust of Affinity Water and their satisfaction of service levels.
- The value for money they perceive for their water service.

Around 50 domestic customers attended each event (approximately 200 in total). The audience was selected to broadly reflect the population in the geographic location in which each event was held, based on national census data.

3.2.8 Customer Challenge Group

Our CCG has included the following statement in their report on our Business Plan:

> *"Since its formation in July 2012, the Customer Challenge Group (CCG) has advised and challenged Affinity Water during each stage of the creation of its Business Plan for 2015-2020.*
>
> *We are completely independent of the company and our members comprise of both household and business customers, as well as representatives from regulators, local authorities, community and environmental groups. We meet regularly to examine Affinity Water's customer engagement programme and to consider whether the company is taking its customers' views into account when preparing its Business Pan for 2015 -2020. I also meet the Affinity Water Board to advise them on our work and to share any concerns that have been raised about the company's plans.*
>
> *We have ensured that the company has undertaken a comprehensive consultation, with a broad cross section of customers and stakeholders. We have closely examined how it has interpreted the results to ensure it is a fair and accurate reflection of customers' views.*
>
> *We are submitting our own report of our findings to Ofwat at the same time that this plan is presented."*

Further, the CCG report states:

> *"The CCG believes that throughout its customer engagement programme Affinity Water has followed the guidance recommended by Ofwat and UKWIR on Willingness to Pay. We believe the company used best practice on designing and delivering the other surveys. The company used external consultants with good reputations for expertise in this area. The engagement programmes were peer reviewed by experts. The outcomes from each stage were robust. Where necessary, the results were statistically significant."*

3.3 Results of the consultation phase

The results of the consultation phase have influenced the development of our revised WRMP. We describe the results of our consultation in section 4, and how our Plan has changed in section 5. Further detail about the various methods of stakeholder engagement and the results are provided in Technical Report 3.8: *Engaging Customers in Future Planning*.

4 Outcomes of our draft WRMP consultation

4.1 Introduction

In the development of our draft WRMP, we carried out consultation on our SEA and general water resources items that we used to shape our Plan for wider consultation.

In following the statutory process for consultation on the WRMP, we recognise that respondents are self-selecting, such that those who are obliged or feel minded to respond are more likely to give us feedback than customers and stakeholders who have little reason to contact a water company. As responses to consultation of any type tend to reflect the vested interests of the respondents, it is likely that the views expressed in the themes arising from our draft WRMP consultation are biased to their particular views and interests.

Consequently, we felt it was important to gather feedback that was **statistically representative of our customer base** to compare with the consultees who responded to our draft WRMP consultation to better understand any bias or conflicts between the consultation required by the WRPG and other avenues of engagement.

We carried out this additional engagement activity after the publication of our draft Plan in May 2013, including further questionnaires to our online panel, environmental forums with local interest groups, deliberative forums with customers, as well as work to understand customer and stakeholder preferences for programmes of investment, their willingness to pay and bill level acceptability in addition to our Business Plan consultation.

We have received over 12,000 individual pieces of feedback from customers as part of our Business Plan engagement activity, which includes our draft WRMP consultation. The type, quality and quantity of responses are important for us to consider in assessing all feedback. We developed robust criteria to evaluate the feedback we received in order to understand how responses should **influence**, **inform** and **provide insight** to our Plan.

In this section, we describe the consultation work that we have carried out and how the responses to our various avenues of consultation have informed and shaped our Preferred Plan for customers, communities and stakeholders.

4.2 Response to our draft WRMP consultation

4.2.1 General

DEFRA advised us of **81 responses** to our consultation, six of which were received after it formally closed.

The responses were from a wide range of organisations, including the Environment Agency, Ofwat, Natural England, English Heritage, the Canals and Rivers Trust and the Consumer Council for Water, as well as local interest groups and local councils.

The breakdown of responses by type is given in Table 1.

Contact Type	Count
Borough Council	3
Charity	1
County Council	5
District Council	3
Local Interest Group	14
National Group	3
Non-government organisation	4
Parish Council	6
Regulator	3
Resident	36
Town Council	2
Water Company	1
TOTAL	81

Table 1: Number of organisations responding to our draft WRMP consultation

As we are required to show how we have changed our WRMP in response to the consultation, we have considered each comment in detail. We have put all of the responses in a table together with a statement about what we have done to address each comment from our customers and stakeholders. We have also identified where in our WRMP and / or supporting Technical Reports we have changed our plans as a result of careful consideration of this feedback, and described this in section 5. The table of consultation responses is presented in Appendix A.

The key themes arising from the consultation responses were:

- Support for our plans to reduce leakage beyond the economic level together with a preference for a greater response to leakage management in times of water scarcity;
- Support for our plans to reduce abstraction where environmental damage is occurring, and acceptance for the impact on bills;
- Calls for commitments to fully assess the natural environment, built environment, heritage and archaeological aspects prior to the delivery of the projects in our Preferred Plan;
- A desire to see Affinity Water take a greater role in championing the protection of rare chalk stream habitats across the South East of England;
- Support for our plans to deliver a programme of universal metering, coupled with water efficiency awareness, to help customers reduce their consumption and save money, but seeking assurance that we have enough flexibility in our WRMP to accommodate variance in our forecast of 13.6% demand reduction;
- However, more information is needed to show that we will be able to support vulnerable customers via transitional arrangements and social tariffs and for the logic underpinning the order of implementation by WRZ;

- Support for drought resilience proposals, although a number of consultees asked us to explain why we had not included reservoirs, desalination and grey water use in the options in our Preferred Plan;
- Requests from third parties for additional clarity about how we had considered options from outside our operating area to manage the supply / demand balance;
- Further explanation about the water use and future needs of non-domestic customers, including the percentage that are metered and consideration for agricultural requirements;
- The need to agree and align bulk transfers between donor and recipient companies.

These themes were verified by a third party consultant, OPM.

4.2.2 Consultee comments

We also analysed all of the comments from our consultees to determine which topics were most often mentioned.

Figure 5 is a 'word cloud' of topics commented on, where the size of the text is representative of the number of times key words or phrases linked to a given topic is mentioned; the more frequent the topic, the larger the size of text.

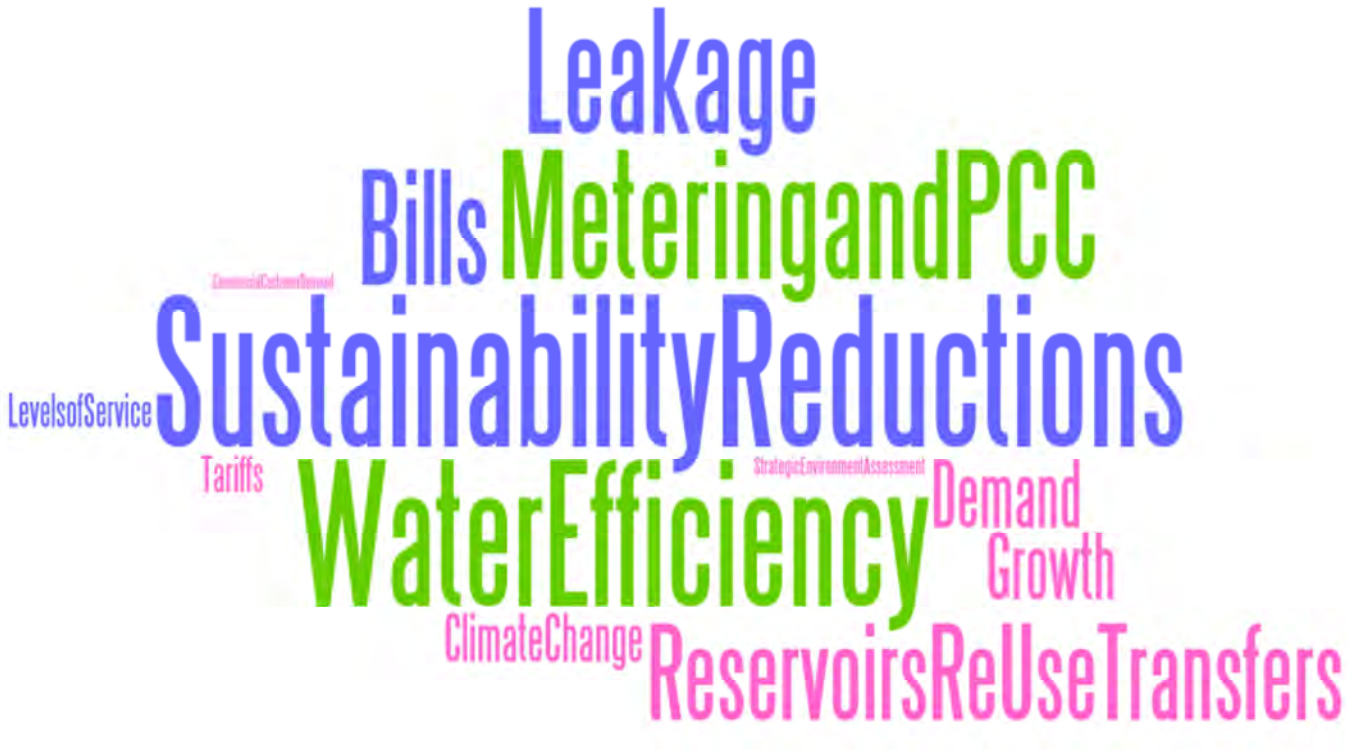


Figure 5: Word cloud of key topics identified by customers in our consultation

We note that environmental themes continue to be raised by both customers and stakeholders, including the need to reduce leakage, promote sustainable abstraction, and ensure that vulnerable customers are supported in the delivery of our universal metering programme.

A number of consultees asked us why our plans did not include new reservoirs and, for our Southeast region, desalination.

Some consultees suggested water companies should be given a greater say in future growth proposals, as it was unsustainable to continue increasing the population in an area of water scarcity.

There was strong support for encouraging water efficiency, with consultees proposing that we undertake more work to engage with and educate the next generation.

Some consultees felt we should take a greater role in championing the habitats of globally rare chalk streams.

4.2.3 Response to consultation questions

We analysed each of the responses we received. Some of the responses we received did not make a specific reference to the consultation questions. We have assessed each response as one of the following four categories:

- Yes: supportive of the proposal
- Part: some support for the proposal, but with comments
- No: disagrees with the proposal
- No response: no discernible response to the question

The responses to our consultation questions are given in Table 2.

	Balance of draft WRMP	Leakage below ELL	Leakage target linked to weather	Sustainability Reductions	Metering & Water Efficiency	Drought Resilience
	% response	% response	% response	% response	% response	% response
Yes	45.7%	42.0%	16.0%	50.6%	58.0%	38.3%
Part	14.8%	14.8%	0.0%	17.3%	7.4%	12.3%
No	0.0%	2.5%	8.6%	2.5%	0.0%	2.5%
no response	39.5%	40.7%	75.3%	29.6%	34.6%	46.9%

Table 2: draft WRMP consultation responses to key questions

Table 3 shows the response to our consultation questions with the 'no response' category excluded.

	Balance of draft WRMP	Leakage below ELL	Leakage target linked to weather	Sustainability Reductions	Metering & Water Efficiency	Drought Resilience
	% response	% response	% response	% response	% response	% response
Yes	75.5%	70.8%	65.0%	71.9%	88.7%	72.1%
Part	24.5%	25.0%	0.0%	24.6%	11.3%	23.3%
No	0.0%	4.2%	35.0%	3.5%	0.0%	4.7%
no response	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table 3: draft WRMP consultation responses to key questions – no responses excluded

Generally, there was support for all of our proposals. However, there are also a number of very insightful and useful suggestions and queries from our consultees. We explain how our revised Plan has been influenced by our consultees in section 5.1.

4.3 Complimentary structured consultation

4.3.1 Summary of themes arising from other consultation

Our draft WRMP was circulated to statutory consultees as well as other persons and organisations with a stated interest in our plans. In addition, it was published on our website and made publicly available to any person wishing to review it.

Respondents to the consultation document responses are self-selecting, i.e. those who are obliged to respond or feel minded to respond. As responses to consultation of any type tend to reflect the vested interests of respondents, it is possible that the views expressed in the themes arising from our draft WRMP in section 4.2.1 are biased to their particular views and interests. To assess this, we also conducted complimentary stakeholder consultation using a range of structured and representative samples.

The majority of views from the draft WRMP consultee responses were largely supported by the outcomes of the other engagement activities, many of which utilised a controlled sample to ensure our customer population was properly reflected.

This section describes the results of the additional engagement we have undertaken during the period of consultation on our draft WRMP. The key themes overall are presented in Table 4.

Expectation	Key themes
Making sure our customers have enough water	– Customers tend to take water for granted and rarely think about what is involved in the delivery of water services. – While most customers support metering, some are reluctant to have one installed. – Customers want to see Affinity Water do more to reduce leakage and ensure water is not wasted. – Most customers perceive they are water efficient and would like to know how their consumption compared to others and how they can save water. – Customers support proposals to leave more water in the environment and make water resources more resilience but are reluctant to pay for improved environmental protection.
Supplying high quality water you can trust	– Customers are concerned about the hardness of their water, but are unwilling to pay more to reduce hardness. – Customers see the provision of high quality water as a core duty for Affinity Water and want investment maintained to protect and maintain high quality water to their taps.
Minimising disruption to you and your community	– Customers want to see the standards of service maintained, and are willing to pay slightly more to see this happen. – Only a small proportion of customers experience disruptions, however, those that do are very concerned when prolonged disruptions occur.
Providing a value for money service	– Customers are content with the bills they currently pay for Affinity Water's service, although they are concerned about any significant rise in their bills. – Many customers are concerned that some people struggle to pay their bills and want them helped; however, their views on social tariffs are mixed. – Customers support investment in assets to maintain the levels of service they want.
Communication	– Customers want more information about the challenges faced, and the actions and expenditure undertaken. This should be multi-channel and personalised to meet customer needs and preferences. – Customers are generally positive about Affinity Water staff and rarely have cause for concern about customer service.

Table 4: Key themes of customer priorities across all consultation channels

4.3.2 Neighbouring water companies

Following the publication of our draft WRMP, we have continued to hold discussions with neighbouring companies to ensure that the bulk supply options remained feasible, were consistent between our respective plans and to establish outline agreements and prices. The Agency identified this as a potential weakness in both the donor and recipient companies' Plans and asked that we ensure our revised Plans matched.

We explain the development of water trading options in section 8.2.2 of our revised WRMP, and set out which options we have agreed to proceed with in section 11.4 of our revised WRMP.

As part of the consultation process, we have engaged in particular with Thames Water, Anglian Water, South East Water and Southern Water.

- We have concluded our discussions with Thames Water about our bulk transfer volumes, which were previously not included in Thames Water's draft WRMP.
- We have accounted for the uncertainty in the available deployable output at Grafham Water, a resource we share with Anglian Water in our headroom assessment.
- We have an agreement in place between ourselves and South East Water regarding a bulk import of water for our Southeast region.
- We have also exchanged heads of terms for a small bulk import from Southern Water that is capable of delivering larger volumes for a short period in the event of planned outage.

4.3.3 Additional questionnaires to our online panel

4.3.3.1 Introduction

We described our online panel in section 2.2.6. These panels provide statistically robust assessment of particular aspects of our WRMP.

The questionnaires we asked prior to the publication of our draft WRMP helped inform our high level strategy, such as whether metering should be universal and whether leakage continues to be a priority for customers.

We were keen to explore aspects of our proposals in more detail during the consultation period. We felt that customers' views about our management of leakage and our ability to maintain a resilient supply would help us ensure that our Preferred Plan met the requirements of customers, stakeholders and the environment. We improved the style of questionnaire by setting out a statement before asking related questions.

As with the first questionnaires, we asked our CCG to review the questions to ensure we were asking the right questions for customers without being leading in the way we worded them.

Further details about the responses are given in Technical Report 3.8: *Engaging Customers in Future Planning*.

4.3.3.2 Leakage

We are aware that managing leakage remains a priority for our customers. Previous surveys have established that customers want us to reduce leakage beyond the economic level.

As leakage can be a complex subject, we structured the questionnaire with introductory statements that needed to be read before our online panel respondents were presented with questions related to each statement. We saw this as an opportunity to help some of our customers understand more about the way our business operates, potentially as a pilot for future awareness campaigns.

We wanted to know more about our customers' preferences for the way we went about delivering this enhanced programme of leakage reduction.

We asked customers:

- Do you think we manage leakage appropriately? 78% said yes.
- Should we try to explain leakage and its importance to our operations better than we currently do to customers? 73% said yes.
- What concerns you most about leakage? (Multiple options could be selected) 82% do not like seeing water wasted, 82% are concerned about the cost of controlling leakage, whilst 68% worry about the effect on their bill.
- Typically, we repair leaks within five days. Is a five day repair rate right? 45% said yes, it is about right whilst 50% said no, we should do it faster.
- Should we spend more money to reduce leakage beyond ELL? 41% said yes, 32% said no whilst 27% did not know.
- Is the rate at which we repair leaks more important during droughts? 76% said yes, we should respond faster in a drought.
- Should we do more to reduce pressure as method of leakage management? 68% said yes, but without affecting appliances and/or at low demand times.
- Should we continue to offer free repair of customer supply pipes when we find them leaking? 60% said yes to a free repair or subsidised replacement regardless of the size of leak, with the cost spread across all customers.
- Do you believe metering will encourage householders to take responsibility for own leakage if they know how much is being wasted and at what cost? 76% said yes.

We added a question at the end of the questionnaire to gauge comprehension of the complex issues being presented to understand the extent to which customers felt enabled to respond meaningfully and to assess the effect this had on customer support of our plans. The example for our leakage survey is set out below:

> *Question 16 (a):*
>
> *'We wanted to explain more about leakage and help our customers understand the challenges we face to strike the right balance between finding and fixing leaks and spending money wisely. Now you have finished the questionnaire, we would like to know if your view of our leakage management strategy has changed. Which of these statements is closest to how you feel now?'*

The response to this question is presented in Figure 6.

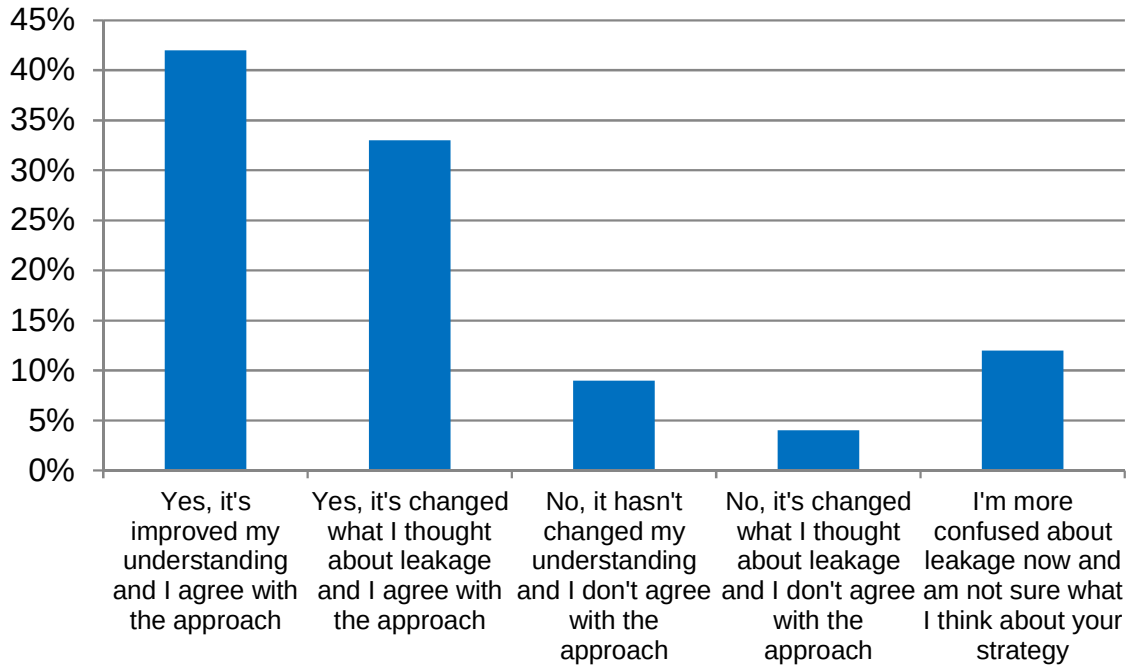


Figure 6: Response to final question of our leakage online panel, July 2013

As shown in Figure 6, 75% of respondents confirmed that it had either improved their understanding (42%) or changed what they thought about leakage (33%) and in all of those cases, agreed with our approach.

We are satisfied that the quality of our dialogue with customers is moving in the right direction. However, as we continue with our engagement plans in the future, our intention is to focus greater attention on simplifying the complex issues to enable customers to make meaningful contributions to our future planning.

4.3.3.3 Levels of Service, Sustainability Reductions & Drought Resilience

As the delivery of planned sustainability reductions would have an impact on the security of supply to our customers, we proposed to replace that lost resilience through additional investment. It was important to gain responses from a statistically representative sample of our customer base, rather than the self-selecting group that responded to our draft WRMP consultation. It was also important to establish if customers felt abstraction should resume in certain situations, or whether unsustainable abstractions should cease at all costs.

We also wanted to test the acceptability of restrictions, particularly the application of temporary use bans (TUBs), and whether additional investment should be made to protect customers against severe drought, such as the third successive dry winter that the South East of England suffered in 2011/12 that led many companies to apply TUBs.

As with the leakage questionnaire, we asked customers to read brief statements before answering related questions.

The outcomes of this online panel included:

- 72% agree to reducing abstraction to save drying rivers;
- 72% say a 1 in 10 year hosepipe ban (TUBs) is agreeable;
- 78% would pay an average extra £5.50 over 5 years to help adapt to sustainability reductions (refer to section 4.3.7);
- 69% agree with our demand management strategy to help deliver sustainability reductions (programme of leakage reduction, water efficiency and metering);
- 55% support the £15m investment to improve drought resilience.
- 68% support for resuming abstraction of sources subject to sustainability reductions under certain circumstances/conditions.

In addition, when asked what they thought about our survey:

- 67% believed our survey was understandable and agreed with our approach.

4.3.4 Willingness to Pay

We appointed specialist consultants to carry out both willingness to pay and bill acceptability studies. The studies aimed to deliver results that would support both our WRMP and the Business Plan.

During October 2013, our consultants reported on the outcomes of this study to estimate customer preferences for different service improvements.

The pilot survey tested the study framework with 100 household customers using an online survey.

The main survey took place between July 2013 and August 2013 and targeted 700 household customers via an online survey (350) and computer aided personal interview (350), a technique in which the interview took place in the respondent's home and was conducted by an interviewer using a computer programmed with the survey.

The target survey group was recruited as a representative household sample from within our supply area. Business customers (508) were recruited by telephone and completed an online survey.

Participants were asked to complete tasks that highlighted their preferences for different attributes relating to water resources. The experiment involved presenting participants with trade-off choices between attributes and asking them to choose their most and least preferred options.

The work resulted in a set of customer preference weights that demonstrate the relative preference for different options and programmes of investment. The weights relative to a base case of maintaining service at the current level and those in addition to a base case are presented in Table 5.

	Computer-aided personal interview (CAPI)		Online survey	
Water resource option	Weights	Weights in addition to base case	Weights	Weights in addition to base case
Base case: maintaining service	1.00	0.00	1.00	0.00
Take more from rivers	1.00	0.00	0.97	-0.03
Take more from the sea	3.08	2.08	2.63	1.63
Take more water from underground	2.69	1.69	1.96	0.96
Fix more leaks	2.55	1.55	6.23	5.23
Transfer more water	2.73	1.73	2.14	1.14
More water meters	1.82	0.82	3.21	2.21
More water efficiency	3.38	2.38	4.33	3.33

Table 5: Customer weightings for water resource options

Interpreted in terms of water resources options, the data highlighted the customer priorities given in Table 6.

Option	Online order of preference	CAPI order of preference	Combined order of preference
Fix more leaks	1	5	**1**
More water efficiency	2	1	**2**
Take more from the sea	4	2	**3**
More water meters	3	6	**4**
Transfer more water	5	3	**5**
Take more water from underground	6	4	**6**
Take more from rivers	7	7	**7**

Table 6: Customer priorities for water resource options

In the case of water restrictions, the data highlighted respondents' views on the perceived impact of a three-month ban on a household's day-to-day use, presented in Table 7.

	No impact	Slight impact	Moderate impact	Large impact	Very large impact
Hosepipe ban chance	39	34	19	6	1
Non Essential Use Ban chance	50	27	18	4	1

Table 7: Perceived impact of a water ban lasting three months

A full report on the water resources willingness to pay study and how it will be utilised is available in Technical Report 3.8.7: *Willingness to Pay Study.*

4.3.5 Bill Acceptability

We directly engaged with our customers during the bill acceptability element of our willingness to pay study to identify the most acceptable set of choices: their view of the best combination of service and bill level. We used the survey to determine the strength of feeling on attitudes to risk, the pace of changes to service level, the profile of bill increases and specific investment options.

The draft survey was tested in cognitive interviews with household and business customers during June 2013 to gauge comprehension of the survey framework.

This progressed to a pilot study with 139 households, conducted online. The results of the pilot study indicated a reasonable match between proposed investments and customers' priorities so the main acceptability survey was able to proceed largely unchanged.

During the main phase of work, 900 households (made up of 500 computer-aided personal interviews and 400 online respondents) along with 300 business customers were engaged in the study. This was split 400 per investment plan reviewed (300 domestic and 100 business), covering three plans in total.

The results from the study enabled us to establish customer preferences expressed as relative weights. These can be utilised as part of the willingness to pay study as estimates for water resource planning options over and above any environmental and social costs that are assessed separately in the WRMP. They also allow us to estimate customer relative values for different water use restrictions including hosepipe bans, non-essential use bans, frequency and duration.

A full report on the bill acceptability study is available in Technical Report 3.8.8: *Bill Acceptability Study*.

4.3.6 Environmental Forum

During July 2013, we ran two further forums in Hatfield, Hertfordshire (14 participants) and Hythe, Kent (11 participants). The events took place as a half-day workshop. Participants were sent a copy of the draft WRMP in advance of the day in preparation for discussion.

Delegates were invited to represent local interests within our three regions. Those accepting the invitation to attend included representations from town, district, county and borough councils, environmental groups, local common interest societies, wildlife trusts, housing associations; the Consumer Council for Water and members of our Customer Challenge Group.

We delivered presentations providing an introduction to the draft WRMP and our proposals to balance supply and demand, including detail of sustainability reductions and our approach to the consultation process. We also presented on our catchment management programme. Questions and answers followed the presentations and were largely focused on household metering and managing demand, the regulatory process, the reliability of sources, strategic direction from government and the relationship between pollution events and water quality standards in relation to catchment management.

The second half of the workshops consisted of a group facilitated discussion on how to balance both social and environmental needs in terms of supply and demand. Participants were asked to map the social impacts of restricted use against a scale of sustainability reductions in abstraction levels. Results were similar in both sessions:

- Participants generally shifted social impacts towards the beginning of the scale indicating that restrictions should come in earlier in their view to protect the environment.
- It was agreed that some activities should never be banned.
- We should raise awareness of drought as early as possible
- Advice on reducing domestic usage should happen under normal circumstances
- Businesses should be informed in advance about how and when different restrictions could impact them so that they are better prepared should these restrictions come into place.
- Use of grey water or non-potable water should be considered to enable some activities to continue after mains use has been restricted.

Reports on all our environmental forums are available in Technical Report 3.8.3: Environmental Forum Reports.

4.3.7 PR14 Business Plan consultation

In July 2013, we published our Business Plan consultation.

We asked customers to review our proposals for achieving four outcomes:

- Making sure you have enough water;
- Supplying high quality water you can trust;
- Minimising disruption to you and your community;
- Providing a value for money service.

We presented three different options for customers to consider, each with a different bill impact over the five-year period from 2015 to 2020. The three options identified the changes in service and to the bill against the average water-only annual bill of £165. The options offered were:

- Our Slower Plan, reducing customers' bills by £2.50;
- Our Proposed Plan, adding £3.70 to customers' bills; and
- Our Faster Plan, adding £13.70 to customer's bills.

Our water resources management proposals fall largely into the outcome 'making sure you have enough water'. The Proposed Plan identified in the Business Plan consultation document reflects the sustainability reductions in accordance with our draft WRMP, whilst the Slower Plan delays their delivery and the Faster Plan delivers more sooner. The Slower Plan reduces customers' bills as we do not have as large a deficit between supply and demand, whilst the Faster Plan increases bills as the deficit is much larger than that in the Proposed Plan.

In addition, Ofwat requires us to consider the measures of success for our Business Plan, together with proposals for incentives and penalties linked to our performance. We determined that, for 'making sure you have enough water', our measures of success would be to reduce leakage, help customers use less water and to reduce the amount of water we abstract in order to meet supply, leaving more water in the environment.

During the summer of 2013, specialist consultancy Office for Public Management facilitated four deliberative forums for us that took place across our regions in Clacton, Harrow, Folkestone and Bishops Stortford. The purpose of these events was to gain insight about the range and diversity of customers' views and in particular on the subject of acceptance for the draft Business Plan.

We wanted to understand whether they felt we proposed the right balance between the service they receive and the bill they pay. We asked customers their views on our proposed measures of success and whether these adequately enable them to judge our performance. We also tested the style, content and language of our Business Plan consultation document.

A total of 200 customers attended the deliberative forums. Engagement was qualitative via discussions in small groups at tables. Some of the key messages captured on the day were:

- Customers hold mainly positive views about us, but they know very little about us.
- The more they learn, they more they feel they are receiving value for money.
- We compare favourably to other utility companies in other industries.
- Water meters are a good way of changing behaviour and improving water efficiency.
- Some issues of concern to delegates included water meters leading to higher bills for some vulnerable groups, water pressure, hardness, appearance and taste. In addition, some concern over our ownership.
- For most, the proposed rate of investment and increase to bills is acceptable.

- Most agree with the proposed measures and in the case of disruptions, would like to see the disruption time of 12 hours decreased.
- Customers would like us to make it easier for them to contact us by providing more contact channels.
- Our Business Plan document was considered accessible and easy to understand, though a shorter summary might be an attractive option.

4.3.8 Let's Talk Water

4.3.8.1 Introduction

Throughout the summer of 2013, we ran our 'Let's Talk Water' campaign. We developed a series of questions with discrete answers (yes or no, or a number between 1 and 10) to help us understand customer views on a wide range of aspects of their water service. Some of the questions related to water resources planning, and we felt it was important to highlight those in our WRMP. The full report is appended to Technical Report 3.8: *Engaging Customers in Future Planning*.

We received over 3,600 responses from customers across our operating area:

- 84% were from customers in our Central region;
- 9% were from customers in our East region;
- 6% were from our Southeast region;
- Whilst 1% did not tell us which region they lived in.

Survey respondents also advised us whether they had a meter and age grouping, allowing us to cross-cut the responses to check for trends in these sub-groups of customers.

Customers were also invited to leave comments on completion of the survey.

It is worth noting that the response to Let's Talk Water was entirely self-selecting, and that it is not necessarily statistically representative of the demographics in our regions. As such, the response to Let's Talk Water provides insight to our customers' preferences, but is less representative than other avenues of engagement that will influence our WRMP, such as the questionnaires put to our online panel.

4.3.8.2 Leakage

We asked customers: should we continue to search for and fix all leaks – both visible and hidden – even if it costs more than the value of water that is lost?

A large proportion of survey respondents, 78%, would like us to find and repair leaks even if it is more expensive than other ways to supply water. This correlates well with our other consultation feedback, with a majority supporting leakage reduction beyond the economic level.

The results are shown in Figure 7.

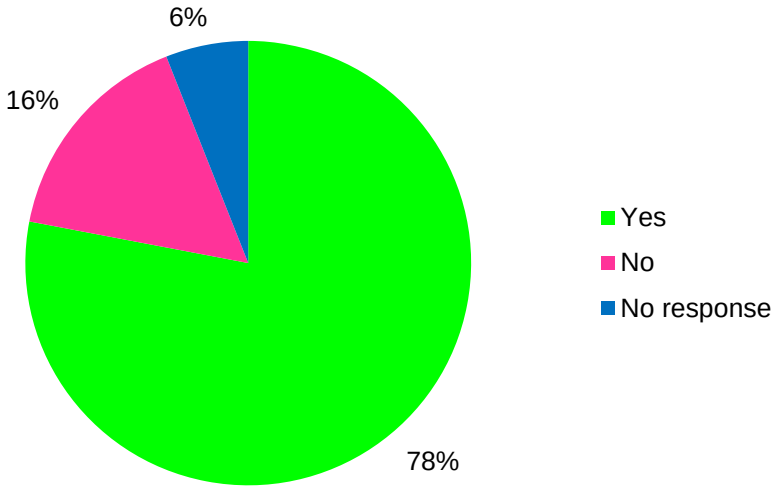


Figure 7: Let's Talk Water: should we fix leaks beyond the economic level?

4.3.8.3 Water efficiency

We asked customers: how important is it to you to use water carefully?

Survey respondents were asked to select a number between 0 and 10, where 0 indicates "don't really care" and 10 indicates "very important".

The response to this question is given in Figure 8, and shows that a significant majority think that it is important to use water carefully.

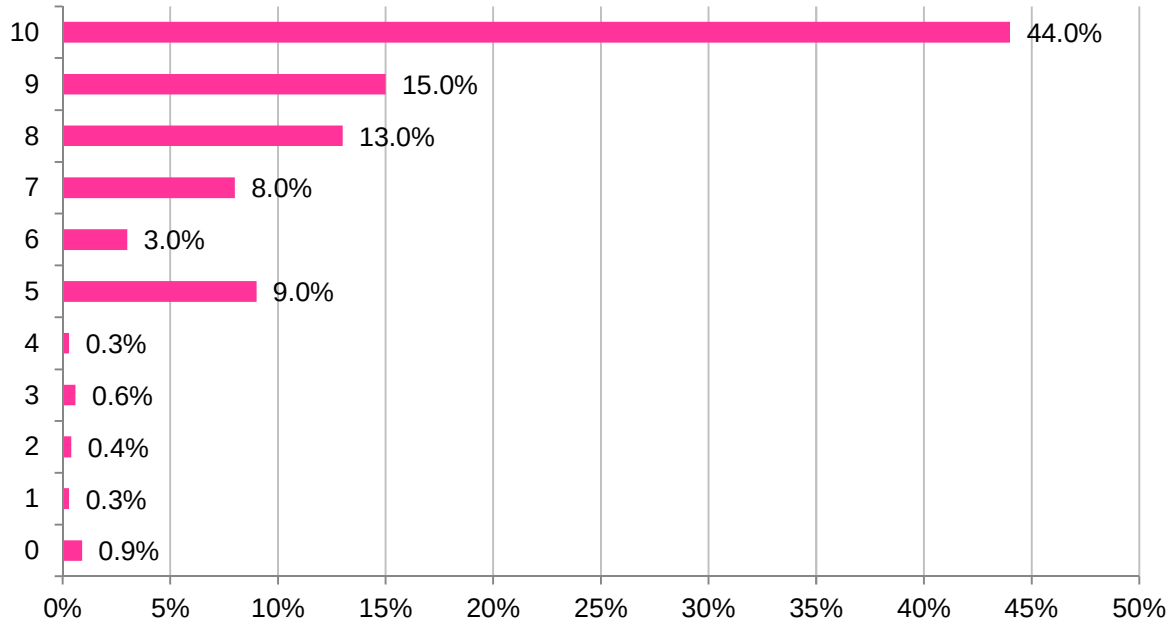


Figure 8: Let's Talk Water: how important is it to use water carefully?

4.3.8.4 Metering

We asked customers: do you think that a water meter is the fairest way to charge for supplying water?

The results are show in Figure 9.

79% of customers agreed that water meters are the fairest way to charge for water. This correlates well with the responses we received when asking the same question from other avenues of engagement, such as our online panel.

Further analysis of the responses identified that customers who already had a meter believed water meters were the fairest way to pay for water (93%) compared to unmeasured customers (60%).

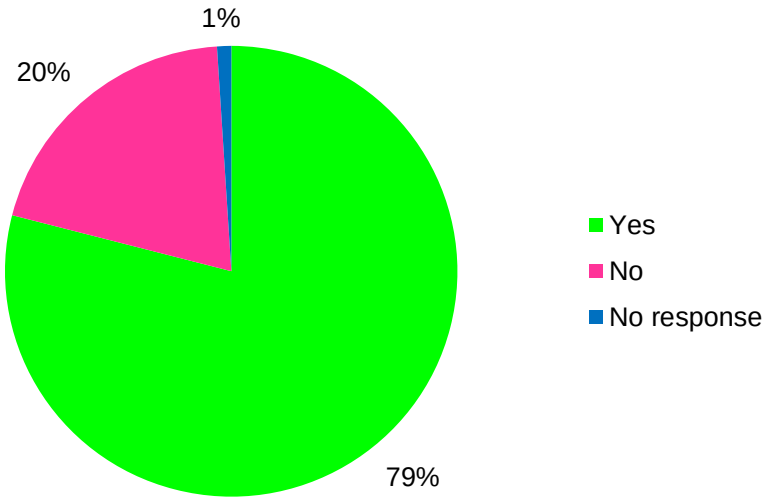


Figure 9: Let's Talk Water: is metering the fairest way to pay?

4.3.8.5 Sustainability & Abstraction

We asked customers: what priority should we place on reducing the amount of water we take from underground sources to leave more water for rivers?

Survey respondents were asked to select a number between 0 and 10, where 0 indicates "don't really care" and 10 indicates "very important".

The results are shown in Figure 10.

Whilst a large proportion believes reducing our groundwater abstraction to improve river flows is important, there are also a significant number of respondents who do not have a strong opinion.

It is also interesting to note that 9% of respondents do not care whether more water is left for rivers.

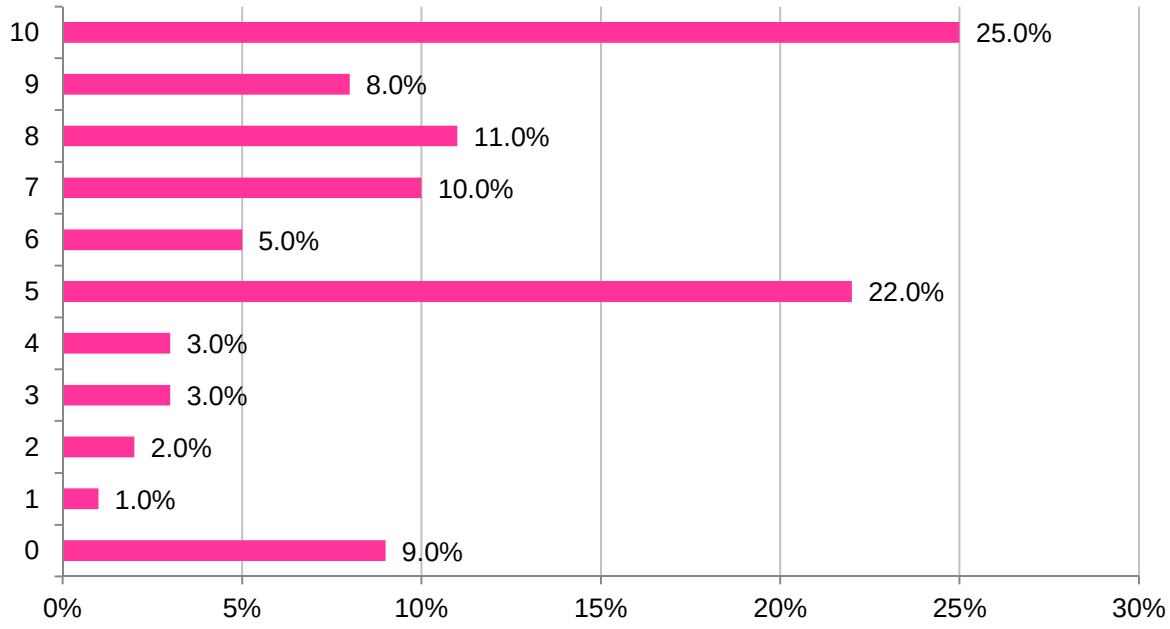


Figure 10: Let's Talk Water: what priority to place on reducing groundwater abstraction to leave more water for rivers?

4.3.9 Assurance

To ensure that we had correctly interpreted the responses to our draft WRMP consultation and the other avenues of engagement, we commissioned independent studies to review our analysis and identify the key themes that we needed to address in our Statement of Response.

The details of the third party assurance and analysis are given in the appendices to Technical Report 3.8: *Engaging Customers in Future Planning*.

5 How the consultation has changed our Plan

5.1 Introduction

We have considered all representations on our draft WRMP. We sought to support the consultee responses with other engagement activities that are statistically representative of our customer base. We have detailed our consideration and how our Plan has changed in light of each representation.

Our key stakeholder representations are appended to this SoR. The list of appendices is as follows:

- Appendix A: Draft WRMP consultation response log
- Appendix B1: Environment Agency representations on our draft WRMP
- Appendix B2: Letter from the Environment Agency, responding to our draft Business Plan
- Appendix B3: Letter of assurance to the Environment Agency and Annex 1
- Appendix B4: Notes from meeting with the Environment Agency on 5th November
- Appendix C: Ofwat representations on our draft WRMP
- Appendix D: Letter replying to the Consumer Council for Water representations on our draft WRMP
- Appendix E: CCG challenge responses on leakage and metering

In the next section, we have collated all representations and have summarised the changes we have made to our draft WRMP to produce our revised WRMP, which has been supplied to DEFRA and the Agency for their information to assist in their consideration of this SoR.

We will publish our final WRMP taking account of any directions subsequently given by the Secretary of State.

5.2 Summary of changes

We have changed our WRMP in response to the consultation as detailed below and this has altered the scope, scale and timing of investments, however **our overall strategy** of leakage reduction and, in our Central region, universal metering coupled with enhanced water efficiency activities, making best use of existing resources and bulk imports **remains consistent with our draft WRMP**.

- We have **carried out a substantial amount of customer and stakeholder consultation** using a variety of methods to establish support for the proposals in our draft WRMP. Generally, our plans were supported. A number of consultees asked for our abstractions to be reduced further, even when not cost beneficial. We have agreed with the Environment Agency where sustainability reductions are to be undertaken where they are cost beneficial and our WRMP is compliant with the latest information from the Agency (NEP3, August 2013). In our Business Plan, investment is included under our National Environment Programme to implement the confirmed sustainability reductions and continue the investigation of the impact of our abstractions on the environment. We will investigate the

potential for further sustainability reductions from the 'uncertain' classification of sources and we have included provision through our Business Plan change protocol for the implementation of these measures, when they are confirmed to us as an outcome of the forthcoming River Basin Management Plans.

- We have also carried out **willingness to pay and bill acceptability studies**. Customers have demonstrated clear preferences for demand management measures (leakage and water efficiency) over increasing abstraction from rivers. Customers that we have engaged with as part of our wider consultation share generally the same views as the consultees responding to our draft WRMP consultation.
- We have **slowed our universal metering programme**, in response to the Consumer Council for Water's comments, so that metering will be delivered approximately equally over two AMPs. We have been developing our communications campaign, taking account of reports such as the Consumer Council for Water's report *The Customer Impact of Universal Metering Programmes (May 2013)*.
- We have continued to work on our **delivery programme for household metering and water efficiency** as well as the introduction of social tariffs and the transition plan to support our customers, as requested by the Consumer Council for Water. We have considered the impact of transitional arrangements on achieving demand savings and to compensate for this, we have enhanced our communications and water efficiency provisions. In this way, we have managed the risk such that it does change the options in our Preferred Plan.
- We have improved our water efficiency programme to **include more educational awareness** and expand the future role of our Education Centre team in Bushey, as many of our customers would like to see us working more with local schools to educate the next generation. We have been able to do this without increasing costs by changing the balance of components of our overall water efficiency programme; this does not have an effect on the options chosen in our Plan.
- We have thoroughly **reviewed our levels of service analysis**, in response to comments from both the Agency and Ofwat, and provided further evidence in support of our assessment. This does not have an impact on the options selected in our Preferred Plan.
    - We plan to introduce a **delay to the implementation of temporary use restrictions for economically vulnerable non-household customers**, such that they receive a slightly higher level of service.
    - We explain that **emergency drought orders for additional abstraction** where it harms the environment would be at **no greater frequency than 1 in 118 years**.
    - We have clarified that we consider **emergency drought orders for the use of standpipes are unacceptable** and we are not planning for their use in anything other than civil emergency conditions.
    - We will update our Drought Management Plan in 2014 with these changes for consistency..
- We have undertaken additional detailed analysis to show we can continue to supply customers after the **implementation of sustainability reductions**, without affecting their levels of service. There is an additional cost associated with this work that we highlighted in our draft Plan. We have concluded our investigations and are able to explain where we need to make changes to our infrastructure to preserve resilience and the quality of water supplied to our customers for the 42 Ml/d of sustainability reductions to be delivered in AMP6 and the remaining 28 Ml/d in AMP7. We have defined all individual project investments to implement what we need to do and how much it will cost, and are pleased to inform our customers that this will cost less than we identified in our draft WRMP. This has

been made possible by retaining some peak licence at one of our sources in Stevenage whilst still reducing average abstraction by 90%.

- We have taken account of the **latest Census data** (2011) in our revised demand forecast. As population is projected to grow at a faster rate than we expected in our draft WRMP, and that our base population was greater than we had planned for in our draft WRMP, we have had to introduce new options to meet the deficits, particularly towards the end of the planning period.
- We have reviewed our **headroom assessment** for our baseline demand forecast to ensure we had fully considered all of the uncertainties around our supply / demand balance. We have responded to feedback on our Plan from Anglian Water and allowed for uncertainties in our bulk transfer from our shared reservoir resource. Details of this change are included in our revised WRMP.
- We have **removed a third party licence groundwater option from our feasible options list** in response to the Agency's concerns that there was no existing licence at this location. This option was selected in our draft WRMP but is no longer available for our revised WRMP.
- We have accounted for the **impacts of climate change on our options** in our modelling, as requested by the Agency. This affects a small number of groundwater schemes, and results in these options being less cost-beneficial later in the planning period and so less likely to be selected.
- We have **concluded our negotiations with regard to bulk transfers of water from our neighbouring water companies and other third party suppliers** so that our respective Plans are consistent with WRSE, as requested by the Agency, Ofwat and the Consumer Council for Water. We show our proposed utilisation of the agreed bulk transfers in section 11.4 of our revised WRMP. We have continued to participate in the concluding phase of work of the WRSE project and are pleased with the alignment between our proposals and the outcomes of the WRSE modelling.
- We have **run additional scenarios** to address customers' views, for example offering reservoirs and desalination options taking account of their significant impact on the environment. We have also run scenarios where all options that have been classified as high and medium risk with respect to the environment are not available, to show the impact on costs.
- We have reflected the **uncertainty of our Preferred Plan in our headroom assessment**, as required by the Agency, and discussed its impact on our WRMP. Some consultees were concerned we had insufficient headroom and that we were overly reliant on our proposed universal metering programme and bulk transfers from other water companies, who, during drought may be unable to meet our needs. We have also considered contingency options that we may need to develop should our Preferred Plan fail to deliver the benefits projected.
- We have **continued to assess the environmental impact of our options** as part of our Strategic Environmental Assessment (SEA), as requested by the Agency and Natural England. Our assessment shows that the options in the first ten years of our Preferred Plan will not cause deterioration in ecological status in accordance with the Water Framework Directive and that the options in the remainder of the planning period are very unlikely to cause deterioration. We will continue to review our future projects as part of our annual review of our WRMP, and will investigate potential deterioration effects as necessary so that we are able to draw firm conclusions to ensure no deterioration through adoption of alternative solutions well before any option is included in subsequent WRMPs. This approach does not affect the selection of options in our modelling.

– We will **develop a non-technical summary document,** as suggested by the Consumer Council for Water to accompany our WRMP, to aid customer and stakeholder understanding. We will follow the style of our Business Plan consultation document, which was generally well received. We will publish our non-technical summary together with our final WRMP.

5.3 Preferred Plan Summary

5.3.1 Introduction

As we have a supply / demand deficit in five of our eight zones at the beginning of the planning period and in seven zones by 2040, we have revised our Preferred Plan as a result of our consultation to account for customer and stakeholder views and in light of the refinement of data and improvements to our modelling. Our **East region, WRZ8, remains in surplus throughout the planning period** and no water resources investment is required.

We are pleased to note that **customers generally support our proposals**. The situation in our Southeast region, WRZ7, has also improved since the publication of our draft WRMP. Sustainability reductions in the Little Stour are not now required and therefore water resources investment to 2020 is significantly lower and the only scheme required is flow augmentation on the Little Stour. This investment is included in our Business Plan.

As such, **the strategy of our draft WRMP** with its focus on demand management, leakage reduction and sharing water across the South East of England **remains valid for our revised WRMP**. We have made a number of refinements to our proposals to account for the feedback we received during the consultation period.

Our Preferred Plan provides for sustainable development of resources, **minimal impact on the environment** and best value to customers. We believe our Preferred Plan represents **good value for money** and **equity for customers** as we work together with our communities to ensure there is enough water for our customers and the environment, now and in the future.

In the **immediate five years**, from 2015 to 2020, our Preferred Plan derives:

– A saving of **20Ml/d** in distribution leakage through a number of methods;

– Over **29Ml/d** from universal metering by AMR in four of our six water resource zones in the Central region (with the remaining two WRZ delivered in the following five-year period). This includes 7Ml/d from the repair of leaking customer supply pipes, and around 4Ml/d from the distribution of water efficient devices and in-home water efficiency audits;

– Approximately **2Ml/d** from water efficiency, targeted at our non-domestic customers to help them identify ways to use less water in the operation of their businesses;

– An extra **2Ml/d** from our existing licences, by increasing the amount we abstract without causing damage to the environment. These options also give us an extra 11Ml/d during peak conditions;

– That we buy **17Ml/d** of water from our neighbouring water companies as a bulk transfer of water to make sure we have enough capacity to meet the needs of our customers.

We recognise the **importance of flexibility and resilience** in preparing our Plan and in addressing the significant challenges and uncertainties we face. We have prepared a change

protocol to be able to react flexibly to requirements that are made outside of the price review process.

We considered the sensitivity of our plan to a number of factors and have chosen a Preferred Plan that is a **balance of demand management and supply side measures**, and therefore risk. In this way, we have further options available in reserve should the preferred strategy options fail to deliver their designed benefits.

We have also reviewed our options in light of the requirements set out by the **Water Framework Directive** and the need to prevent deterioration in ecological status arising from our proposals. Our WRMP includes a provision for investigative works on options scheduled for delivery beyond AMP7 so that we may continue our assessment, and, should the risk of causing deterioration be high, consider alternative options. We believe a ten-year lead time is sufficient to allow us to protect the environment without impacting our customers' levels of service.

We have included provision in our Business Plan under our proposals for a change protocol for further sustainability reductions that are currently classified as 'uncertain' should new obligations arise from the River Basin Management Plans due by the end of 2015.

We describe the development of our Preferred Plan options in Figure 11, by highlighting the scenarios that we have used to build our Preferred Plan.

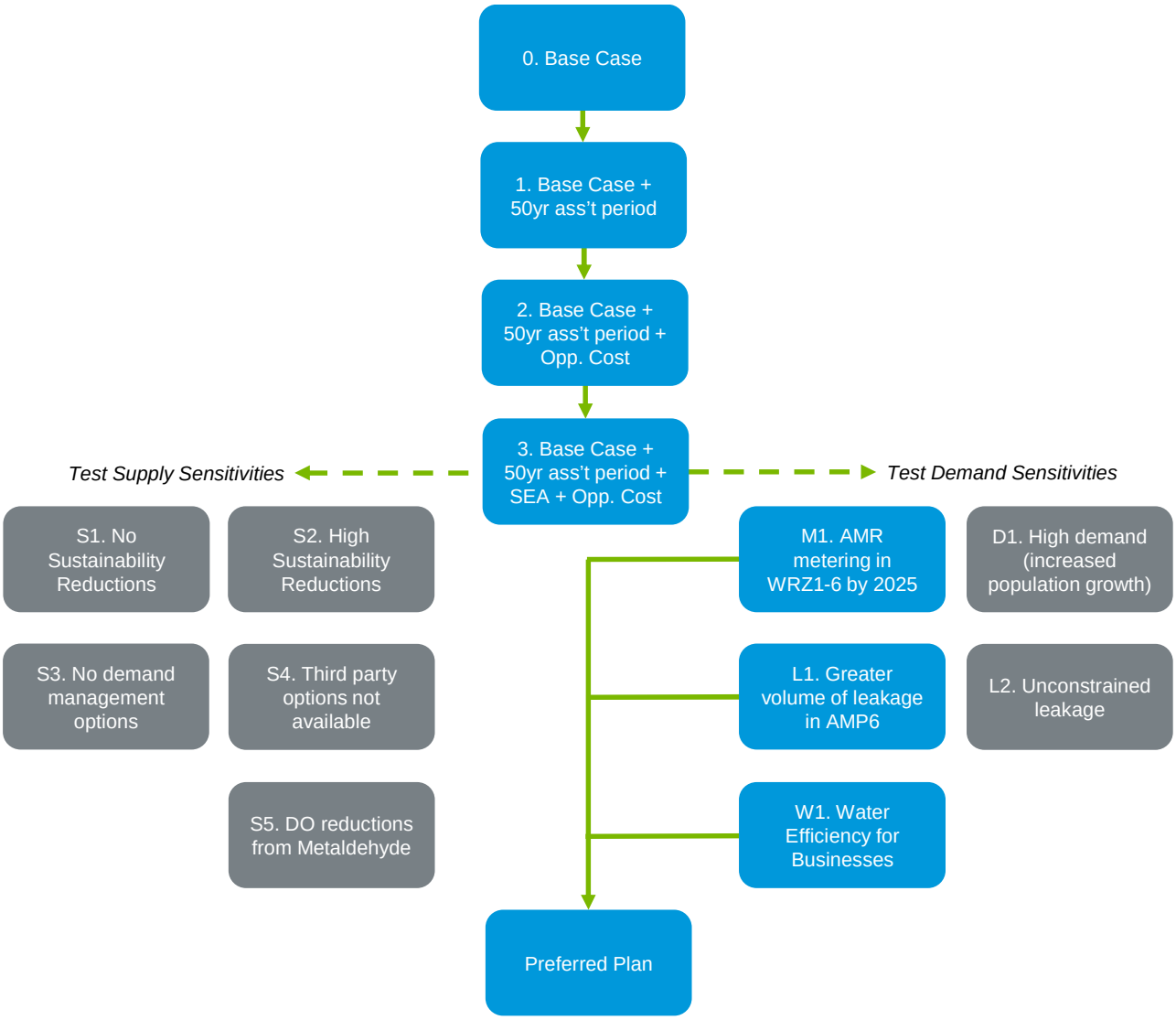


Figure 11: Scenario map with Preferred Plan components highlighted

5.3.2 Customer and stakeholder support for our Preferred Plan

5.3.2.1 Introduction

We have carefully considered the requirements we have applied to determine our Preferred Plan to ensure we offer the most cost beneficial option that meets the needs of our customers, stakeholders and the environment whilst achieving the objectives of our WRMP. The key decisions were influenced by the responses to our consultation and the additional engagement activities we carried out during the summer of 2013.

5.3.2.2 Support for the level of sustainability reductions

We recognise that confirmed sustainability reductions will be mandated either through our regulator's notification or under the Water Framework Directive as an output from River Basin Management Plans. We felt that it could be helpful for consultees to share their views on sustainability reductions included in our WRMP to inform the next round of River Basin Management Plans, which are due to be published by the end of 2015.

A number of consultees were supportive of the level of sustainability reductions presented in our draft WRMP. We asked customers in our draft WRMP consultation if they would be willing for bills to rise to protect local river environments; a bill rise of around £10 was suggested. Over 71% of respondents to this question agreed that they are willing for bills to rise to enable the proposed sustainability reductions to be achieved.

One of the key themes arising from our draft WRMP consultation was '*support for our plans to reduce abstraction where environmental damage is occurring, and acceptance for the impact on bills'*.

The results of our engagement programme are given in section 4 of this SoR. Table 8 identifies the specific evidence for customer support of our sustainability reductions from our online panels and Let's Talk Water campaign.

Evidence	Source
What priority should we place on reducing the amount of water we take from underground sources to leave more water for rivers? 59% gave a stronger than neutral response – self-selecting audience 56% gave stronger than neutral response – panel	Let's Talk Water – p12, fig 2.14 and fig 3.15 p32 (Technical Report 3.8.6)
Is the local environment important to you e.g. strong flowing rivers and streams and good/diverse populations of wildlife? 87% yes	Panel 2 draft WRMP – p33 (Technical Report 3.8.2)
Should we carry out more evaluations at our water sources in order to understand the impact that taking water from them has on the local environment? 75% yes	Panel 2 draft WRMP – p34 (Technical Report 3.8.2)
Would you be prepared to see an increase in your water bill to avoid harm to the environment? The increase would be used to carry out more work to help us evaluate the effect on the local environment of taking water from that source. 59% yes	Panel 2 draft WRMP – p38 (Technical Report 3.8.2)
Would you be willing to reduce the amount of water you use to keep local streams and rivers flowing? 65% yes	Panel 2 draft WRMP – p38 (Technical Report 3.8.2)
Should we take less water from the environment in order to sustain/improve flows in streams and rivers? 49% yes 37% don't know	Panel 2 draft WRMP – p35 (Technical Report 3.8.2)
Should we reduce abstraction where this increases the likelihood of rivers drying up? 72% yes, the environment should be protected.	Panel 5 – resilience – p78 (Technical Report 3.8.2)
Should we reduce abstraction and increase average bills? Of those responding, 87% said yes. This was made up of 78% who would accept a bill rise of between £4.60 and £6.40 over 5 years with a	Panel 5 – resilience – p79 (Technical Report 3.8.2)

Evidence	Source
further 9% valuing abstraction reduction at a level that they'd accept a bill rise at whatever the cost.	

Table 8: Evidence base for customer support of our sustainability reductions

Our online panels are statistically representative of our customer base and, together with the representations received in response to our draft WRMP consultation, demonstrate a high level of support for sustainability changes to reduce the impact of damaging abstractions on the environment.

In their representation on our draft WRMP, Natural England shared their concern that they felt we were misleading our consultees in that customers will be given a choice about whether sustainability reductions will be implemented. It was not our intention to cause confusion and many of our consultees supported our proposals, however, at this point in time we have agreed to implement these changes and in due course we expect to either receive notification of licence changes from the Environment Agency or the changes will become mandatory following consultation on the next River Basin Management Plans. Further, if funding is approved by Ofwat under the next price review, we recognise that these sustainability changes will become a regulatory output from our plans.

We will investigate the potential for further sustainability reductions from the 'uncertain' classification of sources and we have included provision through our Business Plan change protocol for the implementation of these measures, should they be confirmed to us as an outcome of the forthcoming River Basin Management Plans.

5.3.2.3 Support for the exclusion of high environmental risk options

Consultee responses from the Hertfordshire Geological Society and the Hertfordshire and Middlesex Wildlife Trust specifically stated their support for the exclusion of the high environmental risk options from our feasible options list.

Most of the consultee comments relating to our options concerned metering, leakage and water efficiency. Whilst there were a small number of comments about reservoirs and desalination, they mainly concerned resilience to drought. The frequency of comments raised by our consultees about option types, amongst other topics, is presented in the word cloud of Figure 5.

We excluded 16 schemes from our feasible options list on the grounds that they presented a high risk to the environment, for both our draft WRMP and revised WRMP. Details of the screening assessment are included in our Technical Report 3.9: *Environmental Report*.

The 16 excluded schemes included reservoirs, desalination plants and effluent reuse as well as a small number of groundwater and pipeline capacity options. Conversely, customers have told us that they would like reservoirs and desalination included in our WRMP, which conflicts with our decision to exclude them under environmental risk grounds. We have explained our reasons for the exclusion of reservoirs in section 5.6.2 and reuse schemes in section 5.6.3.

One of the key themes arising from our draft WRMP consultation in support of our proposal to exclude the high environmental risk options was '*calls for commitments to fully assess the natural environment, built environment, heritage and archaeological aspects prior to the delivery of the projects in our Preferred Plan*'. Reservoirs, due to their footprint, have a high likelihood of impacting the natural environment, particularly during construction, although some issues can be mitigated during the feasibility phase. Desalination and effluent reuse plants have the potential to impact on the natural environment during both construction and operation, due to the high energy costs of their operation.

We looked to our willingness to pay study to identify further support for the exclusion of high environmental risk options. We appointed specialist consultants to undertake our willingness to pay study, and they ran a focus group to develop the stated preference questionnaire (see Technical Report 3.8.7).

Cost was a key factor for respondents when considering options for water resources. While supply side options such as desalination and reservoirs have a relatively high preference when considered in isolation, the indicative results of the willingness to pay work lead us to conclude that, by adding bill impact, the overall order of preference for options can change and these more expensive resource options would not appear high on the options list for customers as a result.

Figure 12 presents the approximate costs per mega litre of water developed by a particular type of option. The costs shown are indicative and represent the average cost per Ml/d for each type of feasible option that is being considered. Within each type of option, the cost of individual schemes can vary considerably. Figure 12 shows that fixing leaks is a cheaper option than desalination (taking more from the sea), and that generally options to reduce demand are less expensive than options to develop new water resources. The costs presented here represent the approximate costs to build the new asset, and do not account for operational expenditure or environmental, social and carbon costs, which, for a desalination plant, are very high.

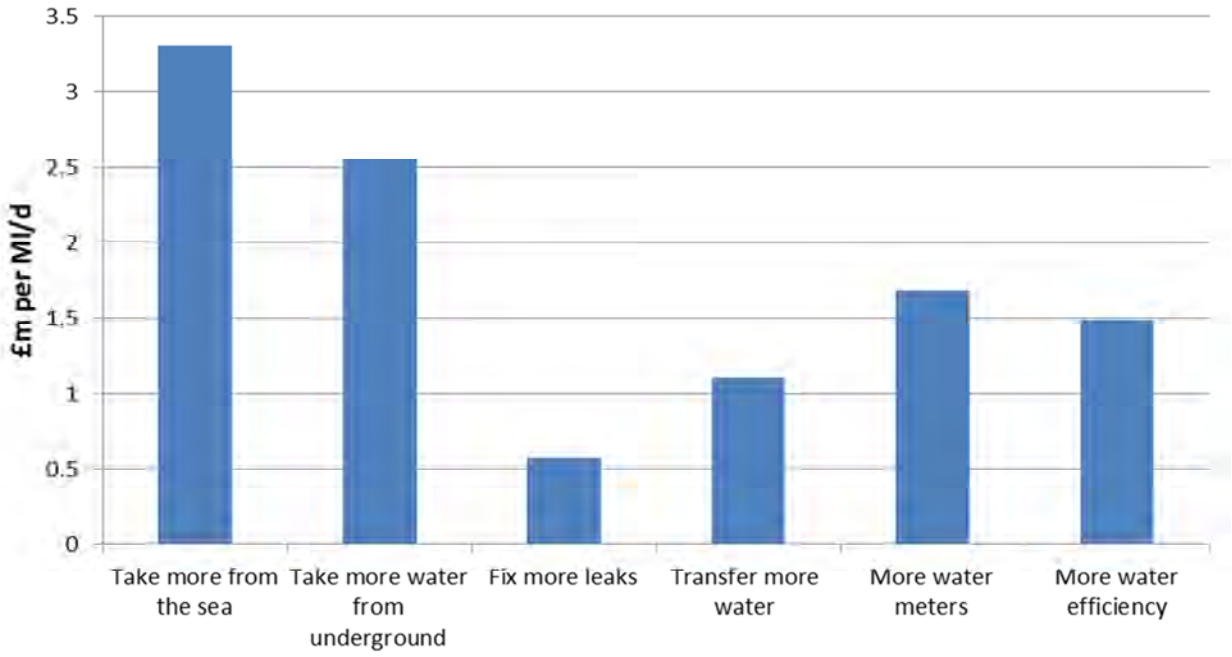


Figure 12: Approximate capital investment cost to build different option types per mega litre, excluding river abstractions

5.3.2.4 Support for universal metering

A universal metering programme was proposed in our draft WRMP and remains key to our water resources strategy for our revised WRMP.

In our draft WRMP consultation, we asked consultees if they agreed with our view that metering is the fairest way to pay for water, and that we should do more to help our customers be more efficient in the use of water. We proposed to achieve this by a street-by-street universal metering programme. Over 88% of the consultees who responded to this question agreed with our proposal.

One of the key themes arising from consultee responses was '*support for our plans to deliver a programme of universal metering, coupled with water efficiency awareness, to help customers reduce their consumption and save money, but seeking assurance that we have enough flexibility in our WRMP to accommodate variance in our forecast of 13.6% demand reduction*'. We have assessed a range of demand reductions and have provided flexibility in our revised WRMP through our headroom provision (D4 uncertainty). For our Business Plan, we have also considered the cost effectiveness of retro-fitting existing metered households with automated meter reading (AMR) devices, at the same time as we fit meters in the same area as part of our universal metering programme. We estimate this could provide an additional benefit of approximately 1Ml/d over AMP6, which we have not included in our modelling due to the degree of uncertainty, but providing flexibility to compensate for the risk of the assumed demand savings from our universal metering programme.

In our draft WRMP, WRZ2 was the last to be selected for universal metering. Markyate Parish Council responded to our consultation expressing concern that delaying metering in their parish (in WRZ2) would be "detrimental" to Markyate residents.

Metering is selected in all of our Central region WRZs in our revised WRMP least cost plan, but delivery is in two parts with WRZ1, 4, and 5 delivered in AMP6 with the other WRZ selected to be delivered at the end of the planning period. We felt that this approach with customers would be divisive and lead to higher costs as a result of unacceptability of individual installation, so we propose that we universally meter all WRZ by 2025 in our revised WRMP Preferred Plan.

Table 9 illustrates the metering delivery programmes in our draft and revised WRMPs, comparing the least-cost plan with our Preferred Plan.

WRZ	Delivery year in draft WRMP least-cost Plan (scenario 2b)	Delivery year in draft WRMP Preferred Plan	Delivery year in revised WRMP least-cost plan (scenario 2)	Delivery year in revised WRMP Preferred Plan
1	2015 (5 year delivery)	2015 (5-year delivery)	2015	**2017**
2	2015 (5 year delivery)	2020	2036	**2019**
3	2015 (5 year delivery)	2015 (5-year delivery)	2034	**2018**
4	2015 (5 year delivery)	2015 (5-year delivery)	2018	**2022**
5	*Not selected*	2015 (5-year delivery)	2020	**2015**

WRZ	Delivery year in draft WRMP least-cost Plan (scenario 2b)	Delivery year in draft WRMP Preferred Plan	Delivery year in revised WRMP least-cost plan (scenario 2)	Delivery year in revised WRMP Preferred Plan
6	*Not selected*	2015 (5-year delivery)	2038	**2024**

Table 9: Timing of universal metering in our Central region, comparing draft and revised

There was a high degree of support for our universal metering proposals from our draft WRMP consultees (as evidenced in Table 10), although the Consumer Council for Water expressed concern with the speed of our proposed delivery programme. Consequently, we have slowed the delivery of the programme in our revised WRMP such that it will complete over ten years, approximately equally over two AMPs.

We wrote to the Consumer Council for Water to explain the change we had made in response to their representation; a copy of our letter is given in Appendix D.

Evidence	Source
Do you believe water meters are the fairest way for everyone to pay for the water they use? 75% yes	Panel 2 draft WRMP – p22 (Technical Report 3.8.2)
If we have to install meters on a compulsory basis, should everyone have one or should we only install in areas where water is in shorter supply? 77% Everyone	Panel 2 draft WRMP – p26 (Technical Report 3.8.2)

Table 10: Evidence base for customer support of our universal metering programme

5.3.2.5 Support for leakage reduction

Leakage reduction throughout the planning period is a key component of our water resources strategy. In our draft WRMP consultation, we asked if customers would support leakage reduction beyond the economic level. Of those who responded, over 70% of consultees supported this approach. One of the key themes arising from our draft WRMP consultation was '*support for our plans to reduce leakage beyond the economic level together with a preference for a greater response to leakage management in times of water scarcity*'.

We summarise the evidence from our online panels, bill acceptability study and Let's Talk Water campaign together with the response to our draft WRMP consultation question in Table 11.

Evidence	Source
Should we increase the rate at which we fix leaks on our network? 75% yes	Panel 2 draft WRMP – p31 (Technical Report 3.8.2)

Evidence	Source
Should we continue to search for and fix all leaks (both visible and hidden) even if it costs more than the value of water that is lost? 78% yes self-selecting audience 88% yes panel	Let's talk water – p7 fig 2.8 and fig 3.9 p27 (Technical Report 3.8.6)
From the statement you have just read, do you think we manage leakage appropriately? 78% yes	Panel 4 – leakage – p54 (Technical Report 3.8.2)
Do you think we should do more to reduce leakage further, beyond the economic level, if this would mean delaying or avoiding a hosepipe ban? 62% agreed we should spend more though views on the approach differed. Some considered we should manage the balance of the work during these times to avoid a bill increase. Others considered we should do more, even if it costs more.	Panel 4 – leakage – p61 (Technical Report 3.8.2)
Does the speed at which we repair leaks become more important to you when water is more scarce such as during times od drought? 76% yes	Panel 4 – leakage – p60 (Technical Report 3.8.2)
Do you think these targets strike the right balance of metering and leakage? 54% yes 18% don't know	Panel 4 – leakage – p63 (Technical Report 3.8.2)
Meeting our leakage targets – How should we use targets? 55% - Set a target that is achieved for most of the time and is the most economical.	Panel 4 – leakage – p68 (Technical Report 3.8.2)
Bill acceptability – 82% support changes presented in the plan. Of this, 50% agree with the change and its impact on bills is acceptable. 32% agree with it but impact on bills not acceptable.	P25 – views on resource management – bill acceptability phase 1 main study report (Technical Report 3.8.8 (i))
Our customers have told us that they agree with our approach on spending more on repairing pipes than is cost effective for the volume of water saved. Of those who responded to this question, over 75% said yes.	P6 – draft WRMP response log (Technical Report 3.8.5)

Table 11: Evidence base for customer support of our leakage reduction programme

We have also looked to our willingness to pay study to further evidence support for a progressive leakage reduction programme. Section 5.1 of our willingness to pay study (see Technical Report 3.8.7) considers the importance of making a balanced investment programme.

The order shown in Table 12 indicates customer preferences for different options if all other factors, such as cost and environmental impacts, remain equal.

Option	Online order of preference	CAPI order of preference	Combined order of preference
Leakage	1	5	**1**
Water efficiency	2	1	**2**
Desalination	4	2	**3**

Option	Online order of preference	CAPI order of preference	Combined order of preference
Metering	3	6	**4**
Transfers	5	3	**5**
Groundwater	6	4	**6**
Rivers	7	7	**7**

Table 12: Customer priorities for water resource options

Table 12 shows that leakage and water efficiency are valued highly, combining the information on costs and benefits means we can conclude that leakage should be preferred to all other options. As water efficiency is one of the 'cheaper' options, it is likely that this will also be a high priority. The data for options in general shows that the resource options (abstraction from the sea "desalination" and groundwater) are the most expensive whereas the demand side options and transfers are relatively cheaper.

The values in Figure 13 represent the value to customers of implementing the options. By presenting the preferences in monetary terms, it is possible to combine these values with costs to understand the overall impact on consumers.

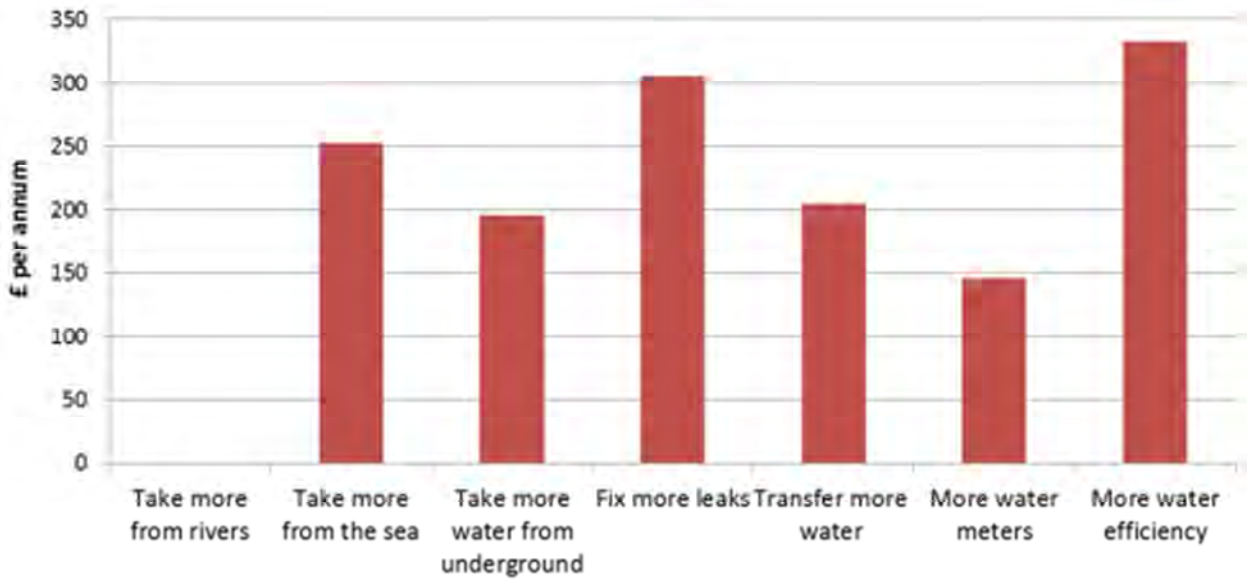


Figure 13: Customer preferences for option types when factoring in costs

We can make some high level observation on the benefit values. The values presented are mean values representing a mid-point within a range. Analysis of the data has indicated that there are three broad levels of preference.

- Options with strong preferences: Leakage and water efficiency. The results suggest that these should be included in the plan unless they are prohibitively expensive
- Options with no preference: River abstraction. This option should not be included in the plan unless it is very cheap.
- Options with some preference: These are the options between the two extremes. Whether these are included in the plan should be based much more on the reliability and cost of the option.

5.3.2.6 Support for non-household water efficiency

We have included more information in our revised WRMP about our non-household customers, including the level of metering, which, in all WRZ, has a greater level of penetration than the meter penetration of our household customers.

Consultees have told us in their commentary and qualitative statements that they would like to see more about the consumption of non-domestic customers and their need to reduce demand as the draft WRMP had bias towards reducing the consumption of domestic customers. Table 13 presents comments from our draft WRMP consultees with regard to the need for our non-household customers to reduce consumption.

Comment	Consultee
The Plan focusses *"almost exclusively"* on domestic use.	Steve Shaw – resident – response on 25/6/13 – p6 (Technical Report 3.8.5)
NFU educates its members to read meters regularly to detect leaks early, saving waste and reducing bills. Acknowledges need to work with water companies to try to smooth out demand peaks caused by horticulture. Hoping Affinity will help identify collaborative opportunities and support farmers in establishing on-farm reservoirs.	John Archer – National Farmers Union – response 2/8/13 – p11 (Technical Report 3.8.5)
Why has there not been a sensitivity around non-household consumption?	Dr H Bailey and Mr A Champion – Herts Geological Society – response 5/8/13 – p13 (Technical Report 3.8.5)
Supports move from potable to grey and recycled water use for business and industry plus build these into new builds and retrofitting storage where possible. Self-sufficient agri-irrigation via irrigation reservoirs and grey water collection and reuse.	Jenny Bate – Kent Downs AONB – response 9/8/13 – p18 (Technical Report 3.8.5)
Provides little information on water issues such that that of agriculture or major businesses and how they have been considered in the plan as well as the stress they put on available resources.	John Laverty – Institution of Civil Engineers – response 12/8/13 – p20 (Technical Report 3.8.5)

Table 13: Comments from our consultees regarding non-household water efficiency

5.3.2.7 Support for demand management in favour of taking more water from the environment

We proposed significant demand management measures of leakage reduction, universal metering and water efficiency for household and non-household customers in our draft WRMP, and this remains key to our water resources strategy for our revised WRMP.

We looked to our willingness to pay study to identify support for demand management programmes in favour of taking more water from the environment. We appointed specialist consultants to undertake our willingness to pay study, and they ran a focus group to develop the stated preference questionnaire (see Technical Report 3.8.7). Participants generally preferred measures that reduced the water use, such as fixing leaks in supply pipes, water meters and water efficiency measures over measures that increased supply. The outcomes of the work also showed that river abstraction should not be included in our WRMP unless it is 'very cheap'.

Overall, customers would prioritise demand management options over supply side options. Online respondents favour fixing more leaks and encouraging more customer water efficiency and metering. CAPI respondents also favour more customer water efficiency.

The results emphasise options that manage demands rather than enhance supplies. We have calculated preference weights for the different water management options. These weights are derived from statistical modelling of the choices made by respondents. These weights are derived from Odds Ratios that measure the relative probability or chance that respondents prefer an option over another. They are normalised to be relative to a base case of maintaining current level of service – a higher weight implies a higher preference. Results imply that if all costs (including environmental and social) are equal, online respondents prefer leakage reduction followed by water efficiency and metering whereas computer aided preference interview respondents prefer water efficiency followed by desalination.

The highest level of preference was, therefore, for leakage reduction and water efficiency. For options with some level of preference, such as water transfers and desalination, decisions on these should depend much more on the reliability and cost of the option.

We summarise the results of our second online panel in Table 14 that identify support for demand management measures.

Evidence	Source
Would you be willing to reduce the amount of water you use to keep local streams and rivers flowing? 65% yes 22% don't know	Panel 2 draft WRMP – p37 (Technical Report 3.8.2)
To adapt to the reduction in abstraction we want to reduce levels of leakage, install more meters and help customers be more water efficient. Do you agree we are taking the right action? 51% - yes providing it is cost effective 18% - yes it is important to always have enough water – whatever the cost of managing and satisfying demand.	Panel 2 draft WRMP – p37 (Technical Report 3.8.2)

Table 14: Evidence base for customer support of our demand management programme

5.3.2.8 Support for sharing water resources

We have included more information in our revised WRMP about our water trading discussions with neighbouring water companies and third parties, as well as more detail of the outcomes of the recent WRSE Phase 3 programme of work. Section 11.4 of our revised WRMP identifies the bulk transfers of water that we have agreed with neighbouring water companies to support our Preferred Plan.

Consultees have told us in their commentary and qualitative statements that they are supportive of bulk transfers of water. Table 15 presents comments from our draft WRMP consultees with regard to support for sharing water in our region.

Comment	Consultee
Supportive of bulk transfers.	David Brazier – Kent CC – response 18/7/13 – p8 (Technical Report 3.8.5)
Supports the principle of bulk transfers as per WRSE to prevent the activation of sleeper abstraction licences or unused portions of licences in areas of environmental sensitivity and water scarcity.	Lucy Lee - WWF – response 12/8/13 – p24 (Technical Report 3.8.5)

Table 15: Comments from our consultees regarding non-household water efficiency

5.4 Comparison between our draft and revised WRMPs

5.4.1 Introduction

The Preferred Plan built for our revised WRMP reflects the Base Case scenario, considers a longer assessment period (and therefore can determine options with lower whole-life costs), accounts for the opportunity cost of bulk transfers of water, and the conclusions and preferences from customer research and the results of our SEA.

Our SoR compares the Preferred Plan in our draft WRMP against the Preferred Plan in our revised WRMP.

As described in section 1.4.3, there have been a number of changes to information that we have accounted for in our modelling. The most significant changes that complement the response to our consultation are:

- The **reduction in sustainability changes at one source in our Central region**, reducing the need to invest to replace water during peak conditions, increasing the amount of water available to supply. This preserves resilience for our customers at least cost whilst maintaining the benefits to the environment;
- The **removal of sustainability reductions in our Southeast region**, increasing the amount of water available to supply;
- The **increase in base population and forecast growth** across our three regions, increasing the demand for water both at the start and the end of the planning period;

- The **increased uncertainty in existing bulk supplies** from our neighbouring company Anglian Water, with whom we share two strategic resources near to our Central and East regions;
- The reassessment of target headroom, resulting in an **increase in headroom** at the beginning of the planning period, increasing the demand for water, but reducing at the end of the planning period;
- The development of a **new method to model our leakage options**, giving us greater confidence in delivering leakage beyond AMP7. In our draft WRMP, we restricted the model to only being able to select leakage in AMP6 and AMP7;
- The **update to our leakage cost curves**, the analysis for which identified that we have a higher background level of leakage in our WRZ. This means that large leakage reductions that begin to approach the background level of leakage are very expensive, thus large volumes of leakage reduction are less economic. As a result, it may not be economic to achieve the background level of leakage;
- The **increase to the number of customer supply pipe repairs** that we will deliver in our universal metring programme, which increases the yield (water saved) of the option but does not change the costs, making metering more cost beneficial;
- The **availability of bulk transfers of water from our neighbouring water companies**, changing the number of options available for our modelling;
- The **mitigation measures needed to deliver sustainability reductions** are timed to be completed prior to the date of their implementation.
- The need to **undertake investment to maintain security of supply** prior to the implementation of sustainability reductions. This does not affect the supply / demand balance or the selection of options, but it does affect the costs of our Preferred Plan.

Our revised WRMP Preferred Plan is not least cost. In this section of our SoR, we compare our revised WRMP Preferred Plan with the Preferred Plan we presented in our draft WRMP.

5.4.2 Balancing supply and demand

Our draft WRMP and revised WRMP are not directly comparable for the reasons outlined in section 5.4.1, however, both fully resolve the supply / demand balance with a range of option types.

The graphs presented in Table 16 are at company level and relate to the balancing of supply and demand.

- The supply / demand balance shows that we have **greater demand for water in our revised WRMP Preferred Plan**, particularly evident in the later years of the planning period.
- The **deficit at company level in our revised WRMP is smaller in the early years of the planning period** as a result of sustainability changes in our Southeast region being removed. As a result, our WRZ7 does not have deficits in AMP6.
- The **reprofiled delivery of our metering programme**, in response to our draft WRMP consultation, means that **demand does not reduce as quickly in the first five years of the planning period**. This necessitates the development of other solutions to resolve the deficit.

- The **balance of options, in both scope and scale, is very similar in both Preferred Plans**, and therefore our overall strategy also remains similar.
- However, the scale of the deficit to be solved over the planning period in our revised WRMP is greater than that of our draft WRMP, as a **result of greater population growth** in our revised WRMP.

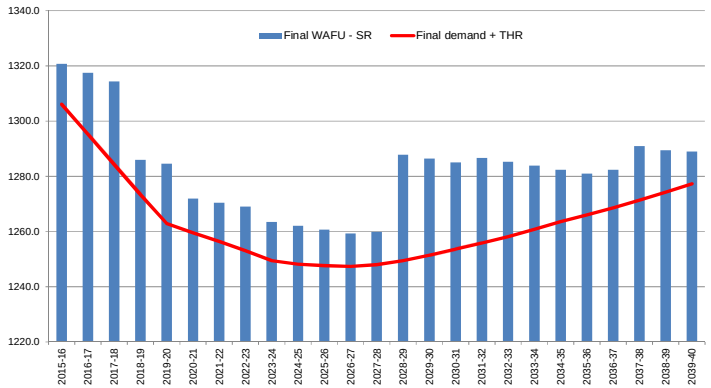
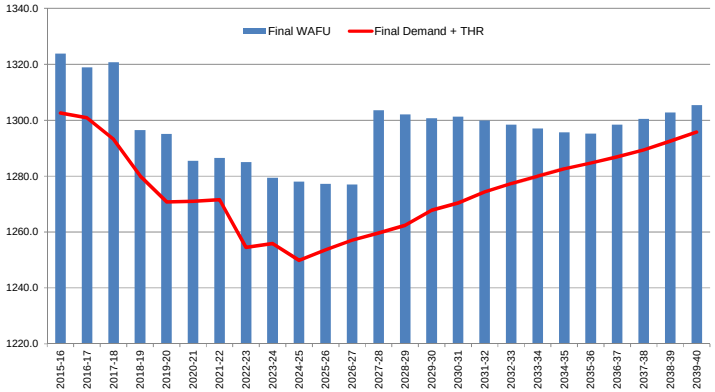
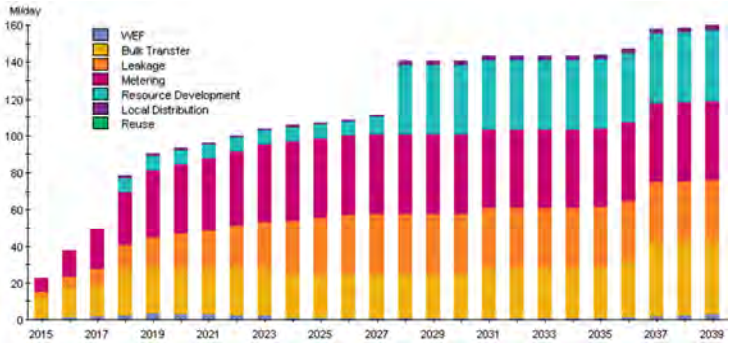
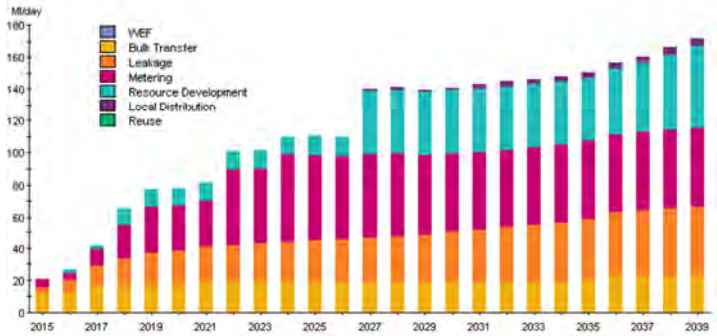
Aspect	Draft Preferred Plan	Revised Preferred Plan	Comments
Supply / demand balance: reduction in demand (DYCP)			Demand is higher, so more solutions are needed to increase water available for use (blue bars). Metering options more realistically modelled in revised WRMP.
Range of options (DYCP) *			Deficit is larger in revised WRMP due to greater population growth. Options selected in revised WRMP remain similar in scope and scale to draft WRMP.

Table 16: Comparing our draft Preferred Plan with our revised Preferred Plan (company level)

* *Note that the graphs presented show the available capacity of the options, not the utilisation.*

5.4.3 Cost comparison

Table 22 in our draft WRMP included some double counting of costs on the bulk transfers line. Table 17 below corrects this and compares the costs of our Preferred Plan and least-cost plan.

We have presented the costs for the five-year period of 2015-2020 (AMP6) and the total cost for the planning period (2015-40). The costs in Table 17 are presented in 2011/12 prices and include:

- **Capital expenditure:** this generally relates to money spent to deliver a project, such as constructing a new pipeline, building a reservoir or installing meters, and includes the purchasing of all materials, goods and services.
- **Fixed Operational expenditure:** this is the fixed part of the cost of operating and maintaining the assets that are built or installed with capital expenditure, such as a standing charge for a bulk transfer of water. It is a fixed amount of money each year.
- **Variable Operational expenditure:** these are costs that change with volume, for example, charges to purchase water as a bulk import from a neighbouring water company. Our model determines how much water to use from our existing sources or from bulk transfer imports to maintain least-cost and then calculates the Variable Opex. The costs presented relate to the utilisation of each option.
- The **total expenditure** is the sum of these cost components.

Total Expenditure, £ millions Capital Investment and Fixed & Variable Operational Expenditure	**Draft WRMP**	**Revised WRMP**
	AMP6 (undiscounted)	AMP6 (undiscounted)
Leakage	9.74	14.37
Metering	94.34	58.39
Water efficiency	5.12	3.21
Demand Management schemes	**109.19**	**75.97**
Supply (ground & surface water)	2.11	5.22
Bulk transfers	2.40	0.59
Network Constraints	0.00 *	0.00
Supply side schemes	**4.51**	**5.81**
Total per AMP for Supply and Demand	**113.71**	**72.43**
WFD no deterioration investigative works	0.00	0.25
Drought resilience proposals	15.44	0.00
Delivery of Sustainability Reductions	10.60	10.54
TOTAL	**139.75**	**83.22**

Table 17: Comparing the costs of our Preferred Plan from draft to revised

* *Network constraint costs were included in the bulk transfers line in our draft WRMP.*

** *Estimated to mitigate sustainability reductions beyond AMP7 has not been determined. Our change protocol will apply to ensure that we meet our obligations.*

Table 17 presents the costs between our draft WRMP and our revised WRMP on a like-for-like basis. It should be noted that other costs must be taken into account over the planning period:

– **Capital maintenance costs:** these are the costs that are incurred in order to maintain the assets installed with the initial capital expenditure. One example is the replacement of meters, where the initial installation would be accounted for under capital expenditure, while the replacement at the end of their life (typically 15 years) would be classified as capital maintenance. Other examples include the proactive maintenance of pumps and treatment plant.

– **Environmental, Social and Carbon costs:** these costs are calculated for different types of options and account for the environmental and social impact of the option, together with the carbon costs. An example is traffic disruption to local residents as a result of leakage repairs. These costs can be negative (because they have a positive effects on the environment, i.e. reducing the total cost of the option) or positive (because they have a negative effect on the environment i.e. increasing the total cost).

Accounting for these costs over the planning period increases the total expenditure of both the draft WRMP Preferred Plan and the revised WRMP Preferred Plan. The net present value (NPV) costs shown in Table 18 are calculated in accordance with the WRPG and our economic model. All individual capital expenditures are calculated as a series of equal payments over the lifetime of the asset, starting at the date of construction and the total NPV is the discounted value of the series of annual total annuitised costs between 2015 and 2040.

Total Expenditure, £ millions Capital Investment, Fixed & Variable Operational Expenditure, Capital Maintenance and Environmental, Social and Carbon costs	**Draft WRMP**		**Revised WRMP**	
	AMP6 (undiscounted)	Total 2015-40 (NPV)	AMP6 (undiscounted)	Total 2015-40 (NPV)
Leakage	22.18	16.65	19.08	60.24
Metering	92.5	87.14	57.85	81.22
Water efficiency	5.03	5.02	3.16	5.17
Demand Management schemes	**119.71**	**108.81**	**80.09**	**146.63**
Supply (ground & surface water)	2.14	4.41	5.26	6.08
Bulk transfers	2.52	26.51	0.59	9.76
Network Constraints *	0	0	0	2.19
Supply side schemes	**4.66**	**30.92**	**5.85**	**18.03**
Total per AMP for Supply and Demand	**124.37**	**139.73**	**85.94**	**164.66**
WFD no deterioration investigative works	0.00	0.00	0.25	0.64
Drought resilience proposals	15.44	13.46	0.00	0.00
Delivery of Sustainability Reductions **	10.60	10.05	10.54	10.54
TOTAL	**150.41**	**163.24**	**96.73**	**175.84**

Table 18: Comparing the fully inclusive costs of our Preferred Plan from draft to revised

* *Network constraint costs were included in the bulk transfers line in our draft WRMP.*

** *Expenditure to mitigate sustainability reductions beyond AMP7 has not been determined. Our change protocol will apply to ensure that we meet our obligations.*

5.4.4 Explaining the differences in costs

5.4.4.1 Introduction

The cost to our customers is lower in the first five years of the planning period in our revised WRMP than in our draft WRMP, although the total cost of our Preferred Plan is greater in our revised WRMP. The lower cost in the first five years of our Plan is largely because of the slower pace of metering. The main driver behind the total increase at the end of the planning period is greater population growth, requiring us to develop more schemes to balance supply and demand to 2040.

For our draft WRMP, we included an estimate for downstream costs. These costs were intended to make provision for the need to transfer water from other areas to replace those lost through sustainability reductions, as local losses cannot be replaced entirely by demand management measures in the same WRZ. This is consistent with the data we supplied to WRSE. For our revised WRMP, we have used a more detailed operational model called MISER to design site-by-site mitigation requirements to preserve resilience of supplies to customers, and we have proposed some changes to the abstraction volumes to retain some peak use of licence, particularly for customers in the Stevenage area.

We included for investment in our draft WRMP for additional resilience in severe drought to understand customer support and customers were generally supportive of this. Since our draft WRMP, we have reviewed our levels of service assessment and updated our assessment of resource loss in the event of a 'third dry winter' drought, which relates to our trigger 4 groundwater level in our Drought Management Plan; the return period for such an event is 1 in 118 years.

As a result of implementing mitigation measures for sustainability reductions, the supply deficit we are now forecasting for this type of serious drought has been significantly reduced to 1.5Ml/d by 2020 (manageable by temporary use bans, if necessary) and 15Ml/d by 2040 and we are therefore no longer proposing further investment at this time for additional drought resilience. We will update our Drought Management Plan in the spring of 2014 in order to take account of the proposed changes in our resource base and the implementation of sustainability reductions.

Our investigations have determined that some of the schemes we proposed under our drought resilience provide a degree of mitigation of sustainability changes. By combining these programmes of work, we have been able to keep costs down to a figure similar to our initial estimate for downstream costs that we presented in our draft WRMP. We will reconsider the need for further drought resilience expenditure in the longer term in our next WRMP.

5.4.4.2 Leakage

Our consultees have told us that they want us to reduce leakage.

For our draft WRMP, we limited our model to being able to select leakage reduction in the first ten years of the planning period. This was due to low confidence in our cost data, and that extending the options beyond 2025 presented an unacceptable level of risk.

During the summer of 2013, we reviewed our cost data and reassessed our background level of leakage, which was found to be higher than expected. Figure 14 illustrates a generic leakage cost curve, with the costs of active leakage control (ALC) increasing exponentially as the background level of leakage is approached.

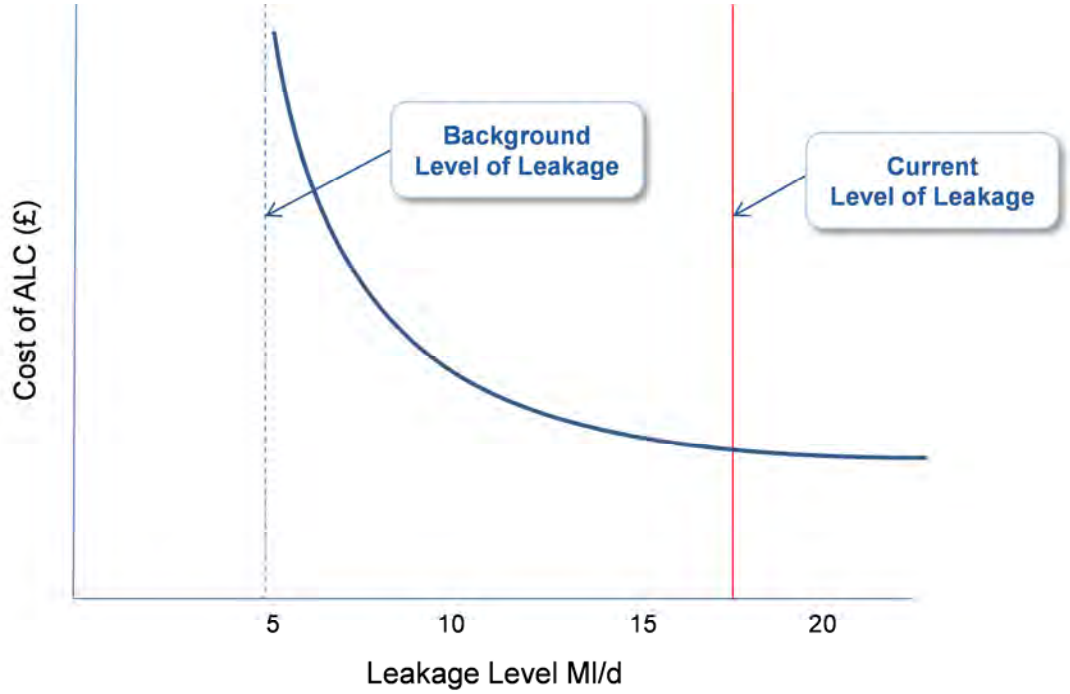


Figure 14: An illustration of a generic leakage cost curve

We rebuilt our leakage cost curves using the revised background levels and used our latest leakage detection and repair data. These costs were higher than the costs in our draft WRMP, plus we have not restricted our model to selecting leakage options until 2025.

As such, our model continues to identify leakage as cost beneficial, identifying 49.27Ml/d to be delivered by 2040, compared to 32.89Ml/d by 2025, as illustrated in Table 19. As more leakage is selected, there will be more cost.

Option Type	Period	Yield in draft WRMP (Ml/d)	Yield in revised WRMP (Ml/d)
Leakage	2015-20	19.63	20.00
	2020-25	32.89	24.75
	2025-30	32.89	29.50
	2030-35	32.89	37.50
	2035-40	32.89	49.27

Table 19: Comparison of cumulative yield developed by leakage in each quinquennium

5.4.4.3 Metering

Our consultees strongly supported our universal metering proposals for our Central region.

The Consumer Council for Water highlighted concern with our metering proposals in our draft WRMP, when we had planned to complete our universal metering programme in 2022/23. We have extended our delivery programme such that it will complete in 2024/25, at the end of AMP7. We intend to deliver our universal metering programme approximately equally over two AMPs, ordered by water scarcity. We will also undertake a communications campaign in advance of our metering programme, to help customers understand the benefits of having a meter. This communications plan was included in the budget in our draft WRMP and is unchanged for our revised WRMP.

The reprofiling of the metering programme has caused a positive impact on the total costs of the Preferred Plan, as it has brought forward other measures to address the deficit. Those measures include greater use of bulk transfers from neighbouring water companies and optimising the use of our existing groundwater licences, which are less expensive.

5.4.4.4 Water efficiency

Our consultees have told us that they want non-household customers to be more considerate in their use of water. They have told us that they are likely to use water efficiency devices if they were provided. Our consultees also asked us to include educational awareness in our water efficiency programme.

The cause of lower water efficiency costs associated with options to assist our household customers in the first five years of the planning period is as a result of two factors:

- Our Southeast region not being in deficit because of the removal of the sustainability reductions in the Little Stour catchment; and
- We have ensured that the commercial water efficiency options to support our non-household customers are delivered in the same five-year period as our metering programme. As we have reprofiled the delivery of our universal metering programme, this has caused a delay to the delivery of this component of our water efficiency programme. In our draft WRMP, all commercial water efficiency options were delivered in AMP6.

As with our draft WRMP, the water efficiency options in our revised WRMP decay over time. For example, the benefit associated with the installation of Hippo bags for WCs or tap inserts decays in accordance with the design life of the device. This results in the cumulative yield of options delivered reducing over time as described in Table 20.

Option Type	Period	Yield in draft WRMP (Ml/d)	Yield in revised WRMP (Ml/d)
Water efficiency	2015-20	3.01	1.87
	2020-25	0.28 *	2.52
	2025-30	0.27	1.23 *
	2030-35	0.29	1.43
	2035-40	2.87	3.24

Table 20: Comparison of cumulative yield developed by water efficiency in each quinquennium

* *Water efficiency yield decays over time, generally between 5 and 10 years.*

Our baseline water efficiency programme includes our Education Centre, providing outreach and inbound water efficiency classes to schools in and around Bushey in Hertfordshire. We are hoping to expand our Education Centre to be able to serve other parts of our regions, subject to the cost benefit case for doing so.

5.4.4.5 Supply schemes

Our consultees are generally not supportive of taking more water from the natural environment, preferring demand management measures. However, a number recognise that a WRMP based wholly on demand management measures presents significant risk.

We incur more supply side scheme costs in the first five years of the planning period as they are used to compensate for our reprofiled metering programme.

In addition, due to the increased population growth, we become more reliant on supply schemes to maintain the supply / demand balance towards the end of the planning period. However, despite the additional growth and the removal of a third party licence option in Uxbridge (ID 840) in response to the Agency's concern that there is no existing licence, the total cost of our supply schemes is similar to that presented in our draft WRMP.

5.4.4.6 Bulk transfers

Our consultees are supportive of bulk transfers of water. The sharing of available resources in the South East of England is consistent with the principles of WRSE.

In our Southeast region, we are less reliant on water from our neighbouring water companies due to the removal of the sustainability reductions in the Little Stour catchment. This gives rise to the reduction in costs in the first five years of the planning period. The 1Ml/d bulk import from Southern Water is considerably delayed and we no longer need the larger 3Ml/d bulk import from South East Water, which carried significant capital expenditure. These changes account for the significant reductions in the bulk transfer costs in our revised WRMP.

5.4.4.7 Network constraints

We developed four feasible options that would remove constraints in our network that would enable us to optimise our nearby abstraction licences. All of these options are in our Southeast region, WRZ7, and three of them were selected in our draft WRMP. The removal of sustainability reductions in the Little Stour catchment delays the supply / demand imbalance and consequently these three schemes have also been delayed, although they remain a key component of our revised WRMP for our Southeast region.

5.4.4.8 WFD no deterioration

We have continued to review our options as part of our Strategic Environmental Assessment and Habitats Regulation Assessment, both of which have been updated in support of our

revised WRMP. We have assessed each option in light of the Water Framework Directive and the need to prove that our proposals will not cause a deterioration in ecological status.

We consider that the schemes we have proposed in our revised WRMP provide the best balance between affordability and the protection of the environment. However, we recognise that the impacts of climate change and further sustainability reductions could affect the deliverability of our Preferred Plan.

We have therefore included a nominal £50,000 per annum (£1.25M over the planning period) to continue our investigations such that if new information arises that affects one or more of our proposed options, we can determine the impact and, where necessary, review alternative solutions.

5.4.4.9 *Drought resilience & sustainability reductions mitigation*

In our draft WRMP, we put forward proposals to improve resilience against a third dry winter drought based on work we carried out in the spring of 2012 when we had experienced two very dry winters and we were forecasting unprecedented drought conditions by the autumn of that year. In the event, the crisis was averted by an equally unprecedented rainfall pattern over the summer that was a 1 in 200 year event.

In our draft WRMP, we submitted our estimate to reduce the impact of a third dry winter drought on customers for a capital investment of £15million.

As evidenced by the response from our consultees presented in section 4.2.3, our drought resilience proposals were generally supported. This was also backed up by our online panel in August 2013 (see section 4.3.3.3).

For our revised WRMP, we have reviewed the supply deficit we forecast in severe drought and, at the same time using our MISER operational model, we have worked out in detail what measures would be needed in each of our hydraulic demand zones to achieve site by site sustainability reductions of 42Ml/d in AMP6 and 28Ml/d in AMP7.

Implementation of sustainability reductions means we will have to replace this lost groundwater with a combination of demand management measures (leakage reduction, metering and water efficiency) and by transferring water from other areas.

In establishing how we will replace lost groundwater, we have used out MISER model to design reinforcements to our network. We have taken account of the need to prevent deterioration in the quality of supplies replaced by other water. Whilst we have an undertaking for metaldehyde in some of our zones, by retaining 10Ml/d peak licence in our Stevenage area, we have avoided the wider use of imports that have elevated levels of metaldehyde and reduced the network reinforcements needed by a cost of £30million. Further details are given in section 5.6.5.

We have minimised the cost of mitigation measures by agreeing with the Environment Agency the retention of 10Ml/d peak licence in our Stevenage area.

As a consequence of this work, we will be investing to reinforce our network in AMP6 and AMP7 to be able to replace lost local resources as well as building greater capacity to move water around. The level of investment outlined in Table 21 has been minimised as a result of our implementation of a wide range of leakage reduction and demand management measures to reduce the demand for water. These investments mean that we have at the same time reduced

the severity of drought our customers will experience following a third dry winter (which corresponds to the level 4 trigger in our Drought Management Plan and a return event of 1 in 118 years) such that the supply deficit under those conditions is now forecast to be only 1.5Ml/d by 2020 and 15Ml/d by 2040. As the severity of drought conditions will be reduced following the introduction of measures to achieve sustainability reductions and the scale of the forecast deficits is managed under our Drought Management Plan (also revised to take account of sustainability reductions), we are no longer proposing specific further investment for drought measures.

River	Scheme	To be delivered by	Capital cost
Ver	New trunk main in St Albans	2016	£2,392,884
Ver	Network modifications in St Albans	2016	£28,000
Beane	New trunk main to Stevenage	2018	£4,048,630
Beane	Pumping station modifications near Stevenage	2018	£824,150
Misbourne	Pumping station modifications near Amersham	2018	£157,853
Misbourne	New trunk main from Amersham to Hughenden	2017	£2,290,389
Misbourne	Pipeline and network modifications near Amersham	2017	£833,405
Gade	New trunk main in Hemel Hempstead	2018	£588,520
Gade	Network modifications near Hemel Hempstead	2018	£45,000
Gade	Pumping station modifications in Hemel Hempstead	2018	£212,000
Mimram	Pumping station modifications north of Welwyn Garden City	2018	£288,000
n/a	Trunk main from Bovingdon to Hemel Hempstead	2018	£1,885,975
n/a	New booster station pumping from Baldock to Royston	2018	£391,000
		TOTAL	£13,985,806

Table 21: Sustainability reductions resilience schemes

As a result of discussions with the Environment Agency in November 2013 (see Appendix B2), we have included provision for an early start on the implementation of sustainability reductions measures as part of transitional expenditure in 2014/15.

5.5 Changes to the options of our Preferred Plan

5.5.1 Introduction

The WRPG Guiding Principles requires companies to explain the changes in timing and selection of schemes to maintain a balance of supply and demand as a result of the draft WRMP consultation period. In this section of our SoR, we explain the changes in option selection and delivery year in each of our water resource zones (WRZ). The tables presented

in this section should be considered in addition to the sustainability reductions resilience schemes presented in Table 21.

- Options that did not appear in our draft WRMP but are included in our revised WRMP are coloured **blue**.
- Options that were in our draft WRMP but are not in our revised WRMP are coloured **red**.
- Options that have been delayed in our revised WRMP are shaded **orange**, whilst options that have been brought forward in our revised WRMP are shaded **green**.

Please note that the active leakage control (ALC) options in our draft WRMP have been replaced by a single option for the AMP to account for the improvements we have made to our modelling approach with respect to leakage reduction. Our improvements are detailed in section 9.5.2 of our revised WRMP.

Figure 15 shows our WRZ to assist with the tables on the following pages.

Figure 15: Map of our water resource zones

5.5.2 Water Resource Zone 1

5.5.2.1 Key points

- Discrete ALC leakage options in AMP6 and AMP7 have been replaced by a single ALC option deriving a total of 10Ml/d over the planning period.
- We have delayed universal metering in this WRZ until 2017. Customers can still choose to have a meter installed under our optant metering programme in the interim.
- As we will not meter our household customers until AMP7, we have delayed our commercial water efficiency options until AMP7.
- The additional leakage reduction beyond AMP7 has mitigated some of the yield that was delivered by a third party licence scheme (ID 840), which we removed from our feasible options list as a result of the Agency's concern that there was no current licence available for trading.
- Population is projected to grow by 12% in WRZ1, compared to 6% in our draft WRMP. This has necessitated the selection of new options not present in our draft WRMP to balance supply and demand.
- The resilience options are no longer required as explained in section 5.6.4.

5.5.2.2 Revised WRMP options for WRZ1

Table 22 gives the revised WRMP Preferred Plan list of options for Water Resource Zone 1.

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Leakage	651	Leakage reduction through increased ALC, 2Ml/d in AMP6	2015	not req'd
Metering	990	Metering: community integrated AMR & water efficiency	2015	2017
Water Efficiency	936	Water audits Commercials (non process)	2015	2015
Water Efficiency	937	Water audits Commercials (process)	2015	2015
Resilience	T02	Reinforcement in WRZ1	2015	not req'd
Leakage	423	Leakage reduction - pressure management with new PRVs	2016	2035
Leakage	949	Leakage reduction - subdivide large DMAs	2016	2035
Supply	070	Source optimisation in Ashridge	2018	2021
Leakage	L14	Leakage reduction through increased ALC, 2Ml/d in AMP7	2022	not req'd
Water Efficiency	567	Additional Water Efficiency for households	2035	2033
Leakage	ALC4	Leakage reduction by ALC 2015-40 (10Ml/d)	x	2015
Supply	884	Source optimisation in the lower Gade valley	x	2018
Water Efficiency	070	Dual flush WCs	x	2034

Table 22: Schemes selected in Water Resource Zone 1

5.5.3 Water Resource Zone 2

5.5.3.1 Key points

- Discrete ALC leakage options in AMP6 and AMP7 have been replaced by a single ALC option deriving a total of 14.12Ml/d over the planning period.
- We have brought universal metering in this WRZ forward one year to 2019. Customers can still choose to have a meter installed under our optant metering programme in the interim.
- The additional leakage reduction beyond AMP7 has mitigated some of the yield that was delivered by a third party licence scheme (ID 840), which we removed from our feasible options list as a result of the Agency's concern that there was no current licence available for trading.
- Population is projected to grow by 14% in WRZ2, compared to 6% in our draft WRMP. This has necessitated the selection of new options not present in our draft WRMP to balance supply and demand.

5.5.3.2 Revised WRMP options for WRZ2

Table 23 gives the revised WRMP Preferred Plan list of options for Water Resource Zone 2.

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Leakage	651	Leakage reduction through increased ALC, 2Ml/d in AMP6	2015	not req'd
Water Efficiency	936	Water audits Commercials (non process)	2015	2015
Water Efficiency	937	Water audits Commercials (process)	2015	2015
Leakage	950	Leakage reduction - subdivide large DMAs	2016	2035
Leakage	423	Leakage reduction - pressure management with new PRVs	2017	2035
Leakage	L14	Leakage reduction through increased ALC, 2Ml/d in AMP7	2020	not req'd
Metering	990	Metering: community integrated AMR & water efficiency	2020	2019
Supply	622	Mains reinforcement in Bushey (recommission reservoir)	2028	2027
Water Efficiency	567	Additional Water Efficiency for households	2035	2033
Leakage	ALC4	Leakage reduction by ALC 2015-40 (14.12Ml/d)	x	2015
Water Efficiency	070	Dual flush WCs	x	2034
Supply	090	Source optimisation in St Albans	x	2038
Supply	601	Peak licence scheme in north Watford	x	2038

Table 23: Schemes selected in Water Resource Zone 2

5.5.4 Water Resource Zone 3

5.5.4.1 Key points

- This WRZ is the third to be universally metered, within the same AMP as our draft WRMP.
- Discrete ALC leakage options in AMP6 and AMP7 have been replaced by a single ALC option deriving a total of 7.91Ml/d over the planning period.
- Feedback from the Agency and Natural England identified some concern that we had not adequately proved that a peak licence scheme (ID 502) would not cause deterioration in the ecological status. Whilst we have carried out further assessment (captured in our updated Technical Report 3.9: *Environmental Report*), we have been able to delay the need to develop this scheme until AMP10 to allow us to conduct further tests.
- Population is projected to grow by 25% in WRZ3, compared to 21% in our draft WRMP. This has necessitated the selection of new options not present in our draft WRMP to balance supply and demand.
- The increased population and housing growth has introduced a number of new schemes that were not present in our draft WRMP. There are a number of new groundwater supply schemes because an option in WRZ4 (ID 840) was removed from the feasible options list in response to the Agency's representation on our draft WRMP. The need to develop other schemes has been partially offset by the greater volume of leakage reduction that has been selected by our model.
- The pipeline capacity upgrade scheme (ID 076) had previously been selected by our model in our draft WRMP, but was not utilised at DYAA or DYCP. We believe our model was incorrectly configured and has been corrected in our revised WRMP; consequently, the option is not selected in our revised WRMP.
- The resilience options are no longer required as explained in section 5.6.4.

5.5.4.2 Revised WRMP options for WRZ3

Table 24 gives the revised WRMP Preferred Plan list of options for Water Resource Zone 3.

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Leakage	651	Leakage reduction through increased ALC, 2Ml/d in AMP6	2015	not req'd
Metering	990	Metering: community integrated AMR & water efficiency	2015	2018
Water Efficiency	936	Water audits Commercials (non process)	2015	2015
Water Efficiency	937	Water audits Commercials (process)	2015	2015
Leakage	423	Leakage reduction - pressure management with new PRVs	2016	2035
Resilience	T02	New pipeline between WRZ3 & WRZ5	2015	not req'd
Resilience	T02	Reinforcement west-east in WRZ3	2017	not req'd
Leakage	L14	Leakage reduction through increased ALC, 2Ml/d in AMP7	2020	not req'd
Supply	076	Pipeline capacity upgrade in WRZ3	2021	not req'd
Supply	502	Peak licence scheme in Hertford	2027	2036

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Water Efficiency	567	Additional Water Efficiency for households	2035	2033
Leakage	ALC4	Leakage reduction by ALC 2015-40 (7.91Ml/d)	x	2015
Supply	548	Replacement borehole in Hertford	x	2025
Water Efficiency	070	Dual flush WCs for households	x	2034
Supply	511	Peak licence scheme in west Luton (Greensand)	x	2037
Supply	100	Source optimisation in south east Royston	x	2038
Supply	134	Third party licence in Luton	x	2039
Water Efficiency	666	Airport water efficiency - Luton	x	2039

Table 24: Schemes selected in Water Resource Zone 3

5.5.5 Water Resource Zone 4

5.5.5.1 Key points

- Discrete ALC leakage options in AMP6 and AMP7 have been replaced by a single ALC option deriving a total of 5.9Ml/d over the planning period.
- We have delayed universal metering in this WRZ until 2024. Customers can still choose to have a meter installed under our optant metering programme in the interim.
- As we will not meter our household customers until AMP7, we have delayed our commercial water efficiency options until AMP7.
- The additional leakage reduction beyond AMP7 has mitigated some of the yield that was delivered by a third party licence scheme (ID 840), which we removed from our feasible options list as a result of the Agency's concern that there was no current licence available for trading.
- Population is projected to grow by 18% in WRZ4, compared to 15% in our draft WRMP. We have not had to develop any further options to balance supply and demand in this WRZ, although neighbouring zones that had been reliant on the yield provided by option ID 840 have had to develop new options as a result of this option being removed from our feasible options list.

5.5.5.2 Revised WRMP options for WRZ5

Table 25 gives the revised WRMP Preferred Plan list of options for Water Resource Zone 4.

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Leakage	423	Leakage reduction - pressure management with new PRVs	2015	2034

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Leakage	651	Leakage reduction through increased ALC, 2Ml/d in AMP6	2015	not req'd
Metering	990	Metering: community integrated AMR & water efficiency	2015	2022
Supply	T01	Thames Water bulk transfer, 12Ml/d available 2015 – 2016	2015	2015
Water Efficiency	936	Water audits Commercials (non process)	2015	2020
Water Efficiency	937	Water audits Commercials (process)	2015	2017
Leakage	952	Leakage reduction - subdivide large DMAs	2017	not req'd
Supply	706	Increase Thames Water bulk transfer to max (17Ml/d)	2018	2018
Water Efficiency	666	Airport water efficiency - Heathrow	2020	2039
Leakage	L14	Leakage reduction through increased ALC, 2Ml/d in AMP7	2022	not req'd
Water Efficiency	329	Dual flush WCs for households	2035	2033
Water Efficiency	567	Additional Water Efficiency for households	2035	2033
Supply	840	Third party source in Uxbridge	2037	not req'd
Leakage	ALC4	Leakage reduction by ALC 2015-40 (5.9Ml/d)	x	2015

Table 25: Schemes selected in Water Resource Zone 4

5.5.6 Water Resource Zone 5

5.5.6.1 Key points

- Discrete ALC leakage options in AMP6 and AMP7 have been replaced by a single ALC option deriving a total of 3.5Ml/d over the planning period.
- This WRZ is the first to be universally metered, as per our draft WRMP.
- Population is projected to grow by 25% in WRZ5, compared to 13% in our draft WRMP. This has necessitated the selection of a new option not present in our draft WRMP to balance supply and demand.
- The increased population and housing growth projected in WRZ5 has introduced a supply scheme that was not present in our draft WRMP. The need to develop other schemes has been partially offset by the greater volume of leakage that has been selected by our model.
- The resilience options are no longer required as explained in section 5.6.4.

5.5.6.2 Revised WRMP options for WRZ5

Table 26 gives the revised WRMP Preferred Plan list of options for Water Resource Zone 5.

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Leakage	423	Leakage reduction - pressure management with new PRVs	2015	not req'd
Leakage	651	Leakage reduction through increased ALC, 2Ml/d in AMP6	2015	not req'd
Metering	990	Metering: community integrated AMR & water efficiency	2015	2015
Water Efficiency	936	Water audits Commercials (non process)	2015	2015
Water Efficiency	937	Water audits Commercials (process)	2015	2015
Resilience	T02	Re-commission source in WRZ5	2015	not req'd
Resilience	T02	Group licence in WRZ5 **	2015	not req'd
Resilience	T03	Purchase third party licence for WRZ5	2016	not req'd
Supply	104	Source optimisation in Widford	2018	2018
Supply	160	Source optimisation in Hempstead	2018	2018
Supply	169	Increase licence in Stansted	2018	2016
Leakage	L14	Leakage reduction through increased ALC, 2Ml/d in AMP7	2020	not req'd
Water Efficiency	567	Additional Water Efficiency for households	2035	2033
Water Efficiency	666	Airport water efficiency - Stansted	2038	2039
Leakage	ALC4	Leakage reduction by ALC 2015-40 (3.5Ml/d)	x	2015
Supply	513	Source optimisation near Great Dunmow	x	2038

Table 26: Schemes selected in Water Resource Zone 5

** *This option was included in error in our draft WRMP, as it should have been mutually exclusive with option ID 169.*

5.5.7 Water Resource Zone 6

5.5.7.1 Key points

- Discrete ALC leakage options in AMP6 and AMP7 have been replaced by a single ALC option deriving a total of 2.23Ml/d over the planning period.
- The additional leakage reduction beyond AMP7 has removed the need for a groundwater optimisation scheme in Guildford.
- We have delayed universal metering in this WRZ until 2024. Customers can still choose to have a meter installed under our optant metering programme in the interim.
- As we will not meter our household customers until AMP7, we have delayed our commercial water efficiency options until AMP7.
- Population is projected to grow by 15% in WRZ6, compared to 11% in our draft WRMP. We have introduced a water efficiency option that was not present in our draft WRMP to balance supply and demand.

5.5.7.2 Revised WRMP options for WRZ6

Table 27 gives the revised WRMP Preferred Plan list of options for Water Resource Zone 6.

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Leakage	651	Leakage reduction through increased ALC, 2Ml/d in AMP6	2015	not req'd
Metering	991	Metering: community integrated AMR & water efficiency	2015	2024
Water Efficiency	936	Water audits Commercials (non process)	2015	2020
Water Efficiency	937	Water audits Commercials (process)	2015	2020
Leakage	423	Leakage reduction - pressure management with new PRVs	2016	2035
Leakage	L14	Leakage reduction through increased ALC, 2Ml/d in AMP7	2023	not req'd
Water Efficiency	567	Additional Water Efficiency for households	2035	2033
Supply	752	Increased import from Thames Water	2036	2036
Supply	005	Local source recommissioning	2039	2038
Supply	173	Source Optimisation near Guildford	2039	not req'd
Leakage	ALC4	Leakage reduction by ALC 2015-40 (2.23Ml/d)	x	2015
Water Efficiency	070	Dual flush WCs for households	x	2035

Table 27: Schemes selected in Water Resource Zone 6

5.5.8 Water Resource Zone 7

5.5.8.1 Key points

- There is no supply / demand deficit in AMP6 at either DYAA or DYCP.
- As a result, no water resources investment is required in the period 2015 to 2020.
- Population is projected to grow by 12% in WRZ7, compared to 10% in our draft WRMP. We have been able to balance supply and demand without developing options that did not appear in our draft WRMP.
- Discrete ALC leakage options in AMP6 and AMP7 have been replaced by a single ALC option deriving a total of 0.5Ml/d over the planning period.
- Enlarging existing pipes helps to remove constraints in our network, allowing us to make best use of our current abstractions. These options are needed from AMP8 onwards.
- We have agreements in place for bulk supplies from South East Water and Southern Water so that we can use the imports to assist us in the event of a planned outage or to increase our resilience for a short time, e.g. during a period of warm weather when demand increases, but until 2021 (South East Water) and 2035 (Southern Water) we do not need them to balance supply and demand.

5.5.8.2 Revised WRMP options for WRZ7

Table 28 gives the revised WRMP Preferred Plan list of options for Water Resource Zone 7.

Option Type	ID	Option Name	draft WRMP Delivery Year	rWRMP Delivery Year
Water Efficiency	936	Water audits Commercials (non process)	2015	2020
Water Efficiency	937	Water audits Commercials (process)	2015	2020
Leakage	651	Leakage reduction through increased ALC, 2Ml/d in AMP6	2018	not req'd
Supply	629	Local licence recovery	2018	not req'd
Network	626	Network improvement near Barham	2018	2030
Network	900	Dover Constraint Removal	2018	2026
Supply	639	Southern Water Import Continuation (1Ml/d)	2018	2035
Leakage	423	Leakage reduction - pressure management with new PRVs	2021	not req'd
Leakage	L16	Leakage reduction through increased ALC, 1Ml/d in AMP7	2023	not req'd
Leakage	955	Leakage reduction - subdivide large DMAs	2024	2027
Network	627	Local network improvement	2028	2037
Supply	942	South East Water Import 3Ml/d	2031	not req'd
Water Efficiency	329	Dual Flush WCs for households	2034	not req'd
Leakage	ALC4	Leakage reduction by ALC 2015-40 (0.5Ml/d)	x	2020
Supply	638	South East Water Import 2Ml/d (continuation of existing)	x	2021

Table 28: Schemes selected in Water Resource Zone 7

5.5.9 Water Resource Zone 8

As our East region does not have a supply / demand deficit, we do not propose any additional investment beyond our existing programmes of work, including optant metering and water efficiency. This is the same strategy that we presented in our draft WRMP.

5.6 Where we have not made changes to our WRMP

5.6.1 Introduction

The WRPG Guiding Principles requires companies to explain where they have not made changes as a result of representations received during the consultation period.

Our consultees raised a number of points that we did not take forward into our revised WRMP. This section provides our rationale behind those decisions.

5.6.2 Reservoirs

A number of consultees asked us to consider including reservoirs in our WRMP, particularly as a drought resilience measure.

The Preferred Plan in our draft WRMP included option ID 622 in WRZ2. This option is for the recommissioning of our existing reservoir in Bushey, which requires some main laying between the reservoir and our nearby water treatment works, and was described as "mains reinforcement in Bushey". We appreciate this statement did not make clear to our customers and stakeholders that the option allowed us to make use of a reservoir that is currently non-operational, such that we had included a reservoir option in our draft WRMP. This option remains in our revised WRMP to balance supply and demand from 2027, and we have continued to investigate the environmental aspects of the option under our SEA (see Technical Report 3.9: *Environmental Report*).

However, we have not included for any other reservoir options in our revised WRMP.

We have assessed the geology of our operational area and included options in our plan for small storage reservoirs similar to agricultural irrigation reservoirs to store groundwater for use in peak periods. We have also developed an option using the Canal & Rivers Trust reservoir at Brent. These options were included in our feasible options list but not selected because they were either not cost-effective compared to alternative options or did not meet SEA criteria.

We have explored options for partnering with other water companies in the construction of a large storage reservoir to store surplus winter water in rivers and retain it for use in dry years or peak periods. Such reservoirs are expensive, occupy large areas of land and are often rejected by local communities due to the high impact on the local environment during the construction phase of the project that takes many years so we need to ensure these are necessary before we build them. We supported Thames Water's proposals to develop a reservoir in south-west Oxfordshire at PR09 and we have also expressed support for a reservoir in south Lincolnshire as we are of the view that in view of water scarcity in the South East of England we will eventually need such schemes.

Six large storage sites have been explored in the South East of England as part of the WRSE project and we have evaluated their cost-effectiveness alongside other options to balance supply and demand such as leakage reduction, metering and water efficiency as well as further resource development although these options are very limited without causing more environmental damage. In the latest study, options for large storage reservoirs have been rejected in favour of cheaper options such as demand management for the foreseeable future.

We are also working with Anglian Water, other water companies and the Environment Agency on the Water Resources East Anglia (WREA) project as this embraces our East region and the northern part of our Central region.

We will continue with these strategic partnerships through AMP6 to evaluate further opportunities for conjunctive use and storage options for our future plans for PR19.

5.6.3 Reuse schemes: desalination, grey water and effluent reuse

A number of consultees asked us why we had not included any desalination, grey water recycling or effluent reuse schemes in our draft WRMP.

We have considered desalination, grey water and sewerage effluent recycling options in our feasible list of options for our modelling. These schemes are relatively expensive due to the complex water treatment plant required and high energy consumption so they also have a high carbon footprint. This means they are often not preferred compared to less carbon intensive options and they have not been selected for our Preferred Plan as we have chosen to exclude them under SEA grounds and because our modelling could solve the supply / demand balance without significant additional cost.

However, as water is becoming scarce in the South East of England, these schemes will become more cost-effective with time and therefore it is important we keep these under review for our future plans.

5.6.4 Drought resilience

Although a number of our consultees supported our drought resilience investment proposals, we have shown why the specific drought resilience expenditure is no longer needed in section 5.4.4.9.

5.6.5 Retention of some of our licence in Stevenage

A number of consultees supported the full closure of our Stevenage pumping station as a result of sustainability reductions.

For AMP5, the Environment Agency had notified us of sustainability reductions to reduce the licensed capacity of our Stevenage pumping station to 15 Ml/d at both average and peak to improve flows in the River Beane. In October 2012, the EA advised that Whitehall pumping station should close entirely and for our draft WRMP, we estimated the cost of replacing that capacity with additional imports from our bulk transfer at Grafham.

However, we are constrained in the use of water from our Grafham bulk transfer in zones where we have an undertaking for higher metaldehyde concentrations or adequate blending to dilute the pollutants. In addition, cessation of pumping at Whitehall would mean there is single source of supply under certain circumstances that poses a greater threat to resilience of supplies to customers.

To reduce the risk from cessation of supply, we have proposed to retain some peak output capacity at Stevenage for use in peak periods only (10Ml/d compared to the previous total of 28Ml/d), and this is equivalent to a retention of 2Ml/d at average compared to the original capacity of 21Ml/d, so we are still reducing the output by 90%. This retained volume means we can maintain resilience of supplies to customers and avoid the need for an estimated £30million investment to reinforce the zone and this helps to keep water bills down.

5.6.6 Retention of peak capability at sources for emergency use

One consultee expressed concern that the full closure of one of our pumping stations as a result of sustainability reductions would increase the risk of flooding, as his property backed on to the

River Mimram. At the Environment Agency's request, we have in the past operated our pumping stations) to help alleviate local flooding events.

The retention of a small proportion of licence at sites near known areas of flood risk means that we could maintain the operability of pumping stations such that, in the event of localised flooding, we would able to operate the pumping station to help protect people, their properties and the local wildlife from the associated impacts.

We recognise, however, that retaining sources for use in emergencies will incur additional cost so this will only be done where agreed with the Environment Agency. We agree with the Agency's concern that such use must be strictly controlled, relate to specific and limited emergency conditions and do not put at risk the delivery of the primary environmental objective. These will not be for well understood water quality issues, early drought response and unplanned customer demand.

5.6.7 Albion Water supply option

Albion Water responded to our consultation on our draft WRMP and offered supplies from tankers for drought conditions.

Our coastal companies do not have a supply deficit, so we considered this for our Central region only. We have previously considered options for tanker supplies and these were rejected on grounds of cost in comparison to other supply and demand options; consequently, we decided not to pursue the option at this time; however, we propose to discuss the option with Albion Water for potential use in extreme drought conditions.

5.6.8 Sustainability reductions in the Chess catchment

A number of consultees asked us to consider reducing our abstractions on the River Chess.

The Environment Agency has reviewed flow conditions in all catchments and water bodies in our operational area to evaluate the effects of abstraction. The Chess catchment is not cited by the Agency as a river of concern, therefore we are not planning sustainability reductions in that area.

6 Amendments to our revised WRMP

6.1 Introduction

The WRPG Guiding Principles require that we provide an outline of the changes that we have made to our WRMP after the publication of our draft Plan.

- We have **described the feedback we have received** in response to our draft WRMP consultation in section 4.2.
- We have **undertaken further engagement** during 2013, described in section 4.3.
- We have explained how we have **considered the representations we received** on our draft Plan together with the outcomes of all avenues of engagement together with **an outline of the changes we have made to our plan** section 5.1.
- We have **clearly explained how the changes affect our revised WRMP Preferred Plan** in section □, presented the solution to our supply / demand balance in section 5.4.2 and explained the proposed investment in section 5.4.3.
- We have **identified the changes in timing and the schemes selected at WRZ level** to maintain a balance of supply in section 5.5.
- We have **explained where we have not made changes as a result of representations** in section 5.6, together with the reasons for our decisions.

This section of the report identifies where in our revised WRMP we have made the changes in response to our consultation.

6.2 Table of changes

Throughout our revised WRMP, we have sought to improve our explanations, whether in response to consultee feedback, the emergence of new information, or on receipt of updated data.

Table 29 identifies the key changes that we have made to our draft WRMP in the development of our revised WRMP, and explains the origin of the change.

rWRMP section reference	Subject	Description of change(s) made	Origin of change e.g. new information, accounting for latest data, consultee feedback, required by legislation, correction
Executive Summary	Executive Summary	Updated to reflect changes made to our WRMP	Consultee feedback, new information
1.5	Changes to our draft Plan	Summary of consultation influence and changes to data and models that have changed our WRMP.	Consultee feedback, new information
3.2.1	Levels of service	Amendment to levels of service proposed in draft WRMP. Calculations and error ranges given. Comparison between calculated return periods and level of service offered to customers. Impact of levels of service restrictions and sustainability reductions on DO. Analysis of 2012 drought and graphs of groundwater levels.	EA and Ofwat representations, consultee feedback
3.2.2	Leakage	More explanation about the continuous improvements we have made, example of contradictions in customer feedback that we must seek to resolve.	Consultee feedback
3.2.3	Metering	Updates to recently completed metering trials in our Southeast region.	New information
3.2.4	Water efficiency	Updated to reflect baseline retail activities, enhanced programme as part of universal metering and specific projects with customers such as non-household audits. Additional content around our existing Education Services offering.	Consultee feedback, accounting for latest data
3.3.2	Sustainability reductions	Updated with latest volumes of 'confirmed' and 'likely' reductions following notification from the Agency in August 2013. Update to NEP investigations. Detail on morphological measures. Summary of PR14 Business Plan quality programme proposals.	Consultee feedback, new information, accounting for latest data
3.3.4	Pollution of water sources	Expanded section to include more details about our catchment management activities.	Consultee feedback
3.3.5	Major infrastructure projects	New section to identify some of the significant infrastructure projects that we must manage in our operating area.	New information
3.4.2	Determining the critical period	New section to explain why we plan for critical period.	Required by legislation
3.5.3	Results of our pre-consultation	New section, expanding on draft WRMP 3.5.2. Explains quantitative and qualitative feedback used to inform the development of our draft WRMP, as it has also been valuable in developing our revised WRMP.	Accounting for latest data
3.6	Engagement programme: consultation phase	New section to explain the additional engagement we have carried out in parallel with the draft WRMP consultation.	New information
4.3	Existing water transfers	Minor corrections to table of existing water transfers. Included map of transfer locations to demonstrate interconnectivity. In addition, agreements with South East Water and Southern Water have been extended.	Correction, consultee feedback
4.4.1	Sustainability reductions	Updated with latest volumes of 'confirmed' and 'likely' reductions following notification from the Agency in August 2013.	New information
4.5.2	Climate change analysis for revised WRMP	New section explaining our reasoning for climate change work done to support the revised WRMP.	Accounting for latest data

rWRMP section reference	Subject	Description of change(s) made	Origin of change e.g. new information, accounting for latest data, consultee feedback, required by legislation, correction
4.6.2	Outage analysis for revised WRMP	New section explaining our reasoning for outage work done to support the revised WRMP.	Accounting for latest data
4.7	Treatment works losses	Further explanation of our treatment works losses, for both surface and groundwater works.	EA representation
4.8	Abstraction Incentive Mechanism	New section explaining the latest information on AIM and how it could affect our WRMP.	New information
5.2.2, 5.2.3	Water demand - household	Improved explanation of calculation of measured and unmeasured household consumption, including details of our unmeasured consumption monitor.	Improved explanation
5.2.4	Micro-components	Updated graphs of micro-component use over the planning period.	Accounting for latest data
5.2.5	Population and households	Updated property and population forecasts following the release by Experian in May 2013 of the Census 2011 data that applied to our regions.	Accounting for latest data
5.3	Water demand – non-household	Included graphs of meter penetration of non-household customers, further explanation of logic behind flat forecast.	Consultee feedback
5.4.1	Leakage	Tables updated with latest leakage data.	Accounting for latest data
5.5	Impact of climate change on demand	New section summarising our approach to accounting for the impact of climate change on demand.	EA representation, required by legislation
5.6.2	Weighted average annual demand	New section explaining our approach to the calculation of weighted average annual demand.	Required by legislation, accounting for latest data, Ofwat representation
5.7.2	Peak forecasts	Significant update to this section to account for our latest analysis of peak factors and micro-component study in summer 2013.	Accounting for latest data, new information
5.8	Demand forecasts	Tables of water demand projected throughout the planning period.	Accounting for latest data
6.2	Headroom uncertainties	New section providing improved explanation of our assessment of uncertainties for our target headroom calculations. Explanation of risk profile.	Improved explanation
6.3	Target headroom	Updated to include results of target headroom assessment for our revised WRMP, shown in tables and graphs together with risk profile.	Accounting for latest data
7.2	Supply / demand balance (regional)	New graphs giving our projections of deployable output, water available for use, the impact of sustainability reductions, demand, and demand plus headroom.	Accounting for latest data
7.3	Supply / demand balance (company)	New supply / demand balance graph and new maps showing volume of deficits by WRZ at dry year annual average (DYAA) and dry year critical period (DYCP) throughout the planning period	Accounting for latest data
8.2.1	Unconstrained options	Improved explanation of unconstrained options considered and correction to the number of unconstrained options in table.	Correction, improved explanation

rWRMP section reference	Subject	Description of change(s) made	Origin of change e.g. new information, accounting for latest data, consultee feedback, required by legislation, correction
8.2.2	Water trading options	New section to explain the water companies and third parties we engaged in the development of our feasible options. Includes details of water trading opportunities discussed after draft WRMPs were published to account for heads of terms agreements that had been made between other companies, affecting the available options.	EA and Ofwat representations, consultee feedback
8.3.1	Screening process: feasible options	Improved explanation of screening process, with new table explaining why options were screened out. Includes the removal of a third party licence groundwater options which, despite being on the confined aquifer and therefore not causing environmental damage, the Agency highlighted concerns with the deliverability of our Plan as there was no current licence.	Consultee feedback, improved explanation
8.3.3	Impact of climate change on options	New section on the impact of climate change on options.	EA representation, required by legislation
8.4.2	Leakage (options)	Updated section describing the economic appraisal of feasible leakage options. Includes description of leakage options and the determination of the background level of leakage in each WRZ.	EA representation, accounting for latest data
8.4.3	Metering (options)	Updated section describing the economic appraisal of feasible metering options. Includes justification for demand reduction associated with metering.	Accounting for latest data
8.5, 8.6	Feasible options	Tables showing the number of feasible options available for our draft WRMP and revised WRMP respectively. Includes reasons for changes to the number of options between draft and revised WRMPs. One third party option removed in response to EA's representation.	EA representation, accounting for latest data
8.7	Programme appraisal and SEA	Originally section 9.5 of our draft WRMP. Moved to section 8 in our revised WRMP to aid understanding.	Improved explanation
9.3.1	Our least cost modelling	Further explanation about our Economics of Balancing Supply and Demand (EBSD) model, including how it accounts for the utilisation of options and how it defines the optimal solution.	Ofwat representation, improved explanation
9.4	WRSE Phase 3	New section explaining the outcomes of the WRSE phase 3 modelling.	Consultee feedback, new information
9.5.1	Further improvements to our modelling (general)	New section summarising the improvements we have made to our EBSD model.	New information
9.5.2	Leakage modelling	New section explaining the changes we have made to the way our EBSD model considers leakage options in its economic appraisal. Explanation of the available volumes of leakage reduction per WRZ throughout the planning period.	New information
9.6	Scenario testing	Updated section to account for the scenarios we have tested with the latest supply, demand and options data. Includes summary of results of scenario testing.	Accounting for latest data
9.7	Analysis of scenarios	New section discussing the results of our scenario testing, explaining which of the scenarios tested are viable considerations in the development of our revised WRMP.	New information
10	Customer consultation and willingness to pay	New section summarising the draft WRMP consultation and other avenues of engagement we have used to inform, influence and provide insight in the development of our revised WRMP. Much of this information is presented in this SoR.	EA, Ofwat, CC Water representations, customer feedback, new information

rWRMP section reference	Subject	Description of change(s) made	Origin of change e.g. new information, accounting for latest data, consultee feedback, required by legislation, correction
11.2	How we have changed our WRMP	New section summarising the changes we have made to the draft WRMP to develop the revised WRMP. Much of this information is presented in this SoR.	New information
11.3.1	Preferred Plan summary	Updated to account for the outcomes of our revised WRMP Preferred Plan modelling.	Accounting for latest data
11.3.2	Cost of Preferred Plan	Updated total expenditure table (split by option type and programme of expenditure) by quinquennium.	Accounting for latest data
11.4	Comparing our Preferred Plan to the least-cost plan	New section showing how we have justified why the Preferred Plan is a better balance for our customers, stakeholders and the environment, whilst bills remain at an acceptable level.	New information
11.5	Consultee support for our Preferred Plan	New section explaining how we have determined customer and stakeholder support for our revised WRMP Preferred Plan.	Consultee feedback, new information
11.5.9	Where we have not made changes to our Plan	Sub-section describing where we have not made changes to our WRMP, giving explanations.	Required by legislation, consultee feedback
11.6.1	Impact on supply and demand	Updated graphs showing the supply / demand balance before and after the implementation of our Preferred Plan, showing that we resolve the imbalance.	Accounting for latest data
11.6.2	Delivery of options	Bar charts showing how 'new' water is developed throughout the planning period for both DYAA (not provided in draft WRMP) and DYCP. Also update to the cumulative yield by option type by quinquennium table.	Accounting for latest data
11.6.3	Impact on PCC	DYAA and DYCP tables of weighted average PCC throughout the planning period updated.	Accounting for latest data
11.7	Preferred Plan bulk transfers	New section describing the new bulk transfers that are in our revised WRMP Preferred Plan. Graphs of expected utilisation presented for DYAA and DYCP throughout the planning period. Status of agreements identified.	New information
11.8	Environmental aspects of our Preferred Plan	New section explaining how we have considered the environment aspects. Includes SEA and specific scenario runs showing the impact of reducing the number of options available, and consideration for the requirement under the WFD to prove no deterioration in ecological status.	New information, required by legislation
11.9	Sustainability reductions mitigation and drought resilience	Detailed programme of site-by-site sustainability reductions, mitigation measures to maintain resilience and how this avoids the need for additional drought resilience spend.	Consultee feedback, new information
11.10	Resilience & flexibility	Update to reflect combined programme of sustainability reductions mitigation and resilience of Preferred Plan	Accounting for latest data
11.11	Options in each WRZ	Update to tables provided in our draft WRMP, together with summary of key points for each WRZ.	Consultee feedback, accounting for latest data
11.12	Uncertainty of our Preferred Plan	We have included the uncertainty in delivery of our Preferred Plan in our headroom assessment.	EA representation, new information
11.13	Carbon	Update to our carbon analysis presented in our draft WRMP.	Accounting for latest data

rWRMP section reference	Subject	Description of change(s) made	Origin of change e.g. new information, accounting for latest data, consultee feedback, required by legislation, correction
11.14	Impact on customer bills	We have reduced costs in AMP6 by approximately £30million and this will help to keep customer bills down. Further details of how our revised WRMP investment affects overall prices for 2015-20 are given in our Business Plan.	Consultee feedback, new information
11.15	Preferred Plan cost breakdown	Cost component breakdown updated with revised WRMP Preferred Plan	Accounting for latest data
12	Next steps	We have included an outline of work we propose to undertake over the next five years to improve our planning process and value for money for customers.	New information

Table 29: Log of changes made in developing our revised WRMP

6.3 Schedule of revised WRMP technical reports

In support of our SoR and revised WRMP, we have reviewed and updated key technical reports. Table 30 identifies which reports we have prepared for submission with our SoR.

ID	Title	Submitting with SoR
1.1	**Deployable Output Assessment**	**Yes**
1.1.1	Surface Water Deployable Output Assessment	Yes
1.2	**Level of Service Hindcasting – Assessment of the Frequency of Drought Restrictions**	**Yes**
1.2.1	Drought Planning for Third Dry Winter Scenario	
1.3	**Assessment of Climate Change Impacts on Deployable Output**	**Yes**
1.3.1	Ardleigh Reservoir Briefing note for Affinity Water (Anglian Water)	
1.3.2	The Impacts of Climate Change on DO (H R Wallingford)	
1.4	**Sustainability Reductions**	**Yes**
1.4.1	AMP5 NEP Progress and Summary of PR14 Schemes	Yes
1.5	**Outage**	**Yes**
1.5.1	Summary Report for Outage (Central and Southeast Regions)	
1.6	**Water Resource Zone Integrity**	
1.6.1	Water Resource Zone Integrity Assessment for Affinity Water (Central region)	
2.0	**Demand Forecast**	**Yes**
2.0.1	Identiflow monitoring for Affinity Water – Summer 2013 (WRc)	Yes
2.1	**Micro-component Analysis**	
2.1.1	Customer Analysis and Micro-component Demand Forecasting	
2.2	**Domestic Housing and Population Forecast**	**Yes**
2.2.1	Population, Household and Dwelling Forecasts for WRMP14: Phase 1 Draft Final Report (Experian)	
2.3	**Non-household Demand Forecast**	
2.4	**Headroom**	**Yes**
2.4.1	Summary Report for Headroom (Central and Southeast, February 2013)	
3.1	**Options Appraisal**	
3.1.1	Unconstrained Options Study	
3.1.2	Option Screening and Constrained Options Methodology	
3.1.3	Constrained Options Dossiers	Yes
3.2	**Leakage Strategy Report**	**Yes**
3.2.1	Update of the Sustainable Economic Level of Leakage (SELL) for PR14 (RPS)	
3.3	**Metering Strategy & Cost Benefit Analysis**	**Yes**
3.3.1	Affinity Southeast - Effects of Metering	
3.3.2	Metering Trials - 2nd interim report	
3.4	**Water Efficiency**	**Yes**
3.5	**Water Company & Third Party Bulk Transfers**	
3.6	**Water Resources in the South East Modelling**	
3.7	**Economics of Balancing Supply and Demand Model Development, Commissioning & Use**	**Yes**
3.8	**Engaging Customers in Future Planning**	**Yes**
3.8.1	Engagement Planning Phases	Yes
3.8.2	Panel Survey Findings	Yes
3.8.3	Environmental Forum Report	Yes
3.8.4	A Review of our Plan Following Feedback from our Regulators	Yes
3.8.5	Draft WRMP Consultation Response Log	Yes
3.8.6	Let's Talk Water	Yes
3.8.7	Willingness to Pay Study	Yes
3.8.8	Bill Acceptability Study	Yes
3.8.9	Deliberative Forum Report	Yes
3.8.10	Customer Challenge Group Briefing Pack	Yes
3.9	**Environment Report (including Strategic Environmental Assessment and Habitats Regulations Assessment)**	**Yes**
3.9.1	SEA Scoping Report	
4.0	**WRP Tables: Commentary & Exception Report**	**Yes**

Table 30: Schedule of technical reports supporting our revised WRMP

Appendices

Appendix A: Draft WRMP consultation log

The following pages form our log of all consultation responses to our draft WRMP.

We have summarised the comments made by the consultees and have assessed whether they provided an answer (in full or in part) to our key consultation questions, as described in section 3.2.1.

Key to answers:

- Y: yes, agree
- N: no, do not agree
- P: part agreement
- nr: no response given

We have also explained our actions in response to each comment, which have been summarised throughout this SoR and in our revised WRMP.

Respondent Name	Organisation	Type	Date	1.5.1: Balance of draft WRMP	1.5.2: Leakage <economic level	1.5.2: Leakage target linked to weather	1.5.3: SRs	1.5.4: Metering & Weff solution	1.5.5: Resilience +£15M	Further Comments from respondent	How this has changed our Plan	Third Party reviewer comments
Pauline Ayling	Resident	Resident	25/05/13	Y	Y	x	Y	Y	Y	Statements responding positively to each of the consultation questions	No further action	No further comment (NFC)
Peter Neville	Digswell Lake Society	Local Interest Group	02/06/13	x	Y	x	Y	Y	Y	Highlights concern about the long-term future of Digswell Lake. Supportive to reduce leakage below ELL. Consequence of extra £10 on bills for SRs is acceptable. Supportive of proposals for metering, water efficiency and drought resilience	Additional explanation about NEP studies in WRMP	Grave concerns' regarding continued abstraction leading to lake ceasing to exist leading to potential loss of plant, animal, bird and aquatic life
Paul Hinsley	Essex County Council	County Council	20/06/13	Y	x	x	x	x	x	Generally supportive of proposals, "no adverse outcomes can be found", did not answer consultation questions specifically. Essex CC is satisfied that Affinity's draft WRMP is fit for purpose	No further action	NFC
William Trower	Resident	Resident	21/06/13	x	Y	N	Y	Y	Y	No additional comments made	No further action	NFC
Steve Shaw	Resident	Resident	25/06/13	P	Y	x	Y	Y	N	Agrees with the balance but believes there is no financial plan in the document. Would like to see more about the consumption of non-domestic customers as the Plan focusses "almost exclusively" on domestic use. Supportive of leakage plans but the question on changing targets with weather conditions is not easy to answer as it's not clear what impact weather conditions have on leakage. SRs supported. Agrees with metering, wants to know how areas will be prioritised. Another comment about wasteful non-domestic use and whether they are metered. Drought resilience proposals not easy to see in the plan or the impact on the overall financial position of Affinity and not supported.	More explanation about non-domestic customer impact in WRMP (section 5) and their contribution to total DI. Point out >95% of commercials are metered. Improve metering delivery info and explain logic of the WRZ order. Explain why drought resilience investment is no longer required	NFC
Janet Carpenter	Resident	Resident	28/06/13	Y	Y	Y	Y	Y	Y	No additional comments made	No further action	NFC

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Tracy Farrell	Chiltern District Council	District Council	01/07/13	P	N	Y	N	Y	Y	Plan does not adequately address the need for improved water storage. Local reservoirs have been sold in recent years resulting in a reduction in storage.	Further explanation about options appraisal and that assessment over 50 years still shows reservoirs as unfeasible. Also high SEA risk and deficits can be solved without them for less cost	NFC
David Cheek	Beane Mimram Partnership	Local Interest Group	02/07/13	Y	P	x	Y	Y	P	Strongly supports the Preferred Plan. Supports SRs and extra £10 pa. Demand management programme supported. Supportive of drought resilience but no mention about whether additional cost is acceptable.	Explain why drought resilience investment is no longer required	NFC
Rab Harley	Resident	Resident	02/07/13	P	x	x	P	x	x	Stresses the importance of protecting local rivers (specifically the Mimram). Supportive of recommendations put forward in the WRMP. Prepared to pay a little more.	Highlight continued desire to reduce abstraction where damage is occurring and innovative approach to seeking EA to notify us	NFC
Allan McNab	Resident	Resident	07/07/13	Y	Y	x	Y	Y	P	WRMP balances the changes needed against the overall cost very well. Necessary to spend more to repair pipes than is cost effective. Willing to pay 25% more for SRs, not just £10. Compulsory metering supported. Resilience should include new reservoirs, £15M too modest and plans should be extended.	Comments generally support our Preferred Plan. Explain how we have delivered drought resilience as part of sustainability reductions	NFC

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David Hill	North Herts District Council	District Council	08/07/13	Y	Y	x	x	P	x	The measures identified in the preferred approach seem logical and sensible in terms of improving the environment, reducing leakage and increasing efficiency. Leakage beyond ELL is supported. Note that North Herts includes a number of chalk streams that are sensitive to over-abstraction. Also that EA has suggested 105lpd for new developments. Joint working with stakeholders and engagement with local plans is needed to deliver sustainable development and a reduction in overall water consumption.	Make more references to working in partnership with business, local interest groups etc in the area. Plans to improve our strategic planning function and support DS / developers in sustainable approaches. More on water efficiency roll-out and working with local authorities	NFC
Anthony Last / David Cheek	Friends of the Mimram	Local Interest Group	11/07/13	x	x	x	Y	x	x	Seeking reductions in abstraction on the Mimram and other chalk streams. Quoted own research that suggested that a large proportion of their survey sample would "pay a bit more on their water bills". Integrated demand management programme is supported. Pleased with the degree of consultation as part of Affinity's WRMP.	Highlight continued desire to reduce abstraction where damage is occurring and innovative approach to seeking EA to notify us	Believes change is essential to ensure WFD 'good status' is achieved by 2027 - a target accepted by government
Conor Frehill	Elmbridge Borough Council	Borough Council	12/07/13	Y	x	x	x	x	x	Well evidenced and appropriate plan for the area. Welcome use of plan based forecasts. Committed to working in partnership with water companies.	Will make contact after submission	NFC
Sue Cheek	Resident	Resident	12/07/13	Y	Y	x	Y	Y	P	Supports preferred plan, including metering, education, leakage below ELL, reducing groundwater abstraction. Would like reservoirs included in resilience proposals - why isn't water stored in wet years?	Further explanation about options appraisal and that assessment over 50 years still shows reservoirs as unfeasible. Also high SEA risk and deficits can be solved without them for less cost	Supports increase in bill if this reduces harm on environment

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Pierre Miles	Resident	Resident	15/07/13	Y	Y	N	Y	Y	Y	Particular concern relates to the condition of the river Beane and pleased to see proposals to significantly reduce the level of abstraction at Whitehall. Plan appears to be a comprehensive and well considered approach to medium-term future of Central. Supports leakage below ELL but not that the targets should be linked to weather conditions. £10 for SRs acceptable if the link between the cost and environment improvement could be proven. Shared properties and apartments must also be metered. Why no mention of meters for commercials? Reasonable approach to drought resilience proposals but need more info.	Highlight SRs are notified after EA's assessment of CBA. Explain that >95% of commercial customers are metered. Improve explanation of drought resilience proposals. Our leakage target is linked to weather effects in our Business Plan incentives	NFC
Sandy Muihead	Spelthorne Borough Council	Borough Council	16/07/13	Y	x	x	x	x	x	The objectives and preferred plan appear sensible and presents a number of options to provide water security in the future, which sound feasible and achievable. Identifies that the Preferred Plan is not least cost - do customers accept this? Wants to be involved in water efficiency programme	Refer to WTP research and Bus Plan consultation that shows customer support for the Pref Plan. Explain additional benefits compared with least cost. Will make contact after submission	NFC
Various	Aston St Mary's Eco Club	Local Interest Group	18/07/13	x	x	x	P	x	x	Seeking closure of Whitehall to save the River Beane. £10 per year is a price well worth paying, works out at less than 28p per day. "We are the citizens of tomorrow and we want the current generation to have over to us a living river and not the water course as it currently exists."	Need to explain that some licence will be retained for peak use at Whitehall for resilience to reduce overall investment required	Very concerned having done site visit and found significant loss of local river wildlife/plants etc and poor state of river bed.

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David Brazier	Kent Couty Council	County Council	18/07/13	P	Y	x	x	P	P	Robust approach to demand projections and generally in line with KCC's current expectations. Applauds Affinity's ambitious water efficiency plans. Pleased with leakage proposals. Broadly supportive of LoS. However concerned about 1 in 50 year standpipes and Affinity compares poorly to other water companies. Specific questions / challenges on how we will improve resilience in Southeast and the likelihood of options delivering benefits later in the planning period. Supportive of bulk transfers. Urges companies to resolve any differences in bulk transfers between donors and recipients. Not clear if Affinity's bulk transfer proposals require new pipelines; if so, seeking assurance that everything possible is done to minimise the impact on the environment. Challenge as to whether dual flush WCs would be relevant in 2034. Pleased that carbon will reduce by 10% by 2020. 5% increase in bills seems reasonable given the level of investment.	Confirm that our WRMP is consistent with WRSE. Explain analysis vs. actual LoS offering to customers and alignment with the Drought Plan. Resilience provided by bulk supplies agreements with Southern and South East that are available but not needed to resolve deficits in AMP6. Explain that bulk transfers resolved and that they utilise existing infrastructure with no new investment. Greater clarity about what is in our plan for our Southeast region	Appreciates AW's involvement in the Kent Green Deal Partnership - key opportunity to work together.

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Michael Smith	Watton-at-Stone Parish Council	Parish Council	18/07/13	Y	P	x	Y	Y	P	The preferred plan balances the changes needed against the overall cost very well, we support the plan. Maximum effort must be made to prevent wastage, but not explicitly saying go beyond ELL. Essential that "extensive reductions in abstraction from aquifers... are made... in particular... the River Beane". £10 should be acceptable and "even higher increases could be justified". Metering is "firmly supported". "Effort must be made to build surface reservoirs as part of a long term programme... new reservoirs should be included in the £15.5M improvements to guarantee supplies... the region should not go on experiencing hosepipe bans when there are short term drought conditions."	Further explanation about options appraisal and that assessment over 50 years still shows reservoirs as unfeasible. Also high SEA risk and deficits can be solved without them for less cost. Highlight that some responses suggest Affinity should be less cautious about applying restrictions and would prefer them more often / sooner. Explain outcome of leakage compared to our economic level of leakage. Explain long term role of storage reservoirs	NFC
Avril Gardiner	Resident	Resident	21/07/13	x	x	x	P	x	x	Response specifically relating to the cessation of abstraction on the River Beane and willing to pay more on the water bill to ensure this happens.	Highlight continued desire to reduce abstraction where damage is occurring and innovative approach to seeking EA to notify us	NFC

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Martin Paine	East Herts Council	County Council	22/07/13	Y	x	x	P	x	x	Formally requests cooperation with Affinity and EA to assess abstraction points where SRs may be made and that the Government give greater consideration to the long-term sustainability implications of an increased population, in particular the resulting impacts on the water environment and security of water supplies. Concerned about the security of future water supplies, giving rise to more frequent droughts and floods. The WRMP does not have sufficient regard to the implications of increasing population and its impact on the water environment. Wishes to be involved in the appraisal process for sites for SRs.	Explain about updated housing and population growth and out use of Census 2011. Explain how this factors into the demand forecast and that the plan must ensure supply meets demand every year in the planning period. Our WRMP includes details of the sustainability reductions appraisal process. Explain how we will accommodate future sustainability reductions obligations. Explain how we maintain resilience in drought and floods.	EHC will seek to support proposals through its own measures - such as water efficiency targets.
Jenny & Brian Woodget	Resident	Resident	22/07/13	x	x	x	P	x	x	Closing Whitehall pumping station: "We both agree that the pumping station should close, and we are willing to pay more on our water bill in order that this should happen."	Need to explain that some licence will be retained for peak use at Whitehall for resilience to reduce overall investment required	NFC
R Falder	Aston Parish Council	Parish Council	26/07/13	x	x	x	P	x	x	Seeking closure of Whitehall to save the River Beane. £10 per year is a price well worth paying, works out at less than 28p per day. "We are the citizens of tomorrow and we want the current generation to have over to us a living river and not the water course as it currently exists." In addition in favour of further expenditure to reduce leakage and compulsory metering. No new reservoirs were constructed to deal with rapid increase in population. "If only we had a national water grid!"	Explain the role of WRSE and why 'national grid' is not needed yet. Need to explain that some licence will be retained for peak use at Whitehall for resilience to reduce overall investment required	Misquoted - quote should be: "we are the citizens of today want [sic] the current generation to hand over a living river to future generations and not the dried up water course as it currently exists"

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Philip & Brenda Hewett	Resident	Resident	29/07/13	Y	x	x	Y	x	x	Support plans for provision of water in the Central region. Commendation for the improvements planned to the environment, particularly the reduction of abstraction from chalk rivers. Prepared to pay a little more on water bills if abstraction would be reduced. Very keen to see the closure of Whitehall pumping station.	Need to explain that some licence will be retained for peak use at Whitehall for resilience to reduce overall investment required	NFC
Andy & Doreen Trotter	Resident	Resident	01/08/13	Y	Y	x	Y	Y	Y	Plan is balanced. Must tackle uneconomic leaks to improve the network. Environmental improvements are worth an extra £10 - £20 on each bill, providing poor customers are protected. Metering "must be the way forward" and charge those who are extravagant with water use. Invest now before the next drought.	Social and transitional tariffs explained as part of the metering delivery plan. Explain why drought resilience spend no longer needed	NFC
Chris Lowe	Resident	Resident	01/08/13	x	x	x	x	x	x	Lengthy response also submitted to South East Water and Southern Water. Cites numerous references to published papers and documents. "Concerned that the full requirements of the Habitats Directive have not been included or are being delayed. For example the River Stour should be treated as a priority for low flow support." Current forecasts less reliable than previously, when there was a regional structure. Found no mention of using incentive tariffs. Seasonal tariffs are an option to spread and reduce demand. Supportive of rising block tariffs and smart meters. Approx. 3 pages specifically responding to SEW's draft WRMP.	Further work done on our HRA and cumulative effects of options as part of updated SEA. Commitments to determine no deterioration and our contingency should an option not be viable. Explain that SRs on Little Stour no longer in the plan. Highlight that our tariff trials suggest seasonal and rising block don't have a significant impact on consumption	NFC

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Stuart Sampson	Environment Agency	Regulator	01/08/13	x	x	x	x	x	x	No specific response to any of the consultation questions, identifying recommendations and improvements to our draft WRMP.	**See Appendix B.**	NFC
Rachel Crabbe	Natural England	National Group	01/08/13	P	P	x	Y	Y	x	Supports demand management measures proposed. HRA is "clearly and logically presented" and the SEA "contains clear baseline information, objectives and methodology" however there are some gaps. No mitigation is proposed from cumulative impacts assessment of the preferred plan, more work needed to conclude the cumulative effects. Supports ongoing investigations into NEP and chalk streams, but suggests the plan is misleading in that customers will be given the choice about whether to do SRs (section 11, p118) as it will be a requirement under WFD. Inconsistencies of bulk transfers between donor and recipient companies need to be resolved (Thames' plan doesn't include transfers to Affinity). Additional comments provided on HRA and SEA.	Further work done on our HRA and cumulative effects of options as part of updated SEA. Commitments to determine no deterioration and our contingency should an option not be viable. Explain that SRs on Little Stour no longer in the plan. Explain that customers generally support the preferred plan. Confirm bulk transfer inconsistencies have been resolved	NFC

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Adam Comerford / Peter Roberts	Canal & River Trust	National Group	02/08/13	x	x	x	x	x	x	General comment "whilst we have had detailed discussions with some water companies to identify potential schemes, these are not reported in a consistent way in the various draft WRMPs. We are concerned that such schemes may have been evaluated less positively than alternatives because of the perceived complexity of a canal transfer and the uncertainty over commercial terms". Appears to be no reference to CRT or discussions between CRT and Affinity. "We are disappointed that the efforts expended by the CRT do not appear to have been given much emphasis in their draft WRMP." Suggest that various possible schemes be considered further.	Need to improve explanation in sections 8 and 9 about parties we have spoken to in the development of our options, including CRT. Explain that CRT options have not been biased in our modelling and that they are not cost beneficial compared to other options. Engineering difficulties have not adversely affected the outcome of the modelling. Maintain dialogue	Welcomes opportunities to work together with water companies (using canals).

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Sarah Sheldon	Hertfordshire County Council	County Council	02/08/13	P	P	N	Y	Y	Y	Laudable policies and significant investment in draft WRMP. What happens if PCC does not drop in Hertfordshire? Although supported by WRSE "research", concerned about reliance on transfers to provide water for Herts, wants higher headroom. The leakage target has not been set at level which rigorously tackles the problem, although does not make reference to the econometric impact. Leakage targets should not be adjusted in response to the weather. Supports SRs. Concerned that metering savings will not be retained year-on-year. Would like to see alternative plans should demand savings from metering not be achieved. Supports drought resilience proposals.	Further explanation about our integrated network and the ability to move water around. Contingency schemes include Lowerfield, GW source from Cambridge. Water efficiency campaign part of metering will help change behaviours, as will measured tariff - customers have the choice in the first 24 months. We propose to do more leakage than is economic in response to customer's wishes. Headroom increased to allow for uncertainty of imports	Would like to see water companies working together developing strategic water resource infrastructure at a regional level

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John Archer	National Farmers Union	National Group	02/08/13	P	Y	x	x	Y	x	Supports leakage beyond ELL. Welcome proposals to increase metering and water efficiency. NFU educates its members to read meters regularly to detect leaks early, saving waste and reducing bills. Acknowledges the need to work with water companies to try to smooth out demand peaks caused by horticulture. Welcomes delays to restrictions caused by drought for small businesses. Hoping that Affinity will help identify collaborative opportunities and support farmers in establishing on-farm reservoirs. Looking forward to the opportunities presented by licence trading. Fully support the regional approach taken by WRSE. Notes collaborative working with the EA, Natural England and water companies in catchment management.	Make more of our catchment management programme for PR14 and the partnership needed with farmers to make it a success. We are keen to explore licence trading opportunities with small licence holders	NFC
Anne Mead	Resident	Resident	02/08/13	x	x	x	P	x	x	Re: Water extraction from rivers and precious chalk streams in Herts. Very concerned about extraction of water from rivers and chalk streams by Affinity. Rivers such as the Mimram and Beane are home to very special forms of wild life and the lack of water in such habitats is threatening the whole ecology. Urgently asking that this matter is given priority in future plans.	Highlight continued desire to reduce abstraction where damage is occurring and innovative approach to pushing EA to notify us / develop operating agreements for emergencies	NFC

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Susan Thornton-Bjork	Royston Town Council	Town Council	02/08/13	x	x	x	x	x	x	Affinity draft WRMP was discussed at recent Town Council Committee meeting. Affinity should be mindful of the increased demand in Royston and the surrounding areas. Would like to invite a representative from the company to come to talk to the council to explain plans for future water supply to the area.	Explain about updated housing and population growth and out use of Census 2011. Explain how this factors into the demand forecast and that the plan must ensure supply meets demand every year in the planning period. Contact after submission to present to consultee	

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Lesley Harding	Surrey County Council	County Council	02/08/13	x	P	x	x	Y	x	Response is particularly focussed on WRZ6. Welcome metering proposals but would like more information about how such targets will be met and what contingency is available. Would like to see details of how metering will be integrated with wider engagement to help high consumption customers (residential and business) reduce demand. Welcomes measures and targets for leakage, but wants to know more about plans to identify, communicate and respond to leakage incidents when they occur. What measures exist to speed up detection and response times. Concerned about the reliance on resource sharing, specifically imports from Thames Water as they need to balance their own customers' needs. Again, what contingency plans are in place should the Thames import become unviable. Seeking a commitment that works in the highway will be properly resourced to minimise disruption with a 'right first time' approach. Concerned about bill impacts above 5% should the preferred plan be unachievable. Would like all water co's to present key info in the same way year-on-year.	Need to explain metering delivery plan and that WRZ6 will be metered in AMP7. WRZ6 highly resilient due to interconnections and surface works on the Thames. Improve explanation about our leakage management. Explain transfers from Thames subject to contractual agreement and available in dry periods, plus we will only take what we need up to the limit of the contract. Metering delivery proposals include alignment with other street works including mains renewals to minimise impact as well as provide an excellent customer experience. Headroom will assist management of bill impacts should plans not achieve full benefits. Contact after submission on provision of regular information	NFC

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Gaynor White	Worplesdon Parish Council	Parish Council	02/08/13	x	P	x	x	Y	x	Individual property-by-property metering needed (misunderstanding of what street-by-street means). Leaks to be repaired immediately (but no reference to ELL). Approve the decision to maintain and not damage the environment. Desalination option must be considered. We should not export water while our own need is so great. Lack of clarity about benefits to customers from selling our surplus in East to Anglian. Must be an increase in water storage. Sensible to provide various devices for households to reduce water use. Queries whether customers know that they must provide a surface water discount? Stand pipes are not an option in the 21st century.	Provide further clarity about metering programme and that everyone will get a meter. Explain results of leakage online panel re: response time to leaks and what we are doing to improve. Explain need to share resources wisely and in accordance with WRSE principles so bulk transfers to others will remain, but we receive far more than we donate. Reservoirs uneconomic over 25 year planning period + 50 year assessment period. Clarify actual LoS offering and confirm standpipes not acceptable	NFC

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Dr H Bailey & Mr A Champion	Hertfordshire Geological Society	Local Interest Group	05/08/13	Y	P	x	Y	Y	Y	Queried the "delay" introduced by not doing anything until 2015. Households with a PCC of >300lpd should be specifically targeted for metering and water efficiency. Why has there not been a sensitivity around non-household consumption? SRs are fully supported. It is surprising that no options relating to local water reuse, treated water storage and catchment management are considered feasible. Query lack of use of "non-potable" greensand aquifer for commercial purposes, e.g. water golf courses. Further review of effluent reuse as an option is encouraged. Assumptions of CBA between dumb and AMR not given. SEA high risk options removed is supported. The reference to 'an increase of around 5%' is not understood, we assume inflation is excluded from the bill change chart. draft WRMP fairly states the challenges. Specific recognition of environmental damage should be made. Leakage supported, no mention about the economic level and "no comment" on changing targets with weather. Supports £10 pa increase for SRs. Supports metering. Drought resilience programme is supported.	Explain that >95% of commercial customers are metered. No evidence to suggest significant increase / decrease to commercial demand over next 25 years. Explain that effluent reuse schemes are compared on a level playing field with other options but remain uneconomic, plus high risk SEA. Ambitious catchment management included in our business plan but no guarantee of yield so cannot be relied upon for WRMP. Further cite the benefits of the AMR option including weff and CSPL. Include reference to environmental damage and 'no deterioration'. Explain why drought resilience spend no longer required.	Highlighted Affinity's vital role in geoconservation and calls for greater innovation

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Andrew Bott	Resident	Resident	05/08/13	Y	Y	N	Y	Y	Y	Preferred Plan balances improvements against costs very well. Agrees to take leakage beyond ELL. A leak is a leak and should be fixed, weather conditions should not have any impact on the setting of targets. Happy to accept an increase in water bill if it means a reduction in the impact on over-abstracted rivers. Metering is the fairest way to pay for water. I support compulsory metering. Supports the drought resilience proposals. "In 1998, it was announced... that the Whitehall PS should be closed by 2003. In 1998 the average... abstracted was 17Ml/d.Whitehall has not been closed. In the [last] 10 years abstraction has risen to 22Ml/d. Although the problem of over-abstraction is acknowledged, [the problem] is actually becoming worse because there has been no investment in water infrastructure for Stevenage since Whitehall was built. The longer the problem is ignored, the more expensive it will be to fix."	Need to explain that some licence will be retained for peak use at Whitehall for resilience to reduce overall investment required. Details of sustainability reductions mitigation at a site-by-site level included in our revised WRMP.	NFC

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Frances Burrows	Resident	Resident	05/08/13	x	Y	x	Y	Y	Y	Leakage should be driven below the ELL. Supports £10pa increase for SRs. Agrees with compulsory metering proposals. Suggests £15M resilience is not sufficient. "The problem about metering is that rich people feel they have every right to use as much water as they want, since they are happy to pay for it. Some of their 'wants' may be very wasteful indeed... What about a sliding scale where, beyond a certain level of consumption, the cost of water rises exponentially?"	Explain tariff trials do not identify a significant impact on consumption behaviour, amd that stepped tariff trial doubled water over initial volume but had no material effect. Customers can choose to move to a metered tariff before the transition period, those with higher bills as a result will have two years to modify behaviours	NFC
John Fisher	Ver Valley Society	Local Interest Group	06/08/13	Y	P	x	Y	Y	P	Pleased to support the preferred plan in general and appreciate the opportunities to discuss views by taking part in several forums organised by Affinity. Delighted to note that SRs benefiting the Ver are included. Supports compulsory metering. Leakage is supported, although no specific comment about relationship to ELL (more general about the overall impact on bills). Water recycling should be added to the measures wherever possible. Would prefer drought restrictions are implemented earlier, i.e. don't wait for 3 dry winters.	Further explanation about options appraisal process and the level playing field of reuse options against all other types. Explain levels of service drought trigger clarification and timing issue for implementation. Advise will be introducing “early warning” system for droughts.	NFC

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Malcolm Jeffery	Albion Water	Water Company	06/08/13	P	x	x	x	P	x	Letter is generic in response to draft WRMPs covered by WRSE. Companies have generally opted to prioritise internal performance, i.e. leakage and WRZ transfers, believe this is the right approach. Support the regional approaches to resource management with regard to varying bulk supply agreements. Concerned that plans rely on demand management (metering + weff) where the impact remains unproven in the short term and over time. Further concerned that companies are relying on artificial aquifer recharge (does not affect Affinity). Because companies are relying on internal performance, the WRMPs are not resilient. Albion concludes that importing water from outside the area remains the best option to provide this resilience. Albion has made a serious proposal to one company (not named), based on the bulk supply of high quality water from sustainable sources outside of UK. Considers the benefit of the 'initiative' could be much wider if considered as part of a regional approach. Plans to make contact with all companies participating in WRSE to participate further in the initiative.	Include pie chart of where water is 'developed' in our preferred plan, showing significant proportion from bulk imports. Option not considered cost effective based on unconstrained options and screened out. But propose to meet Albion Water post submission.	NFC
Philippa Dodgson	Resident	Resident	07/08/13	x	Y	x	Y	Y	Y	Yes, reduce leakage below ELL. Reduce abstraction (SRs), specifically cites the Mimram and water meadows at Digswell drying up over past 50 years. People should pay for what they use, supports metering and water efficiency. Supports drought resilience proposals.	Explain drought resilience no longer proposed as addressed by local site investment to mitigate sustainability reductions.	

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Paul Jennings	River Chess Association	Local Interest Group	07/08/13	P	Y	N	P	Y	Y	Supportive of SR's, would like to see specific reductions in abstraction from the upper Chess at the Alma Road pumping station, not included in draft WRMP. Having reviewed the EA's report on the Chess Hydrology Investigation Stage 2, exception is taken to their conclusions which may have driven Affinity's prioritisation. Have written to the EA expressing their concerns and 'errors' in analysis, awaiting response. Agree with leakage beyond ELL. Disagree that leakage targets should be linked to weather, a pipeline system that is fit for purpose is what is needed. Supportive of SRs but questions the increase in cost to customers and whether shareholders are also bearing some cost. Supportive of metering and want an "appropriate budget" for weff, plus "more interface with schools and educational institutions" to encourage customers to be more efficient. Supportive of drought resilience investment, "Affinity should have acted one year earlier with their temporary use restrictions" and "investment in reservoirs is what is required". Twice suggesting that the water industry is not suited for the private sector.	Further explanation of NEP and 'unknown' quantity on the Chess. Include summary of PR14 proposals for NEP as notified by the EA re: 'prioritisation'. Profits not increasing as a result of investment for managing supply deficits. More explanation about current water efficiency programme and draw out Education Centre and the outreach programme in response to schools education comment. Explain impact of earlier response to drought, our proposal for a future “early warning” system and the consequence on levels of service frequency. Explain reservoirs not cost beneficial in economic analysis	NFC
Various (402 signatures)	Friends of the Mimram - Petition	Local Interest Group	08/08/13	x	x	x	P	x	x	402 signatures willing to pay 25p per week to reduce abstractions on chalk streams	No further action	

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Graham Warren	CPRE Kent	Charity	08/08/13	P	x	x	P	x	N	Attended the Hythe environmental forum. Comments relate primarily to WRZ7. Encouraged by inclusion of SRs but concerned that drought resilience proposals lack flexibility (none included for WRZ7) as relying on bulk transfers from neighbours. "Waste-water re-use is inherently drought resilient" but only 3 feasible schemes and none "judged to be appropriate as supply options for zone 7". Consider developing the Southern Water WWTW effluent at Weatherlees as a drought contingency source; both Southern and South East make reference to effluent reuse options in their plans. It could be "worthwhile running the WRSE costing model for this option as a three-company facility". Without drought capacity provision, "the Plan for zone 7 makes for a relatively high risk strategy". Suggest Affinity state "they will not be in a position to support new housing developments other than at the relatively low levels of service... imposition of hosepipe bans... every 2 to 3 years since 1988/89".	Resilience provided by bulk supplies agreements with Southern and South East that are available but not needed to resolve deficits in AMP6. Explain that bulk transfers resolved and that they utilise existing infrastructure with no new investment. Reuse schemes compared on a level playing field with other options and not cost beneficial; include approx. cost per Ml/d of option types in sections 8 / 9 of WRMP. Challenge hosepipe ban frequency point and provide actual restrictions applied. Explain drought resilience for Southeast region.	NFC

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Robin Cole	Resident	Resident	08/08/13	Y	N	x	Y	Y	P	Supports the preferred plan and "the extra cost to customers is fully justified". "The bulk of the water that leaks from the system just makes its way back in the aquifer. If so it would have no effect on chalk streams. It simply wastes the money spent in pumping it up, if it leaks back again. So I see no advantage in controlling leakage beyond what is cost effective." Supportive of SRs to help the Beane and Mimram and happy to pay the cost. "Completely agree" with metering and water efficiency, "appalled" that "Ofwat had effectively fined Veolia... for proposing this". But metering "has to be accompanied by tariffs which penalise the profligate waste". Not convinced by drought resilience proposals "if demand were controlled by compulsory metering and sensible pricing for over consumption". "The best drought resilience measure would be a reservoir, but that would cost rather more than £15.5M."	Explain drought resilience measures no longer proposed as covered by sustainability reductions mitigation measures.	NFC
D Stimpson	Resident	Resident	08/08/13	Y	P	x	Y	Y	Y	The preferred plan should be progressed. Re leakage, "we are short of water in this area and any saving is important". Would like to see "substantial reductions in abstraction at the Whitehall pump station on the River Beane". Supports metering. Resilience proposals are not ambitious enough, "winter rainfall is lost and more measures should be taken to catch… more of this surplus for summer use".	Need to explain that some licence will be retained for peak use at Whitehall for resilience to reduce overall investment required. Explain reservoirs not currently economic for this 25-year planning period	NFC

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K Ashby	Resident	Resident	08/08/13	Y	x	N	Y	Y	Y	Enclosed with D Stimpson's covering letter. "Acceptable, we need to protect the Beane." Leakage targets should not be linked to weather, "difficult to predict - targets should be to reduce leakage".	No further action	NFC
D Ashby	Resident	Resident	08/08/13	Y	Y	x	Y	Y	Y	Enclosed with D Stimpson's covering letter. No additional comments, but identifies already metered.	No further action	NFC
B Biggs	Resident	Resident	08/08/13	Y	Y	Y	Y	Y	Y	Enclosed with D Stimpson's covering letter. No additional comments.	No further action	NFC
Jacqui & Steve Brown	Resident	Resident	08/08/13	Y	Y	Y	Y	Y	Y	Enclosed with D Stimpson's covering letter. Essential that "we do not continue to tolerate bad leakages", a precious resource is being wasted. Supports SRs - "the Beane and several others in Herts are chalk streams. These are very rare and support specific flora and fauna." Supports metering, "we are very lazy in the UK and take water for granted." Supports drought resilience.	No further action	NFC
E & G Coles	Resident	Resident	08/08/13	Y	Y	Y	Y	Y	Y	Enclosed with D Stimpson's covering letter. Supports preferred plan - "better late than never?" Supports leakage beyond ELL "assume cost effective short term". Supports SRs. Supports metering - "many years too late". Supports resilience, but "probably not enough to do a long term effective job".	No further action	NFC
B Eccles	Resident	Resident	08/08/13	Y	Y	Y	Y	Y	Y	Enclosed with D Stimpson's covering letter. Supports all proposals - "leaks could get worse".	No further action	NFC
Gordon & Anne Ewan	Resident	Resident	08/08/13	Y	Y	Y	Y	Y	Y	Enclosed with D Stimpson's covering letter. No additional comments.	No further action	NFC

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J Harboard	Resident	Resident	08/08/13	Y	Y	N	Y	Y	Y	Enclosed with D Stimpson's covering letter. Supportive of all proposals - re SRs, "as long as it is £10 and not a penny more!!" Yes to metering "at no extra cost to the customers!!" Yes to drought resilience at "no extra increase in our water costs??"	No further action	NFC
G Lush	Resident	Resident	08/08/13	Y	x	Y	Y	Y	Y	Enclosed with D Stimpson's covering letter. Unsure about leakage beyond ELL proposal. Supportive of all other points, re metering "we should all pay for what we use, much fairer".	No further action	NFC
George Stergios	Resident	Resident	08/08/13	Y	Y	Y	Y	Y	Y	Enclosed with D Stimpson's covering letter. Supports preferred plan, "goes some way to rescuing the rivers from over abstraction". Supports leakage beyond ELL, "repair will save water in the future". Leakage targets should be altered to reflect weather. Yes to SRs - "if this means a healthy water flow in the Beane it is worth it, also an EU rule says chalk rivers must be protected". Yes to metering. Yes to drought resilience, but "a reservoir should replace abstraction from chalk rivers which cannot sustain growing demand in the future".	Explain drought resilience provided by sustainability reductions mitigation measures.	NFC
Bill Richards	Chesham Town Council	Town Council	09/08/13	x	x	x	x	x	x	Endorses the Impress the Chess response (09/08/13). "The Council is particularly concerned over the level of abstraction from our catchment area, namely the River Chess." The Council is aware that this is ultimately a matter for the EA but feel nonetheless the water companies should be made aware of local residents strong sense of disquiet on this issue."	Further explanation of NEP and 'unknown' quantity on the Chess. Include summary of PR14 proposals for NEP as notified by the EA re: 'prioritisation'.	NFC

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Charlie Bell	Herts & Middlesex Wildlife Trust	Charity	09/08/13	Y	Y	x	Y	Y	Y	"In general the draft WRMP is a good document" but seeking reassurance that environmental objective stated in section 1.1 reflects a genuine desire to address environmental concerns, some parts of draft WRMP do not mention the environment where it would be expected. Supports universal metering, pleased to see educational campaigns to drive water efficiency. Commend SRs proposals on Beane and Mimram. "Disappointingly, at no point in the document does it mention the global significance of chalk streams." Concerned by "the selective use of bold type" in section 9.5.2. "We recommend a fifth expectation should be included, for example 'Preventing damage to our rivers and their wildlife'." Pleased that high risk SEA options are excluded. Supportive of the plan that is not 'least cost'. Good to see reduced carbon emissions. No mention of the impact of inflation on customer bulls in 10.6.1. Does Affinity consider offsetting the damage their abstractions cause to the environment by funding river restoration projects?	Further explanation about NEP studies and how we are directed in the programme of work by the EA. River support schemes are considered as part of the options appraisal should our abstractions be found to damage the environment. Ensure appropriate cross references to the environment and the SEA / HRA. Explain inclusion of costs for other morphological changes.	Keen to work with Affinity on achieveing improved efficiency Firmly believes mention of environment/rivers/wildlife in plan is insufficient in relation to actual resident concern

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Kathryn Graves	Impress the Chess	Local Interest Group	09/08/13	Y	Y	Y	P	Y	Y	Supportive of the preferred plan, but "would like to see a reduction in abstraction from within the Chess catchment". Agree with leakage beyond ELL; "it is important that Affinity ensures that customers are aware of the environmental impact of leakage, not just the cost implications." Yes to leakage targets changing with weather conditions, "If certain weather conditions lead to an increase in leakage, it would make sense to alter the targets to aim to tackle more leakage." Agree with SRs, but "we disagree with the EA's Chess Hydrology Investigation Stage 2 report... we therefore call for a reduction in abstraction from the Chess catchment in line with Affinity's objective 'to ensure that our water abstractions are sustainable and do not damage the environment'." Supports metering and drought resilience proposals. Concerned that 2011/12 as base year underestimates demand as it was a very wet year. Would like demand reduction to be rewarded by a reduction in abstraction within the catchment. Note no weff expenditure is planned, concerned about loss of awareness from customers if there is no active campaign. Would like Affinity to campaign for new houses to have grey water systems.	Explain role for wider benefits included as environmental and social costs. Further explanation of NEP and 'unknown' quantity on the Chess. Include summary of PR14 proposals for NEP as notified by the EA re: 'prioritisation'. Explain that metering programme includes a significant volume for water efficiency in addition to our ongoing WET campaign. Modelling assumes a quantity of normal and dry years as well as critical period conditions, base year is not the only condition used as the forecast for the next 25 years. Explain 'no deterioration' for the Chess sources.	they would like confirmation that there is to be no planned increase in abstraction from the Chess catchment. Welcome Affinity's intention to strenghten partnerships with community groups

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Jenny Bate	Kent Downs AONB	Local Interest Group	09/08/13	x	P	x	x	Y	x	Supports a drive to reduce demand through compulsory metering and education, plus "aggressive leakage management". Also move from potable to grey and recycled water use for businesses and industry, plus recycling and grey water storage into all new builds and retrofitting where possible, self sufficient agricultural irrigation via irrigation reservoirs and grey water collection and reuse. Notes "there is no mention made of investigating an ecosystem services approach which is felt should run as an integrated vein through the plan" and "we would wish to see several pilots within the Affinity area set up early on within the first AMP... would welcome partnership working on these pilots". Believes that the "environment tends to lose out" when the conflicting pressures for keeping costs to customers low whilst dealing with "shareholders pressures for keeping their dividends high". Calls for "greater transparency in the information made available on the allocation of resources for new investment and research, costs to the customer and profits to investors".	Reuse options considered as part of options appraisal, but not economic. Pilot trials do not provide water so cannot be justified via the WRMP but intention remains to continue investigation into strategic options to safeguard water for future generations. Business Plan to provide greater transparency about business costs and returns to shareholders. Explain role of ecosystems services approach for the future. Contact to extend partnering after submission.	Name is Jenny Bate

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Ian Knight	River Beane Restoration Association	Local Interest Group	09/08/13	Y	Y	x	Y	Y	P	The preferred plan balances the changes needed against the overall cost very well, we support the plan. Maximum effort must be made to prevent wastage, but not explicitly saying go beyond ELL. Essential that "extensive reductions in abstraction from aquifers... are made... in particular... the River Beane". £10 should be acceptable and "even higher increases could be justified". Metering is "firmly supported". "Effort must be made to build surface reservoirs as part of a long term programme... new reservoirs should be included in the £15.5M improvements to guarantee supplies... the region should not go on experiencing hosepipe bans when there are short term drought conditions."	Reservoirs are compared on a level playing field with other options and have not been calculated as cost beneficial. Further, they have a substantial carbon footprint and take many years to build - the cost of a single reservoir would be more than the entire WRMP over 25 years and would fall some way short of resolving the supply / demand deficit. Explain drought resilience update and why this is covered by sustainability reductions investment.	NFC

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Julia Warren	Wheathampstead Parish Council	Parish Council	09/08/13	x	Y	x	x	Y	P	Summary of objectives listed at the beginning "has merit" but some points are more appropriate than others. More emphasis should be placed on the prevention / minimisation of leaks and wastage (although no mention of going beyond ELL or changing targets in response to weather conditions). "Metering is seen as a fair way to pay for water, especially is it enables householders to reduce their use of water voluntarily." Agree there is a great need for security of supplies and would "commend the improvement of storage of water to provide for the drought years". Pressure to increase the number of properties in the south east causes challenges. "Water companies could recommend that a lower house building level would be more suitable." The long term solution may rest in transporting water over distances, though costly.	Our plan ensures sufficient water is available using growth projections provided by Experian, themselves based on information supplied by local authorities to ensure there is enough water available. Preferred Plan goes beyond the economic level for leaks in response to customers' wishes. Explain drought resilience position, why severity was reduced and why further investment is no longer needed.	Not convinced about the benefits of sharing water across the south east.

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Chris Mungovan	Tewin Flyfishing Club	Local Interest Group	10/08/13	P	Y	Y	Y	Y	Y	"Clearly a lot of work has gone into the plan nevertheless I would still like to see more protection given to aquatic environments especially chalk streams and rivers." Yes to both leakage beyond ELL and changing targets with weather conditions. Supports SRs and £10 is a "small price to pay". Yes to metering, "long overdue". Drought resilience investment should be made. Plus wants to see Fulling Mill closed ASAP, do not want it mothballed and recommissioned during a serious drought. Do not want to see abstraction increased at Digswell. Abstraction should be reduced at Uttlesford. More liaison with angling clubs throughout the year not just during a review period. "Water is scarce in summer and the price should reflect that."	Ensure NEP section is updated and explain changes in SRs for the WRMP. Restate commitment to continue Environmental Forum. Seek to improve liaison with angling clubs after submission. Explain absence of price absence of price escalators from metering trials.	believes Affinity needs to revisit its PCC calculations
Robert & Andrea Thornton	Resident	Resident	11/08/13	Y	Y	x	Y	Y	Y	"The plan… is balanced in the sense that the savings are to be made through a variety of strategies." The use of "medical grade water to flush our toilets... is not sustainable". "The consumer also needs to be educated to understand that with increasing demands on supply the cost of water, like any other commodity, must rise." Yes to leakage beyond ELL, SRs at £10 per year, metering, drought resilience, working with other companies to share resources. Would like "rainwater harvesting on an industrial scale as well as at a domestic level".	Education vie metering programme and water efficiency campaign that already operates in our business. Water reuse options considered in economic appraisal but were not least cost	Other basic commodities eg. energy and food have environmental costs built into the price

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Liam Flynn	Epping Forest District Council	District Council	12/08/13	x	x	x	P	x	x	Seeking Affinity's review of Epping Forest's proposed growth plans, reflection of these documents in Affinity's plans, and assurance there will be sufficient water whilst protecting the environment - combined response also applying to Business Plan, whilst not responding to the WRMP consultation questions. Harlow remains a key growth area despite the revocation of the East of England Regional Plan. "Affinity is reminded of its role as a water provider in avoiding unacceptable impacts on the environment and the importance of cooperation with Local Planning Authorities."	Clearly explain that growth forecasts provided by Experian and based on data provided by local authorities, therefore Epping Forest growth included. Explain recognition of responsibilities to avoid environmental impacts and how we will liaise with local authorities.	NFC
John Laverty	Institution of Civil Engineers	National Group	12/08/13	Y	x	x	Y	Y	x	"The draft WRMP is comprehensive." "We... consider that the level of consultation has been excellent." The draft WRMP provides little information on water issues such as that of agriculture or major businesses and how they have been considered in the plan as well as the stress they put on available resources. "Efforts in metering and tariffs, water efficiency and leakage should be commended." It would be useful to include a brief commentary on the impact of potential competition on the plan and Affinity's stance on the matter. Whilst not least cost, "the balance of supply and demand management options looks sensible". SRs justified. Pleased with the consistency of WRSE approach. Universal metering with social tariffs is the best way to limit demand.	Include statements on our approach to competition and AIM	NFC

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Jenny Bissmire	Markyate Parish Council	Parish Council	12/08/13	x	Y	x	x	P	x	Supports reduction of leakage beyond ELL, including replacing old mains proactively rather than reactively. Zone 2 being last for metering is "detrimental" to Markyate residents re: cost savings and should be made aware. There is a need to improve customer perception of metering and reducing their consumption by rain water harvesting and grey water use. Would like bills to show actual daily litres used. "All households, even those metered, are to be expected to pay towards the cost of compulsory metering." Water companies should be more directly involved with new development planning. "Developers and [buyers] need to make a financial contribution to the extra water provision they demand in an area which is already short of water." Pleased that Kensworth Lynch abstraction will be reduced. Supports SRs and catchment management. Concerned about sharing resource from neighbours when they have restrictions and might not be able to meet supply. "The idea of a national grid for water should not be so lightly discarded." Canals & Rivers Trust could be "asked for advice".	WRZ2 will be metered in AMP6. Customers can still opt for a meter at no charge if they wish. Legislation requires us to provide water to developers and the WRMP develops the necessary water to deal with projected growth; developers do pay for the additional infrastructure. Kensworth Lynch abstraction will not be reduced. Include summary of catchment management proposals for PR14. Explain contractual arrangements with neighbours require them to supply water and we will only take what we need. Our network is highly integrated; we can move water around but it costs a lot of money and the carbon footprint is consequently higher than other options. Refer to our liaison with the Canals & Rivers Trust.	Agrees there needs to be joined up policy on water resource planning between local authorities, government and water companies

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Ann Morton	North Mymms Parish Council	Parish Council	12/08/13	x	P	x	N	P	x	Seeks assurance that protecting the environment, especially chalk streams, should be a priority in all future plans. "The Mimram and Beane… simply dry up when too much water is abstracted." Leakage beyond ELL seems counterintuitive, perhaps it would be more cost effective to renew pipes with longer life polythene given that the Plan period is 25 years. Re SRs: "If reducing abstraction results in increased costs then this would not be acceptable... Do you propose to reduce bills accordingly where abstraction is increased?" Re metering, "would be fair if the tariffs are clear and do not penalise users by restricted hours or quantities". No related comment to drought resilience. "Education of the public is not one of your priorities but consider it is a major element for the future."	Ensure NEP section is updated and explain changes in SRs for the WRMP. Mains renewals part of PR14 capital maintenance and already do use materials with 80 year life. Increased abstraction must be justified to the EA to ensure no deterioration occurs to the natural environment, increases in licences not likely to be granted. We do not propose to impose restrictions on customers' use of water. As part of metering delivery, customers will be educated as part of weff offering and early warning campaign. Explain cost of sustainability reductions linked to changing assets and why it costs more.	Stresses importance of cross-parties agreement i.e. partnership work between key stakeholders.

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Linda Derrick	Resident	Resident	12/08/13	x	x	x	P	x	x	Chalk streams of the Chilterns threatened by a reduction in the level of the aquifers, caused by the extraction of water by Veolia, which has been "a source of concern and, I would go so far as to say, anger among residents". Welcome the proposed SRs, especially as "I do not think the water companies should have been allowed to extract such large volumes in the first place". SRs offset by leakage and more efficient water use is right. "I note that water users are to be asked to bear some of the costs although how much is not clear. I note it is not proposed that any of the costs will be absorbed by the shareholders of Veolia. I also believe is it totally wrong for a private sector company to be allowed to destroy rare environmental habitats for profit."	Ensure NEP section is updated and explain changes in SRs for the WRMP. Explained abstraction was licenced by the Environment Agency and has had powers to reverse but has not had cost-beneficial evidence to do so. Our Business Plan will explain the financing of the industry.	NFC

Respondent Name	Organisation	Type	Date	1.5.1: Balance of draft WRMP	1.5.2: Leakage <economic level	1.5.2: Leakage target linked to weather	1.5.3: SRs	1.5.4: Metering & Weff solution	1.5.5: Resilience +£15M	Further Comments from respondent	How this has changed our Plan	Third Party reviewer comments
Sheila & Dick Pilkington	Resident	Resident	12/08/13	x	x	x	x	x	x	"I was instrumental in preparing the response from Markyate Parish Council." Further comments relate to the Affinity water bill just received. Affinity has removed the average and careful user figures previously quoted, no idea how careful we are in comparison to average. "I don't think our water bill is very high." The sewerage charge collected by Affinity is not explained, just a link to Thames Water, a simple explanation should be provided. It would be reassuring if Affinity did a report on their reservoir levels and how they are being used, like the Canals and Rivers Trust. Actions on the last drought commenced months ahead of any obvious concerned expressed by Affinity; customers are not stupid, they can see low reservoir levels and know it hasn't rained. Affinity should use this awareness to seek extreme efficiency in their customers as soon as they can see a problem.	Explain how customers will be presented with consumption information as a result of the metering programme and how they can choose what to pay if they wish to move to the metered tariff earlier. Explain consequence of early drought action on LoS and penalties for Affinity. Explain proposals for drought warning system.	NFC
Peter F Stanbury	Resident	Resident	12/08/13	Y	Y	Y	Y	Y	Y	Yes to balance of preferred plan. Yes to leakage beyond ELL, "water is an essential resources and must be conserved. It is illogical to request consumers to save whilst the supplier wastes due to leakage". Yes, leakage targets should change with the weather as "if conditions result in increased leakage then target should be increased". Yes to £10 for SRs, "an exceptionally cost effective investment to protect endangered rivers and streams". Yes to metering and to drought resilience.	Explain why drought resilience proposals obviated by sustainability reductions mitigation measures.	NFC

Respondent Name	Organisation	Type	Date	1.5.1: Balance of draft WRMP	1.5.2: Leakage <economic level	1.5.2: Leakage target linked to weather	1.5.3: SRs	1.5.4: Metering & Weff solution	1.5.5: Resilience +£15M	Further Comments from respondent	How this has changed our Plan	Third Party reviewer comments
Charlie Bell	South-eastern Wildlife Trusts	Local Interest Group	12/08/13	Y	Y	x	Y	Y	Y	"Further to Herts & Middlesex Wildlife Trust's response to the draft WRMP submitted on 9th August, please consider the aforementioned HMWT response as also representing the views of the other Wildlife Trusts which cover Affinity's operational area. These are Kent, London, Surrey, Essex, and Berks, Bucks & Oxfordshire."	No further action	NFC
Caroline Danby	Stevenage Borough Council	Borough Council	12/08/13	x	x	x	x	P	x	Response to both the Business Plan consultation and draft WRMP. Re: WRMP, welcomes water efficiency to reduce the impact on environmental resources. Notes that SBC has recently published its preferred option for 5,300 homes to 2031, likely to be large scale developments on green belt / greenfield to the north, west and south of the town. Happy to liaise with Affinity to ensure plans are fully taken into account. Re: Business Plan, supports faster pace of investment option to ensure customers have enough water.	Include statement that we will note local authority growth plans in our annual reviews of WRMPs, required should significant change to the WRMP be required as a consequence of substantial growth	NFC

Respondent Name	Organisation	Type	Date	1.5.1: Balance of draft WRMP	1.5.2: Leakage <economic level	1.5.2: Leakage target linked to weather	1.5.3: SRs	1.5.4: Metering & Weff solution	1.5.5: Resilience +£15M	Further Comments from respondent	How this has changed our Plan	Third Party reviewer comments
Allen Beechey	Chilterns Conservation Board (Chilterns Chalk Stream)	Local Interest Group	12/08/13	Y	Y	Y	Y	Y	Y	Supports the preferred plan and compliments the Chilterns AONB management plan's key policies. Keen to see the protection of rare chalk streams. Supports leakage beyond ELL, "leakage is often cited by customers as a reason why they do not save water themselves and in general water companies are perceived as water wasters". Draws comparison to leaking more in Central than is supplied to WRZ1. Agrees leakage should be linked to weather, "important for Affinity to increase its efforts to reduce leakage during times of drought". Supports SRs, even though bill impact will not be welcomed in the current economic situation. However would like Affinity "to consider what reductions it could make to abstraction in the Chess catchment". Supports metering, but would like Affinity to "include a schools education programme within its water efficiency strategy". Agree in principle with the drought resilience proposals, however "I remain concerned that water use restrictions are not introduced early enough in drought cycles. Although generally unpopular with customers, temporary water use restrictions are a key tool for both the husbandry of water resources and minimising environmental damage to rivers."	Further explanation of NEP and 'unknown' quantity on the Chess. Include summary of PR14 proposals for NEP as notified by the EA re: 'prioritisation'. Explain that water efficiency programme outside of WRMP includes school education as part of the outreach programme and Education Centre. Explain proposals for drought “early warning” system and why drought resilience measures no longer required as a result of sustainability reductions investment.	NFC

Respondent Name	Organisation	Type	Date	1.5.1: Balance of draft WRMP	1.5.2: Leakage <economic level	1.5.2: Leakage target linked to weather	1.5.3: SRs	1.5.4: Metering & Weff solution	1.5.5: Resilience +£15M	Further Comments from respondent	How this has changed our Plan	Third Party reviewer comments
Lucy Lee	WWF	National Group	12/08/13	x	P	x	Y	Y	P	Welcome the response to improving resilience to deal with challenges of climate change and population growth, but important that the "full range of operation options to deliver this resilience are considered and whether these could help to reduce the significant capital expenditure anticipated of £15.5M". Welcome catchment management. Welcome SRs, opportunity for Affinity to "educate customers about the local, national and global importance of the chalk streams habitat" and would like Affinity to take the lead in protecting it. Supports the principal of bulk transfers as per WRSE to prevent the "activation of sleeper abstraction licences or unused portions of licences in areas of environmental sensitivity and water scarcity". Welcome compulsory metering, but would "like to see evidence that PCC will be driven down further... as 145.6l/h/p still represents a high PCC". Resulting leakage remains high at 166Ml/d in 2040 (but no comment on going beyond ELL or targets reflecting weather conditions).	Explain mitigation for sustainability reductions also includes drought resilience, plus operating agreements will retain some licence in emergencies. This provides the least cost to customers to maintain a resilient service. Explain we will continue to support customers to reduce their consumption after the installation of the meters but the behavioural change is not guaranteed. This uncertainty is included in headroom.	NFC

Respondent Name	Organisation	Type	Date	1.5.1: Balance of draft WRMP	1.5.2: Leakage <economic level	1.5.2: Leakage target linked to weather	1.5.3: SRs	1.5.4: Metering & Weff solution	1.5.5: Resilience +£15M	Further Comments from respondent	How this has changed our Plan	Third Party reviewer comments
Andrew Cockburn	C C Water	Regulator	22/08/13	x	x	x	x	x	x	Disappointed that a non-tech summary was not produced (promised at May CCG), document is not as customer-friendly as the Business Plan consultation. Pleased with wide stakeholder engagement, but not enough agricultural. Not enough WTP done in advance of the draft WRMP. Concerned about the scale of the metering programme, and the company's revenue stream, plus conflicting points about transitional tariffs. Insufficient detail about water efficiency and CSPL repairs in the document in support of the metering programme. "Look forward to working with the company" on transitional arrangements for unmeasured to metered. Notes customers support metering. Questions the resilience of the preferred plan in light of SRs, plus what is driving £10 increase on bills. Not clear what "severe" drought means. Based on survey response, customers do not want bills to rise to address leakage, more WTP needed before planning significant expenditure. Wants to know more about why the WRMP differs from WRSE.	Refer to Appendix D for more details. WTP has been undertaken and support for the WRMP is evidenced. Metering delivery includes two year transitional period and a social tariff will be available. Suggestion that Plan is difficult to read was not echoed by other consultation respondents. Also WRMP consultation respondents do generally want leakage beyond ELL. Resilience provided by bulk transfers from neighbouring companies that we can use should the demand management programme not yield the benefits expected. The EA is supportive of our Plan and has not raised any concerns about its conflict with the WRSE outcomes	
Nick Hurt	Resident	Resident	28/08/13	x	x	x	P	x	x	Subject: River Beane, message content "I'm late in responding but we only received our newsletter on Saturday. I certainly agree that it is certainly a price worth paying!"	No further action	

Respondent Name	Organisation	Type	Date	1.5.1: Balance of draft WRMP	1.5.2: Leakage <economic level	1.5.2: Leakage target linked to weather	1.5.3: SRs	1.5.4: Metering & Weff solution	1.5.5: Resilience +£15M	Further Comments from respondent	How this has changed our Plan	Third Party reviewer comments
Andrew Walker	Ofwat	Regulator	28/08/13	P	x	x	x	x	x	Ofwat suggests we resolve: - Completing customer preference surveys and reflecting the results in the final Plan; - Clarifying LoS; - How WAAD has been calculated and more detail about calculation of dry year forecast; - Consistency of transfers between companies; - How utilisation has been used in options appraisal and impact on Pref Plan No "particular concerns" with the final planning solution and scenario testing	**See Appendix C.**	
Andy Chudzik	Resident	Resident	30/09/13	x	x	x	x	x	x	"As a householder whose property backs onto the River Mimram, I have a significant interest in the Affinity Water company's future plans regarding reducing or indeed stopping all water extraction from the River Mimram and closing the Fulling Mill Pumping Station. My chief concern relates to flooding. Given the amount of water that the company currently extracts will stop totally, and the fact that rainfall is predicted to increase by 16% up to 2050 in the wet seasons, in layman terms will this not significantly increase the risk of flooding to my and other neighbouring properties? What steps have been taken to measure the risk and what flood protection steps will be taken if all this goes ahead."	Explain abstraction at Whitehall will not be completely stopped. The retention of some peak licence enables us to abstract in peak periods and means we can avoid the need for expensive new pipelines and we can also pump on request by the Environment Agency to help prevent local flooding.	

Respondent Name	Organisation	Type	Date	1.5.1: Balance of draft WRMP	1.5.2: Leakage <economic level	1.5.2: Leakage target linked to weather	1.5.3: SRs	1.5.4: Metering & Weff solution	1.5.5: Resilience +£15M	Further Comments from respondent	How this has changed our Plan	Third Party reviewer comments
Tom Gilbert-Woodridge	English Heritage	NGO	04/10/13	x	x	x	x	x	x	Apologises for the late response. Response is on behalf of EH East of England, London and South-East offices. "We have not looked at the WRMP or SEA in any detail, but would like to offer the following comments", general comments follow. Specific comments on Affinity WRMP and SEA: welcome cultural heritage content in terms of the baseline and SEA framework (table 3-A of SEA), but unable to assess the potential cultural heritage impacts of individual schemes without further information. Hope that further assessment of heritage impacts will be carried out where necessary (ref tables 5-C and 5-F of SEA). Hope that site specific schemes outlined in section 10 have been assessed in terms of heritage impacts and further work and consultation will be undertaken where needed.	Points considered in the update of our SEA and HRA in support of our WRMP. Commitment to investigate schemes prior to delivery, aligning with other drivers where possible e.g. no deterioration of ecological status as required by the WFD. Wish to liaise and work closely with EH during project feasibility.	

Appendix B1: Environment Agency representations

The Environment Agency identified five recommendations and nine improvements that they wished us to consider in the development of our revised WRMP.

Table 31: Environment Agency recommendations

ID	Topic	Recommendation text	How have we addressed?
1	Levels of Service	The draft plan sets out the level of service (LoS) for its emergency drought orders of 1 in 50 years and a LoS for drought permits of 1 in 40 years. This conflicts with the actions within the company's drought plan and also misleads customers on the level of service they are likely to receive. This presents a risk to the security of supplies in a drought, as the triggers for the company's drought actions will not be accurate. The company has not demonstrated that its customers are in support of the implementation of rota cuts and standpipes at the proposed likelihood of 1 in 50 years. We recommend that the company demonstrates that its approach to its levels of service for emergency drought orders is appropriate and has customer support. If it has not done so, it should carry out customer engagement and/or willingness to pay surveys to provide evidence for this. The company should test this against its deployable output and present the impact of this action at this frequency to its supplies. The plan should demonstrate consistency with the actions in its drought plan and show that there is no risk to the security of supplies in a drought. This may require the company to revise its drought plan.	We have discussed our methodology with our Reporter and have carried out further analysis as directed. We have spoken with the EA at length, and we concluded our discussion via a teleconference on 03/10/13. The EA confirmed that they are satisfied with our approach. We will provide a thorough explanation in the WRMP and we have updated Technical Report 1.2: *Level of Service Hindcasting – Assessment of the Frequency of Drought Restrictions* accordingly, which we have prepared to submit with our revised WRMP and SoR
2	Alignment of draft plan with WRSE and transfers	The Water Resources in the South East (WRSE) modelling project provides the best available evidence on strategic transfers in the South East. We expect companies in the South East to adopt the outcomes of the WRSE modelling or justify any departure. Affinity Water has included several of the transfer schemes from the WRSE modelling in its draft WRMP. Affinity Water should make sure these transfers are included consistently in its final plan. It should confirm the capacities, utilisation and timings with the respective donor and recipient companies. In appendix 2 we have provided a list of transfers we believe should be included in the WRSE water company's plans. The company should consider these transfers and demonstrate in its final plan how these schemes will be included consistently. We encourage Affinity Water to consider whether larger capacity infrastructure could be included to allow future increases in the transfers if it is demonstrated to be cost effective and lead to higher resilience. If the schemes cannot justifiably be planned to higher capacity at present, Affinity Water could consider whether, or how, schemes can be conceived to allow a potential increase in the future.	The availability and costs of transfers have been discussed with neighbouring companies and concluded such that they are included in our revised WRMP. Evidence of our discussions are appended to our WRMP in Technical Report 3.5: *Water Company & Third Party Bulk Transfers*. The outputs of WRSE Phase 3 validate our draft WRMP. All 'core' transfers identified by WRSE are included in our Plan. Transfer capacity is already greater than our least-cost modelling requires, demonstrating additional resilience to change within the planning period

ID	Topic	Recommendation text	How have we addressed?
3	Feasibility of the final planning solution	The final planning solution includes an option that requires a third party abstraction to occur at Uxbridge in order to make water available. There is no current abstraction licence for this option and therefore this option may not be feasible, presenting a risk to the security of supplies in resource zone 4. The company should review its assumptions relating to abstraction at this location and further consider the feasibility of this option. The plan should present sufficient evidence to demonstrate that this option is feasible and will deliver this water. It should also detail alternative options that could be implemented and show how the company will manage the uncertainty around this option to ensure it does not pose a risk to the security of supply.	A single option was queried leading to concern about the overall viability of the Preferred Plan. The option in question (ID 840) has been removed from the feasible options list. As the option provided valuable peak yield, a number of other smaller groundwater sources have been brought into our revised WRMP. Whilst we accept that there is no existing licence at the location of option ID 840, licences on the confined aquifer could present cheaper solutions for our customers with less environmental impact than other options we have included in our revised WRMP. We wish to continue dialogue with the Agency about these proposals.
4	Assessment of environmental impacts of options	The plan does not provide sufficient evidence to show that a number of options in the final planning solution will not have an adverse impact on the environment. This could present a risk to the security of supply where an option may not be viable due to environmental requirements. Although the company acknowledges investigations are needed, the company should assess the risks to the environment of its preferred options promptly to demonstrate its plan will not cause deterioration to water bodies or prevent these water bodies from achieving good ecological status under the Water Framework Directive (WFD). Where the company cannot ascertain that an option will not cause deterioration, the plan should set out the risk to delivery of the final planning solution, if there are any alternative options that could be implemented or present sufficient mitigation measures to protect the environment. This is of highest concern where options are required in the early years of the plan.	We have reviewed all environmental points raised by our consultees and prepared responses in our updated SEA (Technical Report 3.9: *Environmental Report*) and have prepared it for submission with our revised WRMP. We have also carried out assessments of cumulative effects between our options and other companies' draft WRMPs. We have maintained dialogue with the Environment Agency and have been grateful for their local office's support in provision of information to assist in our assessments. We have prepared a revised WRMP that ensures no deterioration in ecological status (WFD) as far as reasonably practical, and have made provision in our revised WRMP for a programme of investigation well in advance of delivery of the options to ensure that options required later in the planning period, when there is much greater uncertainty, do not cause deterioration. Should there be a risk of deterioration, we will consider other viable options as part of this programme of work.

ID	Topic	Recommendation text	How have we addressed?
5	WRP tables	The company has not presented data in its WRP tables that is consistent with information presented in its plan. This makes it difficult to assess the accuracy and validity of many key components in the plan, particularly relating to customer demand for water. Whilst some of the errors within the tables were not the fault of the company, we recommend that the company fully revises its tables to ensure that its data accurately reflects its plan. The company should submit this data using WRP tables that are to be issued in August 2013 as part of the guideline update. This will ensure that the WRMP data and information are consistent and allows customers and stakeholders to fully assess the company's plan for managing supply and demand.	We have rebuilt our micro-component and demand forecast models to mirror the EA tables. We have also built functionality into our EBSD model to auto-populate tables 3a, 3b, 3c and 4 directly, removing the human interface. As we locked down our revised WRMP some weeks in advance of the SoR, we have been working on our population of the WRP tables such that they can be submitted with our SoR and revised WRMP. We have been grateful for the Environment Agency's support in reviewing our tables during the concluding quality assurance phase. We have prepared an exception report in support of the tables, explaining our approach and how we have dealt with issues arising from the structure of the tables (e.g. how to deal with negative yields of feasible options).

Table 32: Environment Agency improvements

ID	Topic	Improvement text	How have we addressed?
1	Demand forecasting	It is not clear how the company has derived some components of its demand forecast. The plan contains insufficient descriptions of how it has estimated its new build PCC, household occupancy and household population forecasts. Additionally, the company's WRP tables contain multiple discrepancies that do not support information in the plan. The plan should set out further information to show how it has estimated these and demonstrates that assumptions and data sources it has used have resulted in appropriate demand forecasts. The company should ensure that this information is presented consistently with data in its WRP tables.	We have addressed all of these points, and have prepared a new report, Technical Report 2.0: *Demand Forecast*. We have expanded our demand forecast section in our revised WRMP to summarise the additional work we carried out during the consultation period, such as the rebuild of our micro-component and demand forecast models to mirror the Agency's WRP tables and our micro-component study during the summer of 2013 to support our peak factors analysis. We have been grateful for the Agency's support in reviewing our revised WRP tables that we have prepared to submit with our SoR and revised WRMP.
2	Assessment and incorporation of climate change impacts	The plan does not set out complete information to describe how the company has assessed climate change vulnerability, impacts of climate change on demand and how the company has tested its plan against climate change uncertainty. The company should ensure it provides sufficient information on how it has assessed these components in its plan.	We have assessed the impact of climate change on demand and on our feasible options (the impact of climate change on available DO was assessed in our draft WRMP and the analysis remains valid). We have accounted for the uncertainty of the impact of climate change in headroom. We have updated the relevant technical reports and prepared them for submission with our SoR and revised WRMP.
3	Environmental impacts	The plan does not set out complete or consistent information to describe how the company has incorporated all its sustainability changes and information from its SEA. The plan also does not show if or how the company has considered how it will prevent deterioration of WFD status. This currently does not show that the company will fully protect the environment or meet WFD requirements. The company should ensure its plan presents complete and consistent information on potential environmental impacts and resultant changes to supplies.	We have accounted for the sustainability changes in our revised WRMP as per the NEP3 list from the Agency (August 2013). Linked to the Agency's recommendation 4, we have updated our Technical Report 3.9: *Environmental Report* to account for the additional work we have undertake during summer 2013 (including our assessment of no deterioration in accordance with the WFD) and have prepared it for submission with our SoR and revised WRMP. We have included provision for a programme of work to investigate options that have the potential to cause deterioration to ensure that we do not proceed with high risk options.

ID	Topic	Improvement text	How have we addressed?
4	Presentation of options, appraisal methodology and costs	Linked to recommendation 3, the plan does not set out complete or consistent information to clearly describe how the company has undertaken its option appraisal. Detail is missing from the plan to show how the company has assessed environmental and social costs and how risk factors have influenced its option appraisal. The company should ensure it includes the information it has already shared with us, in its plan, to show how it has developed its costs and that the cost components in its final planning solution are reasonable. This will allow customers and stakeholders to better understand how the company has determined its final planning solution. Several transfers and resilience options are also presented inconsistently in the plan. The company should set out further information to show how certain costs and information have influenced the final planning solution and ensure that all options are presented consistently in the plan and WRP tables.	We met with the Environment Agency in July 2013 to work through their concerns and we appreciated the opportunity to discuss them. We clarified how we have used risk factors and the environmental and social costs in our modelling, and that the AICs and AISCs in our WRP tables presented in our draft WRMP had errors. We have continued to work on our tables over the summer and have prepared an updated set for submission with our SoR and revised WRMP. We have improved the explanation of our options appraisal in section 8 of our revised WRMP, including that there is no bias on the option selection in our modelling such that all types are compared equally.. We have been careful to ensure that transfers are presented consistently between the plan and tables. We have included information in section 9 of our revised WRMP about utilisation.
5	Outage	We welcome the improvements the company has made to its assessment of outage, but the plan does not clearly show the information it has used to undertake this assessment. It has made different adjustments and assumptions to the methodology recommended in the guideline that are not set out or justified in the plan. The company should provide further justification on the data sources and methods it has used to assess its outage, and show how this has affected forecast outage. Adding this information will inform customers and stakeholders of the approach the company has taken to assess outage.	We have reviewed our outage analysis and have addressed the comments raised by the Agency in our updated Technical Report 1.5: *Outage*.
6	Treatment work losses	The company has assessed treatment work losses as part of its deployable output assessment. Because of incomplete information in the plan, it is not clear if this assessment includes treatment losses related to groundwater sources. The company should undertake a review of process losses separately from its DO assessment and present further information to show how losses from all sources have been included in its assessment.	Treatment works losses were assessed separately to our deployable output calculations for our draft WRMP. We have considered treatment works losses for both surface water sites and groundwater sources in our updated Technical Report 1.1.1: *Treatment Works Losses*. We confirm that losses from all sources have been included in our assessment.

ID	Topic	Improvement text	How have we addressed?
7	Leakage	The plan does not clearly set out how it has derived its short run SELL and how some costs and benefits have been incorporated into this calculation. The company states that it has incorporated the recommendations from the October 2012 SELL review report, but the plan does not show how or if these recommendations have been incorporated. The company should present further information on how it has derived its baseline leakage and ensure that the incorporation of SELL recommendations is clearly shown in its plan.	We have undertaken further work on our leakage cost curves and have updated our Technical Report 3.2: *Leakage Strategy* with this latest analysis, such that it will be submitted with this SoR and our revised WRMP. We have engaged with the Agency to discuss our leakage methodology and explain how we have derived our short-run SELL. We have included more information in section 9 of our revised WRMP. We have also built our non-linear leakage cost curves into our linear economic modelling in an innovative way to be able to include leakage options beyond AMP7 with greater cost certainty, and derive the economic level of leakage for our WRMP.
8	Headroom	The company has incorporated the headroom assessment completed as part of WRSE in its plan for resource zones 1-7, and included its assessment for resource zone 8. There are several pieces of incomplete or inconsistent information in its description of its headroom assessment that result in the plan not fully describing the approach it has taken to calculate headroom. We suggest that the company full describes the data sources, assumptions and approach it has used to calculate the components of headroom and set this out in its plan.	We have updated Technical Report 2.4: *Headroom* with our latest analysis, undertaken during summer 2013, and will submit it with our SoR and revised WRMP. We have expanded section 6 of our revised WRMP to provide further explanation of how we have considered uncertainty in our baseline headroom assessment. We have also considered the uncertainty of our revised WRMP Preferred Plan in our headroom assessment and included this in section 11 of our revised WRMP.
9	Testing Levels of Service	The company has not tested the three levels of service (unrestricted, industry standard and company own) or considered changes to LoS as an uncontained option. This is not compliant with the guidelines and we suggest the company test these three scenarios within its plan.	The EA has queried our position that drought triggers are related to groundwater levels, not demand (other companies link triggers to demand rather than supply). We have further clarified our position and have updated Technical Report 1.2: *Level of Service Hindcasting – Assessment of the Frequency of Drought Restrictions* and we have summarised the actions we have taken in our revised WRMP.

Appendix B2: Letter from the Environment Agency regarding their evaluation of our draft Business Plan

Copy of the Environment Agency's covering letter regarding their evaluation of our draft Business Plan.

creating a better place

Environment Agency

Richard Bienfait
Affinity Water
Tamblin Way
Hatfield
Hertfordshire
AL10 9EZ

Date: 1 November 2013

Dear Richard

Affinity Water Business Plan Evaluation Response

I would like to thank Affinity Water for providing the Environment Agency with material from your draft business plan.

In the attached report, we have used this information to assess the extent to which your business plan will meet your statutory requirements, and the environmental obligations set out in Defra's Statement of Obligations.

When making our assessment, we have reviewed how quickly you are planning to deliver your obligations, together with your overall level of performance. For your river basin management plan obligations in particular, Ministers are looking for assurance of early delivery wherever possible.

My team would be happy to discuss the report with you. We would be pleased to include any clarifications before we contribute to the Customer Challenge Group report and prior to our submission to Defra in mid November.

We look forward to continuing to work with Affinity Water to help ensure that your investment protects and improves the water environment, for the benefit of your customers and the economy.

Yours sincerely

HP Davidson

Howard Davidson
Director South East Region

Cc: Dr Paul Leinster CBE, Chief Executive, Environment Agency
Ian Barker Head of Land and Water, Environment Agency
Robin Dahlberg, Affinity Water CCG Chair
Sonia Brown, Ofwat,
Tim Collins, Natural England
Milo Purcell, Drinking Water Inspectorate

Kings Meadow House, Kings Meadow Road, Reading, RG1 8DQ.
Customer services line: 08708 506 506
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Website: www.environment-agency.gov.uk

Affinity Water

Environment Agency

Response to Affinity Water

Introduction

The final price review methodology confirms that Ofwat expect the Environment Agency to highlight in the Customer Challenge Group (CCG) report whether your business plan will meet your statutory obligations (section 4.2.1 Setting Price Controls for 2015-2020, Ofwat, July 2013). As part of our engagement with your CCG, we have been working with you to be assured that your business plan is in accordance with these requirements.

The following report summarises our views of the draft plan and evidence provided. These views are based on a high-level review of the processes as described in the letter explaining our expectations sent to you in August 2013.

Overview

We have had good ongoing dialogue with you during development of your business plan.

We note that your customer survey work and your willingness to pay surveys show that customers are willing to pay for some modest level of service improvements.

However, we have some real concerns with your plan around implementation of sustainability changes, the return period for emergency drought orders and lack of a change mechanism.

We will continue to work with you to resolve any outstanding issues throughout the remainder of the planning process.

We welcome:

- Your assurances that you will meet your environmental obligations.
- The level of metering, leakage and water efficiency in your Water Resources Management Plan (WRMP) and the development of associated performance measures.
- Your approach to managing risk from future climate change, development growth and extreme weather events.

We are pleased to note that:

- You have included an environmental outcome.
- You are adopting Water Resources in the South East (WRSE) solutions in your WRMP.

environment-agency.gov.uk

We do not support:

- Your challenge to sustainability changes late in the process. You need to recognize that a weak cost benefit case could still result in an alternative objective being set and you need to allow for this.
- The discrepancy between your WRMP and your drought plan concerning return periods of drought management measures.
- You originally proposed a return period of 1:50 for emergency drought orders, now recalculated to 1:118. We have yet to see clear acceptance by your customers for either of these.
- Your lack of a proposed change mechanism. Without one there is a risk that you could be left, with unfunded obligations which may arise from the Second cycle River Basin Management Plan (RBMP).

We need to see:

- Consideration being given to a greater allowance for measures arising from the second cycle of River Basin Management (RBMP) plans to prevent compliance with the Water Framework Directive (WFD) being too 'back end loaded'.
- Confirmation that sustainability changes will be included in the plan and delivered in AMP6
- An assurance that there will be consistency between your Business Plan and WRMP
- Further development of your thinking around outcome delivery incentives and associated rewards/penalties.

We have made more specific comment on the following areas:

These are our observations on the replies you have made to the questions posed in response to the expectations letter.

1. Delivery of statutory and environmental requirements

Based on the information provided in your submission we believe that there is a risk of your company not being able to fulfil all of its environmental obligations during AMP6. We believe that the following areas of your business plan require strengthening to ensure you meet all of your statutory requirements: Water Framework Directive, Water Resources Management Plan and the England Biodiversity strategy. We would strongly encourage you to revisit your plan ahead of final submission to Ofwat.

2. Measures identified within the National Environment Programme (NEP)

Thank you for the letter of assurance (25th October 2013) stating that, based on a revised NEP3 dated 22 October, you have included all schemes within your business plan. We believe the Sustainability Changes proposed in this revised NEP3 (to be formally confirmed as NEP4) will achieve a positive environmental outcome. However, where we have agreed that you can retain a reduced average and peak capability to reduce the cost burden on your customers, you need to be aware that this capability will continue to be reviewed and may need to be revoked if it is found to be preventing environmental commitments being met. This could result in environmental obligations that you need to make an allowance for.

We do not support:

- Your challenge to sustainability changes late in the process. You need to recognize that a weak cost benefit case could still result in an alternative objective being set and you need to allow for this.
- The discrepancy between your WRMP and your drought plan concerning return periods of drought management measures.
- You originally proposed a return period of 1:50 for emergency drought orders, now recalculated to 1:118. We have yet to see clear acceptance by your customers for either of these.
- Your lack of a proposed change mechanism. Without one there is a risk that you could be left, with unfunded obligations which may arise from the Second cycle River Basin Management Plan (RBMP).

We need to see:

- Consideration being given to a greater allowance for measures arising from the second cycle of River Basin Management (RBMP) plans to prevent compliance with the Water Framework Directive (WFD) being too 'back end loaded'.
- Confirmation that sustainability changes will be included in the plan and delivered in AMP6
- An assurance that there will be consistency between your Business Plan and WRMP
- Further development of your thinking around outcome delivery incentives and associated rewards/penalties.

We have made more specific comment on the following areas:

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seeking improvements. We would ask you to justify this statement using specific evidence from your customer engagement.

The return periods quoted on a number of drought management measures were inconsistent with the return periods quoted in your drought plan. You have recently informed us that you will be updating your drought plan to make it consistent with your WRMP and await confirmation this has happened.

6. Reservoir safety

We note your intentions to maintain reservoir safety although you have provided limited information on the programme of work. This is an important duty given the potential high impact your reservoirs pose to public safety. Your continued maintenance and capital investment is essential for public safety.

You have referenced the recent changes in reservoir legislation. Please confirm how you will implement these changes during the next AMP.

Defra set out its expectation in the Statement of Obligations that companies will prepare reservoir plans. We would expect you to continue to develop and maintain on-site plans. You do not refer to incident planning and working with partners to reduce impacts to downstream communities, should an incident occur. We encourage you to co-operate with relevant authorities and partners on the development and maintenance of site plans and on incident planning.

7. Mitigation measures adopted to manage future risks

We are satisfied with your response on climate risks and resilience. You have said you have followed relevant guidance from Ofwat and others, and provided evidence that you have done so. It is important to keep raising awareness of these issues so that the impacts are fully understood.

8. Environmental outcomes

We are satisfied with the outcomes and indicative performance measures included in your business plan which accurately reflect the important role that your company plays in protecting the environment. At the time of writing you are still working on your performance measures and targets and we look forward to receiving an update.

8.1 Delivery and incentives.

The information provided in your submission about incentives and setting of delivery levels was insufficient. We recognise that this work is still being developed but we cannot be sure that your ambition reflects both statutory requirements and customer preferences, nor that you will be sufficiently incentivised to meet your goals. The Environment Agency is keen to promote use of outcome-focussed measures of success, which reflect the delivery of environmental benefits that should follow on from compliance. We also believe it may be appropriate to use financial penalties to incentivise delivery of those statutory obligations, and rewards if customer preferences justify going further or faster than those obligations. Reference to customer preferences, as well as legal obligation, is essential.

9. Compliance

You have told us that your target compliance rate is 100% for discharges from your operations that embrace water treatment waste and water from excavations. We assume that you have a target compliance rate of 100% for abstraction licences too. All water companies should be planning to achieve 100 per cent compliance for all licences and permits, as they are legal obligations. We expect to see this included as a target within your business plan.

10. Change mechanism

At previous price reviews, Ofwat has used the change protocol for managing in-period changes to the risks and costs. This time you are being asked to put forward proposals for dealing with such changes. It is imperative that new statutory requirements, for example schemes arising from the 2nd River Basin Management Plan can be delivered whilst maintaining levels of ambition around customer priorities. We would like to see a clear process for dealing with predictable but, nonetheless uncertain new commitment you could face during AMP6.

To be assured that important "discretionary" outcomes are not prejudiced by additional legislative requirements, we believe you do require an explicit change mechanism for dealing with such changes. We acknowledge your assurance that you are developing one.

11. Natural England

In so far as the comments herein relate to the natural environment, they also reflect the advice of Natural England. In addition, Natural England expects the business plan to explain how your company will deliver its statutory duty to conserve and enhance biodiversity, including on Sites of Special Scientific Interest (SSSIs) which Affinity Water owns or manages. You have told us that these obligations will be met through estates management and the continuation of your biodiversity programme into AMP6, but at present there is insufficient information to reassure us that biodiversity has been considered in development of your plan. Performance measures and targets relating to biodiversity enhancement and SSSI management should be included in the final plan.

Concluding remarks and recommendations

Overall we support many of the proposals contained within your business plan but presently have doubts that you have produced a plan that will meet your statutory requirements and environmental obligations.

The areas where significant improvement is needed as follows:

- Planning to a more appropriate return period for an emergency drought order, or demonstrating that your customers understand and support the one you are proposing.
- Ensuring that your business plan is consistent with your WRMP.
- Clearly demonstrating your approach to Managing Uncertainty.
- Development of a change mechanism.

We look forward to working closely with you over the next few weeks to finalise your business plan. Our aim is to help you produce a plan that delivers its statutory obligations and facilitates the continuing achievement of better environmental performance.

David Howarth
4 November 2013

Appendix B3: Letter of assurance to the Environment Agency and Annex 1

Copy of our letter of assurance and Annex 1 sent to the Environment Agency on 25th October 2013.

Howard Davidson
Director – South East Region
Environment Agency
Kings Meadow House
Kings Meadow Road
Reading
Berkshire
RG1 8DQ

25th October 2013

Dear Howard

Letter of Assurance

Many thanks for meeting us on the 19th September, we found the session very useful.

I am pleased to attach an updated Annex 1 for your use which reflects both our discussion and subsequent actions to complete outstanding actions regarding level of service for emergency drought orders and our economic level of leakage assessment. If you have any further queries or would like further details or copies of the various documents we have referred to please contact let me know.

I am grateful for the continuing contribution from your team in resolving the remaining issues and in particular Nigel Hepworth who reviewed our updated level of service assessment. I am pleased we were able to agree a satisfactory outcome and he made some very helpful suggestions for our forward programme which we have included in our plan.

In terms of implementation of sustainability reductions I thank you for your letter of 17 October. I believe we have achieved a good outcome for our plans for sustainability reductions with a clear view of abstraction changes at each affected site at both annual average and peak day conditions and we are happy to continue detailed discussions on implementation with your local team in due course. We appreciate it is not possible to be completely clear about the legal mechanism for implementation and funding until the passage of the next Water Bill is complete and River Basin Management Plans have been subject to public consultation so we will await that outcome with interest.

I am pleased to provide assurance and confirm that we have included all measures specified in the final NEP3 schedule agreed between our teams on 22 October in our business plan. We have provided your local team with details of proposed studies and investigations, water quality schemes including catchment management and investment proposals to preserve resilience of

supplies following sustainability reductions. We look forward to working with your teams on delivery of these projects in coming years.

Finally, in response to the letter from Colin Buckle of 11 September, I confirm we have included for an additional options appraisal for our Colne Valleys sources as part of the overall studies programme for AMP6 as this covers the great majority of as yet 'uncertain' sustainability reduction sites. In terms of capital investment for implementation of further 'uncertain' sustainability reductions we will include provision for this under a 'change process' in our business plan.

Yours sincerely

Mike Pocock
Physical Asset Strategy Manager

Annex One:
Questions to water companies to support the evaluation of business plans

Note: Text updated and additional section 26-28 added following discussion on 19 September

<table>
<tr><th>Questions</th><th colspan="2">Indicative evidence</th></tr>
<tr><td rowspan="2">1. How will your business plan ensure you meet the statutory environmental obligations that apply to you company as set out in Defra's Statement of Obligation?</td><td colspan="2">We have considered our statutory obligations as set out in the DEFRA SoO and included provision in our Business Plan for expenditure required for compliance for new obligations. We have engaged with our regulators where we have required clarification of measures or actions by others that could affect our investment requirements e.g. Environment Agency (Agency) actions to designate water protection zones.
• We will complete a compliance statement relating to our internal review of obligations and we will use this information to include clear details of compliance in our Plan. A summary of key actions is included below relating to the key headings in the SoO.
• We have developed our water resources management plan in accordance with the regulatory process
• DWI have supported new schemes for new water treatment processes and enhanced catchment management programme to manage drinking water risk
• We have included in our Business Plan all the schemes requested by the Agency in the NEP3 requirement schedule provided in August 13.</td></tr>
<tr><td>o Drinking Water Quality
o The Water Framework Directive
o River Basin Management Planning
o Maintaining Water Quality of Drinking Water Protected Areas (DWPAs)
o Priority Substances and Specific Pollutants
o Groundwater

o Wildlife and Countryside
o England Biodiversity Strategy

o The Habitats and Wild Birds Directive
o Eels Regulations
o Water Resources

o Abstraction Licensing

o Metering consider in water stressed areas

o Supply demand balance</td><td>o Investment proposals supported by DWI
o Investment proposals for NEP incl. in our plan
o Support sector group and local team
o Water safety plans and DOMS
o Partner with EA and other companies on catchment protection. Supported by DWI.
o NEP programme in plan including sustainability reductions and environmental monitoring
o Estates management – Conservation & Access
o Proposed continuation of Biodiversity programme into AMP6 with local partners
o HRA part of our SEA of WRMP
o Screens to two emergency supply lakes
o draft WRMP published and FWRMP in hand. SoR for submission to DEFRA 17/11/13
o Supported AIM development and awaiting clarification of requirements from Ofwat
o Compulsory metering in AM6, concluding in AMP7
o DM options dominate – challenge for AMP6 and AMP7
o Approved by SoS – update Spring 2014 incl. LOS and</td></tr>
</table>

Questions	Indicative evidence	

	o **Drought Plans**
	o **Resilience Planning**
	o **Reservoir safety**
	o **Climate Change**
	  o **Mitigation**
	  o **Adaption**
	o **Sewerage – Flow monitoring of discharges from water treatment works**
	o **Flood Risk Management**
		deferred TUB's for commercial
		o UKWIR methodology of hazard assessment leading to investment proposals for AMP6
		o Inspection programme continues
		o Assessed and adaption and mitigation measures included in WRMP and BP
		
		o N/A
		o Compliant with discharge consents
		o Investment in AMP5 - none for AMP6

2. What environmental outcomes and associated commitments (performance measures) and incentives have you included in your business plan?	**We have committed to a substantial programme of change to deliver environmental improvements and we propose to measure and monitor these achievements through key indicators.** • We have developed four outcomes with our customers and environment is a key part in particular of *'Making sure our customers* have enough water' and we have added a second element *'leaving more water in the environment'*. Environmental benefits also relate to two other customer outcomes, '*Supplying high quality water you can trust'* and *'Minimising disruption to you and your community'*. • We will include in our Business Plan how we are delivering environmental benefits • Business Plan performance measures and incentives have environmental themes; Water Available for Use (WAFU) is the primary measure in addition to targets for sustainability reductions, changes in leakage and PCC (resulting in behavioural change from metering programme to protect the environment) • We have included the Agency's required schemes as detailed in NEP3 (August 2013) subject to minor agreed corrections. • WRMP SEA targets and measures (no changes planned to the targets and measures from our draft WRMP).	
3. What assumptions have you made about future Water Framework Directive commitments that remain uncertain? How have these been reflected within your business plan?	**We have received the Agency's request regarding the 'uncertain' sustainability measures.** • We included 'unknown' sustainability reductions as a scenario in our WRMP to demonstrate the impact on the investment programme • WRMP headroom includes uncertainty for small changes to demonstrate our plan is resilient • In response to 11 September letter from Colin Buckle we have included an additional options appraisal for 'uncertain' sustainability reductions (mostly our Colne Valleys sources) within our £3.4million on-going study programme. In terms of capital investment for implementation of further 'uncertain' sustainability reductions we will include provision for this under a 'change process' in our business plan.	
4. How are you planning to phase delivery of WFD measures up to 2027?	**The majority of WFD notified proposals will be completed in AMP6 with some sustainability measures implemented in AMP7.** • Sustainability reductions will be delivered – 42 Ml/d in AMP6, the remainder in AMP7 (at average, reductions of	

Questions	Indicative evidence
	69.8Ml/d). • Between 2015 and 2020 we are working on the basis of the scheme proposals submitted to the Agency in September 13 to implement the following programmes of work: o Environmental monitoring o Biodiversity o Further environmental studies o Morphology investment projects o Catchment management • We plan to implement the remainder of the current 'certain' and 'likely' sustainability reductions in AMP7.
5. Please can you provide a letter of assurance from the company board that the measures set out in the National Environment Programme (NEP) have been included within your business plan? If there is any material differences please describe them and the rationale for the change?	**A letter confirming that the measures set out in the National Environment programme and agreed with local Agency staff have been appended to this document and included in our Business Plan.** • We have included NEP3 measures in our Business Plan including recent requirements for morphology changes and water quality monitoring on the basis that there is a robust cost benefit case for the proposed investment that is also supported by customers.
6. Are you putting forward any specific proposals for transitional investment before the start of PR14?	**Yes, we are proposing a number of measures as follows:** • PAC dosing plant for metaldehyde treatment at North Mymms WTW – preparatory works will be carried out before 2015 to ensure delivery of the infrastructure works early in AMP6. • Ramping up of catchment management programme – recruitment, planning, early local engagement etc. Our proposals were submitted to the Agency in August 13. • Metering programme – early launch of communications campaign although first installation not planned before 1st April 2015.
7. What action have you taken to ensure that you generate wider benefits and deliver multiple outcomes?	**We have considered the interplay between projects and taken account of wider benefits and multiple outcomes when optimising our investment strategy.** • Combined metering + customer supply pipe leakage + water efficiency to support behavioural change in customers, saving them money as well as reducing water consumption. • Supply pipe leakage reduction arising from AMR metering installations. • Leakage reduction linked to our mains renewals programme. At our meeting with the Agency on 19 September we discussed our approach to the ELL and SELL. We confirmed we were reviewing our assessment of the ELL and SELL for our Final WRMP with our consultants RPS and append details of the outcome of that work. As a result we have improved the robustness of our leakage cost curves and included these directly in our EBSD analysis. Appended: Extracts from our revised WRMP and Technical Reports on ELL and EBSD modelling. Full copies of our revised Technical Reports on ELL and EBSD models will also available w/e 2/11/13. • Water efficiency programme with all customers and with partner organisations to promote added value. • Stakeholder engagement programme – local authorities responded positively to our draft WRMP consultation, seeking involvement in our water efficiency programmes and support for future growth. Strong synergy with waste

Questions	Indicative evidence
	management and planning issues • Ambitious catchment management programme to educate local groups. In addition, partnership with Thames Water and South East Water, maintaining the benefits of a much larger programme with smaller investment. The Agency is an active participant in the scheme. • Commitment to continue the Environmental Forum with local community groups throughout the remainder of AMP5 and into AMP6.
8. Are you planning to adopt innovative or new approaches to the way you deliver environmental outcomes?	**Yes, we have introduced a community-based approach to working with our customers and asset management to enhance support for local investments.** • The balance of demand/supply side measures to reduce demand and leave more water in the environment is weighted heavily to the demand management side which means a greater risk for Affinity. • Sustainability reductions, working on the basis of licence changes at average and peak as the primary regulatory tool for monitoring implementation (as noted in Howard Davidson letter of 17 October 2013) provided these are funded through PR14 and continuing discussion to reduce the impact of sustainability reductions under specific emergency conditions on site by site basis. • We have launched a new platform for asset management which is targeted at local communities and demonstrating the inter-related benefits of community investment programmes such as leakage, mains renewals and replacement of lead pipes to minimise disruption and maximise value. • Metering programme – achievement of our projected demand savings will depend on the success of our engagement programme with customers. We are seeking to learn lessons from South East Water and Southern Water and the Energy Saving Trust's At Home With Water initiative. • New imports from Thames Water to improve overall utilisation in the South East and meet the challenge of sustainability reductions. We have continued to work with Thames Water since our draft WRMP to confirm agreement of the increased supply and to ensure consistency between our respective plans. • Following feedback from Anglian Water during consultation on our draft WRMP and in order to ensure consistency between our revised WRMP and Anglian Water we have included greater uncertainty of our shared supply from Grafham Water in our revised WRMP linked to long term climate change and changes in flow measurement in the River Ouse and this has been reflected in amendments to our headroom assessment. This change does not affect our level of service as we are proposing additional investment measures to compensate for this change.
9. What mechanism is your company proposing to use to adjust prices during the price review period?	**We do our best to protect customers from any new obligations other than those agreed at the Price Review but in view of the need to consider further 'uncertain' sustainability reductions in AMP6 we will be including provision for additional investment under a change protocol at PR14.**
10. How have you ensured that you have identified the most cost effective means of meeting your statutory obligations?	**We have considered a range of options to achieve our statutory obligations and have considered both cost-effectiveness and cost-benefit of options.** • Our WRMP investment and asset maintenance programmes are cost-minimised using industry best practice optimising models (EBSD by Decision Lab and PIONEER by Tynemarch). • WRMP: Economics of Balancing Supply and Demand model to develop 'least cost' programme and full scenario

Questions	Indicative evidence
	analysis to determine the most cost effective Preferred Plan. Strong synergy with WRSE modelling as we have maximised transfers where cost beneficial. • Cost benefit appraisal for all 'Q' schemes. • BP: Pioneer model optimises MI and MNI (new Capex and delta Opex). Willingness to Pay linked to industry standard service measures is a key input to the optimisation. • Programmes of work will be balanced to ensure efficient delivery, e.g. metering and lead CPs and mains renewals at the same time instead of three separate visits. • Plan to develop Pioneer to optimise more programmes of work for PR19. • In view of the Agency's confirmation that no change is anticipated at the current time in the regulatory position with respect to metaldehyde we have designed mitigation and resilience schemes to minimise the risk of deterioration of water quality from increased metaldehyde from our Grafham supply. Combining mitigation measures with some retention of peak licence use has enabled the cost impact on customers to be minimised. • We have agreed to implement a range of sustainability reductions and these have been confirmed by the Agency in NEP3. We are working on the basis of the details we have provided to the agency for the investment needed to adapt our assets and operating system to accommodate the proposed sustainability reductions and included these investments in our Business Plan therefore these are subject to funding at the Periodic Review.
11. What is the total funding allocated to the NEP and managing uncertainty parts of your business plan?	**The total investment we have included to deliver NEP outcomes in AMP6 is £24 million for investigations and studies, biodiversity, morphology, catchment management and environmental monitoring plus £14 million for mitigation and resilience to implement 'certain' and 'likely' sustainability reductions.** We have also included £13 million to maintain security and operational resilience and £20 million for additional treatment to manage pollution risk from pesticides. We have not separately evaluated funding to manage uncertainty in our Business Plan delivery.
12. What success measures have you set for reducing pollution incidents? What is your target compliance rate for meeting Environment Agency discharge permit conditions? How do you propose to meet 100 % compliance?	**Our target compliance rate is 100%.** • Ambitious catchment management programme. • Legal action success (Hatfield Bromate, Hemel Hempstead Buncefield). • Promote the "Polluter pays" principle by responding to planning application. • Discharge control procedures from our mains repair and construction programmes
13. To what degree are you planning to undertake capital maintenance where you have identified that this is contributing to problems within the environment?	**Our capital maintenance programme is an investment for reliability linked to our 'minimising disruption' and 'preserve water quality' customer outcomes and this is also essential to provide the operational flexibility to be able to deliver sustainability reductions.**
14. How have you taken account of the Drainage Strategy Framework within PR14?	**Not applicable.**

Questions	Indicative evidence
15. Are there any differences between the latest version of your WRMP baseline supply and demand forecasts and your business plan baseline supply and demand forecasts?	**There are no significant differences between the latest version of our WRMP baseline (included in the tables and revised WRMP document) and our business plan.**
16. Are there any differences between the preferred options in the latest version of your WRMP and the preferred options in your business plan?	**None planned, our Plans are integrated.**
17. How have you defined, prioritised, and delivered your approach to resilience? How does your approach affect the supply – demand balance?	**We have followed the UKWIR methodology to assess resilience requirements for our operations and to mitigate the additional risk of single point failure to preserve resilience.** We have applied these same principles to assess mitigation measures required to preserve resilience following sustainability reductions and these include: • Schemes needed to implement sustainability reductions. • Peak licence retention linked to sustainability reductions to protect customers in specific emergency conditions. The approach has ensured we minimise cost to customers whilst maintaining a positive supply/demand balance.
18. How will you manage abstraction sites that fall within Ofwat's Abstraction Incentive Mechanism? Do you envisage that AIM will impact on your supply-demand balance?	**We contributed to the AIM research by assessing the potential effect on our operations.** • We have received details of Ofwat's requirements for AIM (21 October 2013). • We note the schedule excludes abstraction sites that have no significant effect on the local environment. • The sites that will be monitored in AMP6 include those subject to sustainability reductions as well as other groundwater sites in particular. In view of the sustainability reductions and demand management measures we are proposing we expect the AIM mechanism to reflect a progressive improvement through AMP6. • We will also monitor the AIM mechanism to assess future day to day operational pumping decisions through AMP6. • Following stakeholder consultation that showed about 90% of customers support the need for having more water in rivers we have established a customer outcome related to 'water availability' and propose incentives in our business plan reflecting our plans for sustainability reductions and reducing consumption through demand management measures. •
19. How do you propose to maintain regular engagement with partners to discharge your RMA duties?	**We are not linked to a Risk Management Authority.**
20. What has been your approach to developing partnership projects to manage flood risk from all sources and sewer flooding? What are your plans for delivering this work during the AMP period?	**Sewer flooding not applicable.**

Questions	Indicative evidence
21. How much funding will be allocated to partnership projects to manage flood risk? What % of total business plan expenditure is this?	**Programme completed in AMP5. No further plans for AMP6**
22. How many properties will be better protected from the risk of sewer flooding through your work during this PR period? What are your measures of success for dealing with properties at risk of sewer flooding? What proportion of all properties at risk on the DG5 register is this?	**Sewer flooding not applicable.**
23. How have you made use of Cabinet Office guidance "Keeping the Country Running", the UKWIR resilience guidance, and Ofwat principles for resilience planning in your approach to managing risks from all types of hazard to your outcomes, services, and networks?	**We have employed the Cabinet Office resilience model to review the full spectrum of risk to our operations and followed the UKWIR methodology to evaluate hazards to outcomes, services and networks.** • We adhere to CCA obligations and the SEMD direction to protect our assets and support regional and national resilience and mutual aid arrangements. • We are carrying out an audit of compliance with resilience requirements and will include a detailed description of how our plans ensure resilience of our operations.
24. How have you taken into account future climate change and the possibility of more extreme events?	**We have taken into account climate change and other more extreme events in accordance with WRMP Guidelines.** • Baseline adjustment to our S/D balance to represent the impact on our existing sources – impact is significantly less than confirmed + likely sustainability reductions. • All feasible options assessed for the impact of climate change on yield, factored in to modelling • Impact of climate change on demand assessed in accordance with UKWIR methodology and accounted for in our planning. • Tested various scenarios where there is less WAFU. • Uncertainty of our WRMP Preferred Plan has been put into headroom.
25. What account have you made to fulfil your duties on managing reservoir safety?	**We have an on-going programme of reservoir inspection and maintenance to ensure reservoir safety and the cost of this programme is included in our Business Plan.** • Our policy of reservoir inspections (5 years external and 10 years internal) and refurbishment to preserve water quality as well as safety will continue irrespective of the proposed changes in reservoirs subject to the Reservoir Act and the cost of this programme has been included in our baseline opex and capital expenditure programme.
26. AOB : Level of Service	**We have reviewed our hindcasting assessment of drought frequency and Level of Service for restrictions on use following feedback on our draft WRMP from both the Agency and Ofwat. We have provided more details of our assessment to Agency staff and our Reporter and expanded and clarified our explanation of our assessment which concludes a 1 in 120 year return event LoS for emergency drought orders. We have been supported by Agency staff in this review which has enabled us to reach an agreed position.** • In the longer term we propose to improve resilience of supplies and LoS for drought restrictions for our customers. Our

Questions	Indicative evidence
	consultation process indicates 55% of customers support this approach • 72% of our 2,000 customer on-line panel are satisfied with a 1 in 10 year LoS for TUB's. • We contributed to the steering group of the recent UKWIR/WUK project to review the Code of Practice for implementation of drought restrictions and as a result are planning to defer the implementation of Temporary Use Bans for economically vulnerable non-household customers to not more often than 1 in 20 years. This change represents an improvement in LoS for those customers. • The drought of 2012 was caused by two very dry winters and we implemented a Temporary Use Ban as there was a significant threat to the availability of resources in the autumn of 2012. This event was followed by an exceptional and unusual wet summer which had an unprecedented effect on groundwater. • A summary of our reassessment of LoS for severe drought and emergency drought orders is appended to this Annex. • We have expanded our Technical Reports on Deployable Output and Drought hindcasting and these are available from w/e 2/11/13. • We have included further details in our revised WRMP that will be available on submission of our Statement of Response. This includes a more detailed explanation of LoS linked to the hierarchy of measures that are available as drought severity increases mapping these to our existing drought triggers and we will amend our Drought Management Plan accordingly at the earliest opportunity. • A number of the drought resilience measures we had proposed in our draft WRMP will now be implemented to preserve resilience of supplies through the delivery of sustainability reductions in AMP6. These measures reduce the operational impact of severe drought although the frequency is unchanged. • In view of the reduction in drought severity effects and clarification of our 1 in 120 year LoS for emergency drought orders linked to a third dry winter drought we are not proposing further investment in AMP6 to change the LoS for emergency drought orders. • We remain of the view that emergency drought orders for standpipes is not acceptable other than in civil emergency conditions. • We welcome the suggestions for further improvement of our assessment from Nigel Hepworth and have included outline details of a further programme of work during AMP6. We will maintain close contact with local EA staff throughout this programme
27. AOB: Demand forecasts and table	**We have resolved the residual issues with our demand forecasts and tables in our draft WRMP** • We have resolved the dichotomy between requirements of the WRMP Guideline and tables completion that arise from a metering programme. Our baseline DF is required to include a continuation of the current optant policy however the optant programme is substantially altered by the introduction of compulsory metering. Accordingly we have preserved our initial baseline DF in our Plan and tables but the baseline for our Preferred Plan reflects a curtailed optant programme. • We have addressed the concerns and recommendations in representations made by the Agency on our draft WRMP. This makes minor changes to our forecast for our revised WRMP. • Our population forecast has increased by c.100,000 over 25 years since our draft WRMP in line with latest Census outputs.

Questions	Indicative evidence
28. AOB: Agency feedback on our draft WRMP	**We have addressed the concerns and recommendations in representations made by the Agency on our draft WRMP.** • We welcomed the constructive feedback on our draft WRMP and the co-operation of Agency staff in helping us to resolve them. We have addressed these issues and revised our WRMP in conjunction with changes in response to other stakeholder consultation. Our revised WRMP and technical reports will be available in conjunction with submission of our Statement of Response to DEFRA on 17 November 13.

Appendix B4: Notes from meeting with the Environment Agency on 6th November 2013

Affinity Water notes of meeting between Affinity Water and Environment Agency 6th November 2013, held to review the Environment Agency's evaluation of our draft Business Plan.

Attendance: **Colin Buckle, David Howarth and Jim Barker, Environment Agency (Agency)**

Mike Pocock and Emma Grigson, Affinity Water (Affinity)

1. Affinity indicated they would be keen to contribute information to the RBMP process to support the consultation over measures and in particular the affordability and proportionality of WFD driven sustainability reductions to confirm existing proposals and future sustainability reductions and thus further obligations and investment needs. Agency confirmed this round of RBMP would cover the period to 2027 rather than the six year period covered by the first round of RBMPs. Affinity welcomed the RBMP and confirmed agreement with the aim of early delivery of WFD measures as evidenced by the leading role the company had taken to date to secure agreement on sustainability reductions for PR14.

2. Agency indicated that they recognised the risk of substantial further sustainability reductions arising from the 'unknown' list was low but nevertheless iterated their advice that Affinity should make provision for potential new obligations. Affinity welcome the advice and agreed with the assessment based on the history of studies in the Colne Valley in particular which constituted the bulk of the 'unknowns'.

   Affinity stated it is willing to review the priority and programme for sustainability reductions as new obligations emerged as it recognised that whilst the Agency has hitherto stated that implementation SR's would not prejudice public water supplies this priority could change and therefore Affinity preferred to agree a pragmatic approach with the Agency to complement the existing programme.

3. Affinity commented it had concerns including potentially substantial investment that was not yet a requirement in view of the penalties incurred at PR09 when they proposed such investment and pressure for flat prices. Agency surprised at pressure for flat prices as Ofwat had indicated to them that additional investment for potential future obligations was acceptable. Affinity referred to today's statement from DEFRA that confirmed Government aspiration for flat prices.

4. Affinity confirmed it had considered a range of mechanisms to finance new obligations such as those that may arise from the current 'unknown' sustainability reductions including outcome incentives, AIM and a change process. Affinity had emailed their outline proposal for a change process to the Agency and invited comments.

5. Affinity confirmed it would include a change process in their BP to make allowance for future investment to meet currently unknown statutory obligations such as those arising from River Basin management Plans and had emailed an outline proposal for comment. Affinity have not found it necessary to use the change process to date and confirmed it was not their experience that Ofwat would agree investment in principle ahead of an obligation arising. CB stated that Southern Water had employed the change process to fund new obligations on sewerage operations and might offer information on their process. Affinity welcomed the suggestion and will follow up.

6. Agency indicated the change process proposal wasn't what they were looking for. What was needed was confirmation of Affinity recognition of responsibilities for new obligations and how it would finance new obligations including if necessary justification for inclusion in prices. MP confirmed that Affinity

recognised it has a responsibility to deliver all statutory obligations even if these were not included in prices but would provide further assurance on financeability.

7. Affinity repeated the assurance in its recent letter that agreed sustainability reductions will be included on the BP. Agency expressed concern over substantial changes in Affinity Plan.

   Affinity confirmed their strategy for their revised plan was largely unchanged from the draft WRMP with leakage reduction below the SELL, compulsory metering in all Central Region zones, ableit at a marginally slower rate to reduce the effect on prices and water efficiency. Affinity was thus committed to achieve the upper bound of demand savings to be able to leave most water in the environment. Affinity explained they have proposed one minor volume change of 2 Ml/d at average only (see table attached) and this to allow for retention of peak licence at Whitehall pumping station.

8. Affinity confirmed its statement in the letter of assurance that the BP supply/demand submission is consistent with the WRMP and uses the same data. Affinity reported they had had a leading role post PR09 that had encouraged DEFRA to direct Ofwat that WRMP's should be treated as an input to the BP and Affinity is committed to that approach. EA stated they were satisfied with this further assurance.

9. Affinity stated that their proposals for outcome delivery incentive mechanisms were shared with their CCG on 4th November. JB confirmed that was so and the Agency were considering these.

10. Cost-benefit of sustainability reductions. Affinity confirmed that Agency local staff had met with them on 4 November and provided the outstanding information on the outcome of Agency work to define the benefits of sustainability reductions and both parties had committed to an agreed cost-benefit statement confirming a robust CB case for inclusion in the revised WRMP. Ref: attached email with meeting notes. Affinity water reported their satisfaction that this would resolve the concerns they had raised with the Agency in August.

11. PCC ambition. The Agency stated that this issue was omitted from their recent response but they expected Affinity would be ambitious with demand reductions in view of its high PCC. Affinity confirmed it recognised the importance of acting, are committed to supporting our customers to reduce their consumption and have proposed a comprehensive programme of leakage reduction, compulsory metering and water efficiency. Affinity aim is to maximise demand reductions in AMP6 and plan to achieve industry leading reductions from their metering programme (13.6%) in line with our experience of compulsory metering in our Southeast Region (16%). The Agency asked what explanation there was for the differences in demographics between Central and East regions where consumption was the lowest in the country. Affinity confirmed this is a result of local value of the community, age profile, lifestyle (commuters in Central) and affluence e.g. white goods ownership.

12. Level of service for drought restrictions. Affinity thanked Agency staff for their assistance to verify their LoS drought restrictions assessment. Affinity have clarified the LoS measures in the revised WRMP (extract provided) and explained the difference from draft caused by an over-cautious interpretation of how the probability of return event occurrence transposes to what customers experience. The Agency confirmed they were now satisfied with the outcome of the review and clarification of the Affinity position.

The Agency/Affinity agreed the meeting had been valuable and that all concerns had been addressed. Affinity requested that the Agency review their letter and amend the version to be sent to DEFRA accordingly.

Mike Pocock

Head of Asset Planning

8/11/13

Additional notes relating to other points raised in Agency response letter received on 3rd November.

No deterioration. Affinity to clarify how it will show its abstractions will not damage the environment.

Affinity has been working in partnership with the EA since 1992 to identify potential effects of abstraction on the environment and voluntarily implemented operating agreements on the Ver, Misbourne, Hiz and Ashwell Springs. In preparing the current WRMP we have assessed the environmental impacts of all feasible options both through our SEA and also in discussion with the EA on a number of occasions to screen out any schemes with significant environmental concerns. Groundwater abstraction has the lowest cost and highest quality and therefore abstraction under current licences is maximised which means there is a low risk of 'deterioration'. We have an on going programme of environmental monitoring and will continue to assess performance and local effects at all sites during AMP6. We will include all environmentally sensitive sites in our AIM reporting to show how we manage our abstractions. New abstractions or modifications to licences on existing sites will be subject to the standard licensing process and any conditions set by the Agency.

Affinity welcomed the Agency's suggestion that the assessment of deployable output should be reviewed during AMP6. We would be willing to explore this issue with the Agency as we recognise the value in improving the robustness of the current process.

Reservoir safety programme. Agency seeking how Affinity propose to take account of changes in legislation. Affinity is willing to participate in the risk assessment review of its reservoirs arising from the recent changes in reservoir legislation. Our initial view is that this may reduce the number of our reservoirs subject to the act but this will have only a marginal effect on our inspection programme as we currently and in future adopt the same standard of inspection and maintenance for all our reservoirs. We will provide details of our reservoir inspection programme separately.

Discharges and abstractions. Agency would like to see a 100% target for abstraction licence compliance. Affinity confirm we have a 100% compliance record on abstractions and will continue to operate with that goal. We meter all our abstractions and monitor integrated flows continuously at all sites with alarms set to limit abstraction to licence conditions. We calibrate our flowmeters in accordance with EA best practice guidance.

Implementation sustainability reductions. Agency expects to use licence changes to monitor sustainability reductions and does not agree with Affinity proposals for an operating agreement or the conditions for emergency use. Affinity is willing to implement sustainability reductions as required by the Agency and awaits confirmation of the mechanism to be used either through revocation, notification of environmental damage or an operating agreement. Meanwhile we remain willing to continue discussions on the details for implementation and any potential specific operating conditions relating to supply resilience at the Agency's convenience.

We note comments by local Agency staff that sustainability reductions for Whitehall pumping station may be subject of notification under the Environmental Damage Regulations.

Further to bullets 4 to 6 of the notes of the Affinity/Agency meeting on 5th November 2013.

Change process

Affinity recognises it has the responsibility to finance all statutory obligations irrespective of the outcome of the PR14 process and this change process.

The change process will consider potential investment requirements that may arise from a range of legislation such as described in DEFRA's Statement of Obligations and in particular those relating to the Water Framework Directive arising from River Basin Management Plans.

Scope of our change process

Changes to statutory outcomes or new evidence necessitating new actions

Changes to any notified item

Changes to any service levels associated with an urgent customer priority

We will include proposals for a change process in our business plan submission for PR14 that will be no less rigorous than the Ofwat Change Protocol for 2010-15.

We will use this change process to assess and recognise changes to financial requirements assumed in price limits.

We will lead the change process and through regular dialogue consult with regulators to thoroughly explore options to produce robust and clear evidence regarding the cost and risk implications of proposed changes to our operations and assets and the benefits to customers.

The process will show how we have assessed the significance of net financial requirements of changes and taken into account flexibility in existing totex provisons relating our wholesale operations and we will provide reliable, accurate and complete information to Ofwat, the Environment Agency, the Drinking Water Inspectorate, the Customer Council for Water, our Customer Challenge Group and DEFRA accordingly.

We will implement our statutory obligations without undue delay having regard to the priorities and outcomes we have agreed with our customers and the need to maintain resilient supplies at all times.

We will update our plans to account for changes in our operations as soon as practicable.

Appendix C: Ofwat representations

Ofwat identified five points that they wished us to consider in the development of our revised WRMP.

Table 33: Ofwat recommendations

ID	Topic	Recommendation text	How have we addressed?
1	Customer preference surveys	The company should complete its surveys of customer preferences, including in relation to levels of service and leakage reduction, and take them into account in its final plan.	In the development of our draft WRMP, we carried out consultation on our SEA and general water resources queries that we used to shape our Plan for wider consultation. We have explained how we engaged customers, the results of that consultation and how we have changed our Plan to reflect their views. We have explained the changes we have made in this SoR and have prepared a new Technical Report 3.8: Engaging Customers in Future Planning to collate all of the engagement activities we have carried out.
2	Levels of Service	The draft plan does not appear to consider any options involving a reduction in levels of service. The company should explain why it has not done so or rectify this in its final plan. There are inconsistencies in the levels of service quoted in the draft WRMP documents. The company should clarify the levels of service it is committing to in its final plan.	As per our response to the EA's recommendation 1, we have discussed our methodology with our Reporter and have carried out further analysis as directed. We have spoken with the EA at length. We concluded our discussion via a teleconference on 03/10/13 and the EA is now satisfied with our approach and explanation as to why we have not offered reductions in levels of service (no customer support as we are delivering sustainability changes) although we have introduced a reduction in frequency of TUBs for some non-household customers in accordance with the update of the industry Code of Practice . We provided a thorough explanation in our revised WRMP and we have updated Technical Report 1.2: *Level of Service Hindcasting – Assessment of the Frequency of Drought Restrictions* accordingly.

ID	Topic	Recommendation text	How have we addressed?
3	Supply / demand balance: Weighted Average Annual Demand & Climate Change	The concept of weighted annual average demand is important for determining the most likely level of demand that the company will face over the planning horizon. However, we can find no reference in the draft plan as to how the company has calculated weighted annual average demand. Similarly, there is very little information on how the company has derived its dry year forecast. The company should explain these matters in its final plan. Affinity Water states that it has allowed for the impact of climate change in its demand forecast in line with the 'Climate Change and the Demand for Water report 2003'. But there is no detail of how this methodology has been applied in its Technical Report 2.1 (micro-component analysis). The company should provide this explanation in its final plan.	We have included the calculation of WAAD in our demand forecast model (matching the WRP tables), and have explained our approach in our revised WRMP and in our Technical Report 2.0: *Demand Forecast*. We have provided further information about the derivation of our dry year forecast and in the derivation of our peak factors analysis. As per our response to the EA's improvement 2, we have assessed the impact of climate change on demand and included it in our demand forecast and micro-component models.
4	Consistency of water transfer schemes	We welcome that Affinity Water has considered bulk supply imports and exports in its draft plan based on the Water Resources in the South East model. The company needs to ensure its final plan is consistent with the associated companies' final plans in relation to these matters.	As per our explanation to the EA's recommendation 2. the availability and costs of transfers have been discussed with neighbouring companies in parallel with our modelling. Evidence of these discussions is summarised in our revised WRMP, with detailed appended. The outputs of WRSE Phase 3 validate our draft WRMP. All 'core' transfers identified by WRSE are included in our final Plan. Transfer capacity is already greater than our least-cost modelling requires, demonstrating additional resilience to change within the planning period.
5	Utilisation	It is not clear how Affinity Water has used the concept of 'utilisation' in the appraisal of options. The company should clarify how this has been taken into account in its final plan.	We have explained that the costs presented in our scenario modelling are derived from the planned utilisation of the options. For each option, the Capex and Fixed Opex has been applied irrespective of utilisation, however the variable Opex will be costed as per the volumetric use (utilisation) of each option selected by the model for any given scenario. We have summarised this in section 9 of our revised WRMP and provided more detail in our updated Technical Report 3.7: *Economics of Balancing Supply and Demand Model Development, Commissioning & Use*.

Appendix D: Consumer Council for Water representations

We responded to the Consumer Council for Water's representations (letter below) and followed up with a face-to-face meeting in October 2013.

Mr Andrew Cockburn
Assistant Policy Manager
Consumer Council for Water London and South East Region
Consumer Council for Water
1st Floor (East Wing)
Fleetbank House
2 – 6 Salisbury Square
London EC4Y 8JX

04 October 2013

Dear Andrew,

Affinity Water's draft Water Resources Management Plan (draft WRMP) and Business Plan

Thank you for sending the CCWater response to the consultation on our draft Water Resources Management Plan. The points you raise have been captured and carefully considered in developing our Statement of Response which will be completed by the end of October. We thought it would be useful to provide our feedback and response to you directly and to address some of the questions raised in your letter. We have set this out in the attached appendix.

In the intervening period, we have also been in discussion with CCWater members on the proposed plan which we set out in our business plan consultation, our approach to social tariffs and implications of compulsory metering proposals. We have spoken to Karen Gibbs and Jill Thomas on a number of key issues raised by CCWater though the Customer Challenge Group (CCG). We have also discussed some of these matters via our Quarterly CCWater review - the latest Q1 session taking place on 24th September. However, it's important that we fully discuss these important issues with you outside of the CCG and performance review arenas as an important stakeholder in our business planning process. We have listed these key issues below for ease of reference along with our initial responses.

- Affordability for low income households under universal (community) metering / transitional arrangements
- Debt – efforts to control debt levels and impact on households who do pay their bills
- What will happen if the expected demand reductions from metering are not realised?
- Dependencies on water transfers from neighbouring companies

Affordability
We have taken into account the lessons of compulsory metering from others who are delivering it in the current AMP (South East Water & Southern) and from our own programme in the Southeast region. We have developed proposals to offer customers choice about when they switch to a measured tariff following meter installation. A 2 year transitional period will allow us to communicate with, and inform

customers about; water efficiency; the potential benefits; implications of moving onto a measured charge; and available financial support. By adopting this approach, our aim is to minimise the number of customers who are actually compulsorily switched to a measured charge, at the end of the 2 year process.
Affordability is an important issue for low income households irrespective of our community metering programme. In 2014/15 we intend to introduce a social tariff for vulnerable customers. We will be able to utilise this tariff, as one means of support, to assist vulnerable customers who will be migrating to a metered charge from an unmeasured tariff during the community metering programme, commencing in 2015/16.

Debt
We are developing our debt management capability, and will deploy the Experian Tallyman debt management system in 2014. In addition, we hope to become a full CAIS member in 2014/15. We have provided more information on our proposed approach to debt management in response to the CCG challenge on debt. Our focus is to better understand the profile of 'won't pay' customers, and to successfully apply appropriate collection strategies for this segment. Thus, we can minimise overall debt levels, leading to a positive impact on average customer bills. At the same time, we aim to maximise support for vulnerable customers utilising both Social and WaterSure tariffs.

Demand Reduction
Should we find that the expected demand reductions from metering are not realised, then we will have to manage more risk during AMP6. This may require further investments which shareholders will initially finance. It is possible, depending on the level of demand reduction, that we may not be able to deliver the full extent of sustainability reductions which may mean their delivery is delayed.

Longer term, beyond AMP6, we may need to invest in more expensive supply side solutions and strategic options as set out in the draft WRMP for AMP7 and beyond.

Water Transfer Dependency
We are currently heavily dependent on water transfers from neighbouring companies, and this is reflected in our plans. We have around 36 cross border transfers (imports and exports) covering both normal and emergency operating conditions. This includes the key transfers from Grafham and Ardleigh reservoirs.

In developing our draft WRMP we have carefully considered the outputs from the Water Resources in the South East working group where we worked with other water companies and stakeholders to develop the best regional solutions. Our plan includes an increase in the bulk supply we take from Thames Water at Fortis Green to our maximum entitlement.

Next steps

We believe it would be valuable to meet in person to discuss all the issues raised in response to the draft WRMP and Business Plan. In particular, we are keen to share our latest thinking on social tariffs and compulsory metering as well as explaining the remaining process we are following to finalise our Business Plan for Board approval and submission to Ofwat.

We are already scheduled to meet you on Tuesday 8th October: we would like to use this meeting to introduce the issues outlined above.

Yours sincerely,

Vincent Muldoon
Director of Customer Relations

Appendix A: CCWater's response to Affinity Water's draft Water Resources Management Plan (draft WRMP) consultation

Thank you for sending us the CCWater response to the consultation on our draft Water Resources Management Plan. The following sets out our feedback and responses on some of the questions you raised in your letter.

3.1 Mixed response on readability, ordering and sequencing of sections.

We have taken note of your feedback and acknowledge the document is inevitably technical in parts. We will take these comments on board and publish a guide for the final plan similar to the Drought Management Plan Summary which was well received.

3.2 Agricultural sector not engaged sufficiently

The National Farmers Union (NFU) was consulted and responded on behalf of its members. The NFU has indicated its support of our proposals. Natural England was also consulted and responded representing sensitive catchment farming in our supply area. Both NFU and Natural England were invited to attend our environmental forum but did not attend.

3.3 Robustness of customer preferences shown

The accompanying technical report to the draft WRMP titled *3.8 Engaging Customers in Future Planning* (May 2013), described in more detail the engagement channels we utilised to gain an understanding of customer views as part of the pre-consultation. Engagement took the form of both quantitative work to provide robust high quality data and qualitative work to gain an understanding of subjective views that might provide insight into customer thinking. The process we followed to achieve this outcome was not set out in the main document as we did not feel customers would want to read about it in detail. However following your feedback, we will ensure the Statement of Response, our final WRMP and accompanying technical reports provide a clear explanation of this process.

3.4 Scale of metering programme concerns.

Since our draft WRMP we have examined in more detail the investments needed at local level to achieve sustainability reductions and this has enabled a more efficient use of resources which means in our revised plan we are now planning to meter only four water resource zones in AMP6 and two in AMP7 with approximately equal numbers in both periods. This slightly slower rate is consistent with customer preferences and enables us to be more confident about successful implementation.

It is clear that early, consistent and regular communications are essential to help customer understanding and trust in accepting the need for metering. Communicating to key stakeholders in the community and individuals will utilise both digital channels such as email and social media and the more traditional contact routes of letters and face to face.

CCWater's recent review of Southern Water's universal metering programme emphasised that many customers did not fully appreciate that their bill could increase as they migrated to a metered tariff. We will make clear the rationale for metering and the timing of the programme, providing detailed information to customers closer to the point of installation. We will highlight that metering will have a positive impact on some customers' bills whilst other customers may end up paying more. This is seen as a fair way to bill as customers only pay for what they use. We will also make clear the two year transition approach to ease customers concerns over bill shock. Our communication programme will give customers the opportunity to reduce their consumption and potential bill whilst budgeting for any increase before moving to a metered tariff. This iterative process will be deployed throughout the 2 year transitional period for each customer if required.

3.5 Questions over the resilience of the preferred plan

We have included uncertainty of outcomes in developing our preferred plan. If the preferred plan does not deliver sustainability reductions needed, we have considered alternatives such as further leakage

reduction, greater water efficiency promotion and further imports from third parties and neighbouring water companies.

4.1 Not clear what analysis done on impacts that compulsory metering will have in Central re change to and distribution of bills and on revenue streams.

We've taken the decision to allow customers to opt in to a metered tariff at any point within the first 2 years after a meter is installed on the community metering scheme. Thereafter, their tariff will become metered, assuming they have not chosen to transfer earlier in those 2 years. We want to understand how best to support and advise customers on their journey to a metered tariff in the run up to installation and during the two year transition period. To that end we are considering commissioning research to cover:-

- The time sensitivity related to the issuing of direct and indirect communications for affected customers.
- Understanding the optimum timing between detailed direct communication and actual installation date.
- The testing of alternatives for a possible community metering information pack.
- Customer preference for different channels of communication in their metering journey.
- Consideration and testing of the perceived benefit of a customer advice hotline for those in the compulsory metering process.
- Testing the idea of local community meetings held before and during the transition period to demonstrate the effects of metering on households, Water efficiency advice, and help for the vulnerable.
- The degree of interactivity desired by customers of our website.
- Installation issues e.g. access and disruption on the day
- Bill comparisons – testing various presentations of information for customer preference on clarity and understanding.
- Help with investing in water efficiency measures/devices e.g. shower installations.

4.2 No explanation in the draft WRMP about how we will meet our commitment to a) provide water efficiency advice b) offer an audit to newly metered properties c) repair leaking supply pipes.

The meter will be installed with an AMR device to enable it to be easily read. Monthly readings for the first 6 months will be collected and the information made available to the customer, on line or by letter. At the end of the first 6 months, and repeated at 6 monthly intervals, the cost of water consumed using the metered tariff structure, will be compared to that of the existing unmeasured tariff. The comparison letter will enable customers to understand whether they will gain or lose by having a metered bill should they not alter their water use. At this point and at any point after installation, the customer can elect to migrate, and to be billed based upon the consumption read and metered tariff, cancelling the existing bill and replacing it with the new metered bill.

The 6 monthly process will provide customers with the following support:-

- Provision of accurate, relevant information on their water usage
- Comparison of their usage locally
- Advice on how they could reduce their water usage

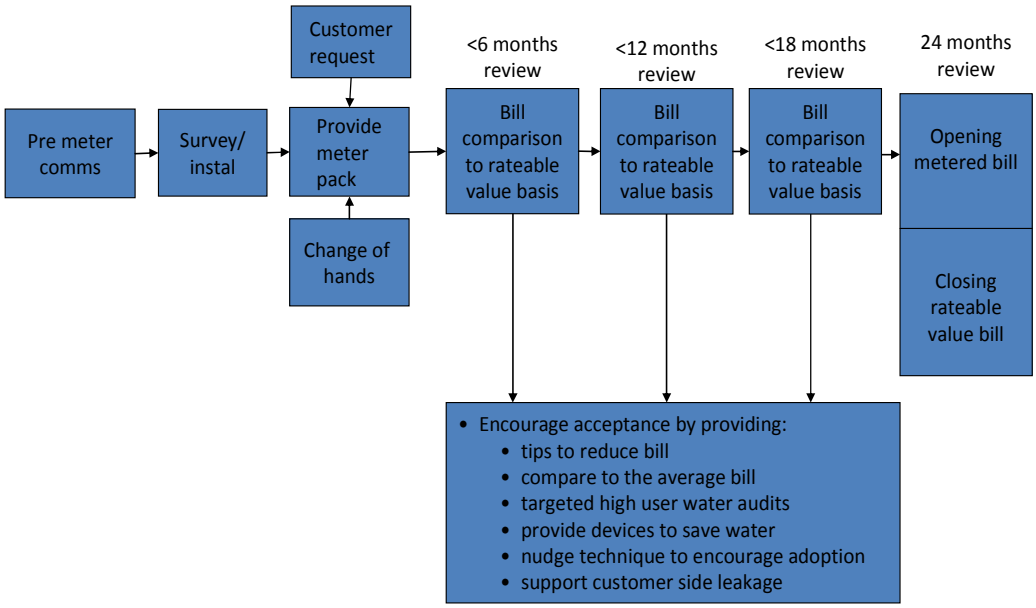
The monthly usage figures and 6-monthly bills will enable customers to fully understand the impact of their usage before they elect for a metered tariff. Ultimately all remaining customers will be migrated by the end of their 2 year acceptance period.

Customers who have a higher potential metered bill will receive additional support such as free water saving devices and the offer of a water audit. Affinity Water will work with a range of partners, such as the Energy Savings Trust and other energy providers to support customers on the broader impact on the all utility costs.

The most effective way to commence support for the customer to save water will be on the ground, with face to face individual discussions. This will be delivered by a service team that attend meter installation to talk to individual customers about; how they can save water; their meter concerns; and how the meter transition will work. This will also be described in the knowledge management section of the website, and combined with chat facilities on the web site and advisor support on the phone providing an integrated and complementary approach to supporting the customer.

The policy on repairing leaking supply pipes is currently being refined and will be discussed at the meeting on 8th October.

4.3 Working with us as we consider our proposals for social tariff and transitional metering arrangements



The diagram above highlights the detail for the transitional metering arrangements which we will also be happy to discuss at the meeting on 8th October in conjunction with the social tariff referenced in 4.13.

4.4 Is our preferred plan sufficiently resilient for a demand management approach to work in the light of five out of six zones being in deficit?

Yes. Our plan has adhered to the WRMP Guidelines in its preparation and we have taken account of uncertainty in the effects of demand management in our economic appraisal of options for our preferred plan. We will also carefully monitor the benefits of demand management as our plan is implemented to ensure continued resilience.

4.5 What qualifies a severe drought? Would like to see a clear link between the research findings and the chosen option in the preferred plan.

A severe drought is one extending to three dry winters or more. We note your point that it would have been helpful to see the research findings substantiate the preferred plan which it did. We polled 2000 customers - representative of our demographic profile via our online panel which is externally managed and run by the nationally accredited company, ResearchNow. Of these, a statistically significant number, 509, responded to a survey on resilience during August 2013. Respondents were presented with information statements explaining the issues and the proposed plan. To the question *"Should we go ahead with the investment to improve resilience to severe drought"*, 64% said yes we should go ahead, if it resulted in less frequent restrictions at a cost of around £2 after 5 years. In fact 9% of the total agreed that they were prepared to pay for it at any price if it meant they have enough water all the time.

4.6 69% of your customers are not prepared to see increase in bills to address leakage. Next stages of research on willingness to pay are needed before commitment to what will be a significant expenditure.

The majority of leakage reductions included in our revised WRMP is cost-effective compared to other options as these are needed to allow sustainability reduction to take place. Leakage reductions that are greater than the economic level will be included in our Business Plan as incentive proposals. In our view further research on WTP is not necessary.

4.7 Leakage targets must be in line with customers' willingness to pay. Affinity Water must provide clear and easily comprehensible information on this to customers and demonstrate customers support the preferred approach.

We agree. The topic of our July online panel consultation was leakage. As with resilience, we set out a series of statements explaining how we develop leakage targets, our leakage strategy and the key issues we face. A set of questions against each statement followed. We are confident that the way we have explained our plans to our customers is clear and comprehensive. This is verified by 75% of respondents agreeing explicitly that yes, our explanatory statements in the survey improved their understanding and/or changed their thinking of leakage management and that they agree with the Affinity Water approach.

4.8 Not clear what is driving this investment, explain.

While there is little discretion in sustainability reductions, nonetheless our expectation is that we must garner customer responses and obtain customer agreement to plans that will impact them regardless of their statutory nature.

4.9 We have yet to see detailed analysis of results of the AWSE metering programme. Challenge to figures quoted for consumption reduction. One year's data from SE not transferable to Central's circumstances.

Our technical report on the effect of metering on consumption included evaluation as well as analysis of results by Tynemarch from the AWSE metering programme. We have considered a range of information in reaching our conclusion on the consumption reduction for metering in our Central Region including; evidence from the National Metering Trials; UKWIR studies; the difference in pcc from our water balance calculations; and the AWSE analysis. Output from the more recent AWSE AMR trial has not yet been used as the time series is not long enough.

4.10 Reference CCW Accent research in Southern Water region. Consider your communications strategy well ahead of the programme.

We have read with interest the CCW-sponsored research into Southern Water's universal metering programme. We intend to utilise that knowledge to inform our own research into the customer experience to understand any factors that are unique to our region and to plan appropriately for transition. Our communications strategy will be an intrinsic part of the testing we will undertake during the research phase.

4.11 What methods will be used to encourage opt in in East? Want to ensure that assessed charge is set appropriately given it covers three regions. Assume a single person discount will be available?

This is under review currently.

4.12 Issue of rebalancing of tariffs. Want to see results of this modelling and analysis of those issues. Concern over family households seeing steep rises in bills leading to rise in levels of water poverty.

We have no plans to rebalance tariffs within the AMP6 period due to the potential detrimental effects for some of our vulnerable customers.

4.13 Expect to see mechanisms to help low income households (not just families)

Customers who have a higher potential metered bill will receive additional support such as free water saving devices and the offer of a water audit. Affinity Water will work with a range of partners such as the Energy Savings Trust and other energy providers to support customers on the broader impact on the all utility costs. We are reviewing our partnership with other utilities in a review of our charitable trust to understand how we can provide a more holistic approach to vulnerable customer financial issues.

Affinity water has two alternative tariffs that customers may be eligible for, the WaterSure tariff and new Social tariff. The two year transition not only supports the customer but enables us to identify and target vulnerable customers for support. Typical customers will be low unmeasured bills with potential high metered bills.

5.1 Clarity and transparency

We will take this on board and publish a customer friendly summary with the final version. For reference, there is no recorded note that a summary plan was agreed at CCG in May.

6.4 Greater clarity on how recommendations from WRSE modelling work will be incorporated and to what extent these differ from preferred plan.

Following publication of our draft WRMP and the WRSE Technical Report, we explored inconsistencies with Thames Water and agreed changes which have been included in a set of validation runs of the WRSE which are due for publication on 7th October. We are confident that the preferred plan in our WRMP will be consistent with the outcome from WRSE.

Appendix E: CCG challenge responses

Our CCG raised a number of challenges that are pertinent to our revised WRMP. Our responses to those challenges is copied here.

Challenge Record

Number/reference: 0002	**Date: 03 December 2012**
Raised by: CCG	**Subject area: Leakage**
Due by date: not set	

The challenge: Leakage
Challenge: Ofwat has asked water and sewage companies to make a step-change in their approach to leakage. Ofwat is motivated, in part, by consumers' belief that the current rate of leakage is unacceptable and acts as a barrier to customers adopting more water efficient behaviours. (It needs to be noted that this has not yet been evidenced in Affinity Water's focus groups on WRMP) Further, anecdotal evidence suggests that consumers cannot accept the economic cost of leakage rationale. Ofwat is also clearly looking to individual companies to devise strategies, appropriate for their specific context that can be demonstrated to have their customers' support. Taking the opportunity for a complete rethink of the issue of leakage, how should Affinity Water address these expectations? **Expectations:** Affinity Water will propose a strategy for addressing leakage that is acceptable to its customers and to the statutory bodies. Customer research findings and consultation responses should be used to confirm customers' views on leakage and the priority given to this issue. AFW should address this in the development of the demand management strategy contained in its WRMP (which will be released for public consultation next spring). **Specific points to be addressed:** How will Affinity Water : • engage with customers on the topic of leakage • articulate the current basis for setting the level of investment in this area and potential costs to customers if a lower level of leakage was proposed (given that many customers may assume that

the costs of reducing leakage should be financed by the value of the water saved, or funded by the company by reprioritising other potential investments)

- proceed if the outcome to willingness to pay research suggests further funding will not be forthcoming what alternatives might the company consider (alternative funding or possibly alternative leakage strategies)?
- raise customer awareness to the leakage issues including the current target and company performance against this; current leakage policy and activity more generally?
- help customers with supply pipe leakage?

RESPONSE from Affinity Water

1. Introduction and context

We see the CCG having a key role in judging if we are promoting an appropriate approach for leakage reduction.

Leakage reduction is an integral component of our strategy for meeting the outcome of making sure our customers have enough water. As such, we are not proposing a separate strategy for leakage reduction. While we recognise that customers may see current levels of leakage as unacceptable, we believe that our strategy must be to take a balanced approach because relying solely on high levels of leakage reduction presents significant risks to customers if these cannot be achieved in a sustainable and cost beneficial manner.

We have set out for consultation in our draft Water Resources Management Plan (draft WRMP) how we plan to meet the outcome of making sure our customers have enough water over the next 25 years. Our Preferred Plan includes a balanced range of options to:

- **Reduce leakage** across most of our water resource zones;
- Assist customers to **reduce domestic consumption** by minimising waste and using water wisely;
- Continue to **extend household metering** as a fair means of charging and to reduce demand;
- Make **best use of our existing water supplies**;
- Continue to **work with our neighbouring water companies** in providing cross-border water transfers.

Our Preferred Plan will result in substantial changes to our operations and carries additional risk which means it is essential we work in partnership with our customers to reduce water consumption through leakage reduction, compulsory metering of most households by 2020 and water efficiency initiatives. In the five years from 2015 to 2020 we expect our Preferred Plan will achieve:

- A saving of **20Ml/d** in leakage at a cost of £11.3 million.
- Over **36Ml/d** of demand reductions from compulsory metering by automated meter reading in five of our six water resource zones in the Central region; the total cost for metering in all of our regions is £95 million.
- Around **4Ml/d** from water efficiency, in addition to the benefits of the combined domestic metering and water efficiency programme; this will cost £5.1 million.
- An extra **1Ml/d** from our existing licences, by increasing the amount we abstract without causing damage to the environment. These options also give us an extra 8Ml/d during peak conditions at a cost of £2.2 million.
- An additional **21Ml/d** of water that we will buy from our neighbouring water companies to make sure we have enough to meet the needs of our customers, rising to 31Ml/d during peak conditions. This will cost £12.9 million.

2. Engagement with Customers and Stakeholders

We recognise that customers see current rates of leakage as unacceptable and this may act as a barrier to customers using less water. We have therefore ensured in all our communications with customers we

make a clear commitment to reducing leakage as the first plank in our strategy. We understand that we need to communicate effectively how we plan to balance leakage reduction with other measures so we can:

- ensure our customers continue to have enough water
- provide value for money for customers and
- prevent the inefficient use of resources and so reduce the impact of abstraction on our local environment.

We are seeking customer views on leakage reduction through a range of consultation processes including:

- publication of our demand management strategy in our draft WRMP on our website and advertising through the media (consultation period between 17 May and 12 August 2013)
- writing to and meeting key stakeholders
- focus groups
- deliberative forums including environment groups
- on-line panels
- willingness to pay survey
- service measure cost benefit survey
- our draft Business Plan consultation (July 2013)

We will take account of stakeholder views on our approach to leakage reduction in our Statement of Response to the Secretary of State on our draft WRMP stating how our Final WRMP has been informed by those responses.

Our objective is to demonstrate customer support for our strategy and priorities, CCG endorsement and regulator approval of our plans. Feedback from each of these stakeholders during the draft WRMP and Business Plan consultation process is therefore a key element in refining our strategy.

In the following sections, we set out the factors influencing our approach to leakage reduction, how we are selecting future targets for leakage and how we will communicate our plans and take into account their views.

3. Impact of sustainability reductions, climate change & population growth

Our draft WRMP, which supports one of the outcomes for our Business Plan of making sure our customers have enough water, is strongly influenced by the need to support the policy objectives of DEFRA and the Environment Agency for restoring sustainable abstraction.

Following extensive dialogue with the Environment Agency, we have agreed a reduction of 77 Ml/d (6% of our resource base) to be included in our baseline supply demand balance. This requirement:

- generates a substantial water resources deficit; and

- strengthens the economic case for demand side measures including leakage reduction and compulsory metering coupled with water efficiency.

4. How we have modelled the options for leakage reduction

The leakage options considered during our econometric modelling work were constrained:

- to those within a reasonable range of confidence of the current cost of leakage reductions and

- to ensure a balanced combination of demand management and supply side options in our Preferred Plan.

The costs of reducing and maintaining leakage at far lower levels than we are now, become more and

more uncertain as the target level of leakage reduces. When modelled (compared) against metering and water efficiency, leakage is always selected and we know this to be unrealistic and a weakness in our modelling approach. We therefore think the above is the correct balanced and sustainable approach. This approach also meets Government aspirations and our objective of working with our customers to reduce consumption and so reduce the impact of abstraction on our local environment. Although we use UK Water Industry Research (UKWIR) best practise approaches when forecasting leakage costs we are committed to improving. our understanding of true costs when we operate at lower levels of leakage

As our Preferred Plan includes leakage reductions that are constrained, we will be closely monitoring the actual cost of reducing leakage during 2015 and 2020 and we have put in place new systems to do this. This will ensure any decision to reduce leakage beyond 20 Ml/d is based on a clear comparison of cost compared to other supply or demand side options.

Our plan will therefore remain flexible in accordance with DEFRA requirements. We will review our investment programme on a progressive basis, so that if further leakage reduction beyond 2020 is the least cost option to balance supply and demand, compared with other investments, we will implement these as a priority at that time.

5. How we are setting our targets for leakage

We have taken account of sustainability reductions, climate change and population growth in our work with other companies under the Water Resources in the South East (WRSE) project and in our own econometric modelling. Both WRSE and our own assessments have selected leakage reductions options based on costs derived from Economic Level of Leakage (ELL) and Sustainable Economic Level of Leakage (SELL) assessments.

SELL is the level of leakage at which our costs and other external costs, are the lowest. The SELL calculation includes all costs and benefits associated with different levels of leakage, **including environmental and social ones**. Operating at SELL means the total cost to the company, customer and society of supplying water is minimised and that we are operating efficiently.

We are planning to set targets for leakage levels over the next 15 years which are lower than SELL.

The CCG challenge suggests customers may not accept an ELL or SELL but also that customers may assume the cost of reducing leakage should be financed by the value of water saved - which is in itself an economic position. In normal operational terms the cost of reducing leakage together with the cost of producing water is minimised.

In order to remain below an upper limit for leakage in all conditions, we will need to control leakage to much lower levels during benign weather periods. Equally, we may need to reduce leakage in drought conditions to meet the expectations of our customers. Under both of these transient conditions, leakage operations may be sub-economic. Having a flexible approach to leakage may also conflict with DEFRA's aspiration that leakage should not rise; however, we consider this will be necessary at times to be able to adapt to seasonal and annual weather conditions, whilst seeking to be as efficient as we can in our operations.

We will ensure a continually reducing leakage level through the careful monitoring and response to leakage outbreaks and the natural rate of rise of leakage encountered together with controlled implementation of leakage reduction measures from one leakage level to another.

The CCG also suggested customers would expect further leakage reduction to be achieved or funded by the company by reprioritising other potential investments. As indicated above this could be done but in the short term (2015 to 2020) this would impact on the need for metering and water efficiency measures and this would not meet broader government objectives of reduced consumption. In the longer term (post 2020), we recognise there is a place for prioritising further leakage reduction and we will review our plans and commit to that when we are able to be confident that this is the least cost approach compared to other supply side measures.

6. Our consultation with customers about leakage reduction

The starting point for our consultation with customers about leakage reduction between 2015 and 2020 will be to set the wider context of the challenges we face over the next 25 years from sustainability reductions, climate change and population growth. We are explaining how our approach to leakage fits within a balanced set of measures which will allow us to:

- ensure customers continue to have enough water
- provide a value for money service and
- support the policy objectives of DEFRA and the Environment Agency for lower per capita consumption and restoring sustainable abstraction

We are explaining to customers and stakeholders that for the five year period 2010 to 2015, we have planned our investment for leakage control to ensure we achieve the targets set by our economic regulator. We will explain how we have performed against those targets.

We are indicating through our draft WRMP and Business Plan consultation that our Preferred Plan includes a reduction in leakage of 20 Ml/d between 2015 and 2020. This will mean that we are proposing to spend more on repairing pipes to reduce leakage beyond the level which is the most cost effective to achieve and maintain.

We will set out for customers the indicative impact on bills for three different leakage reduction scenarios (including our Preferred Plan) so that customers can indicate their preferences.

As indicated above, we have a range of activities in hand and are consulting with customers over their views on leakage and other investments in our Preferred Plan for the draft WRMP.

We also recognise there is an “emotional level of leakage” for customers, in particular in drought. We are therefore seeking customers’ and stakeholders’ views on how flexible we should be in setting our leakage target and if this should take account of weather conditions such that lower levels of leakage would be reached should drought restrictions be implemented in future or higher leakage would be allowed when there is a surfeit of local resources. We will also explore the appetite for alternative leakage performance measures such as ‘repair 95% of all visible leaks within 24 hours’ as customers may be more satisfied with an operational measure of leakage performance.

In particular we are carrying out a quantitative survey on leakage in July using our on-line customer panel. We are consulting on a range of leakage issues including:

- the specific proposals in our Preferred Plan
- options for higher and lower leakage targets linked to levels of service options and
- the effect on bills from the alternative investment plans

This issue is explored in our sensitivity tests in Figures 28 and 29 (page 100) of our draft WRMP.

7. Willingness to pay

The CCG have asked us to consider alternative plans and funding if customers indicate they are not willing to pay for leakage reductions. If there is no customer support for leakage reductions then we would only pursue leakage reductions where this is least cost. If some stakeholders such as regulators or the CCG consider further leakage reductions are warranted in the absence of wider customer support then we would seek to verify and agree the wider cost-benefit case for these reductions in order to justify such a strategy to our wider customer base.

In terms of funding, at this stage we do not envisage any alternative sources if costs are not included in the charges customers pay. We recognise there is a perception with customers that ‘shareholders should pay for leakage’. However, whilst it may be possible to secure shareholder investment for leakage reductions this investment will be repaid at some future point and thus in overall terms this is not ‘free money’. We seek CCG support and challenge as to the best way of explaining this issue to our

customers to minimise any misconceptions over funding and the charges they pay.

8. Helping customers with supply pipe leakage

We have also recognised the need to support customers over supply pipe leakage. In particular we are considering what support we should offer to customers when installing meters. Our experience in our Southeast Region is that customers value support for supply pipe repairs at the time of meter installation. We expect to confirm our proposals in our Business Plan submission to Ofwat and our Final WRMP and are mindful of the recent consultation by DEFRA on possible legislative changes providing for the adoption of supply pipes by water companies.

9. Provision of Information

We agree it is important in future to make our performance on leakage more visible to customers. We are exploring how to do this in a number of ways - for example through our Service Delivery Map project which is developing new tools to monitor operational and asset performance at both company and zonal (community) level. This could be reported monthly on our website in future. We are also proposing to include leakage as one of our core measures of success of meeting the outcome of making sure our customers have enough water.

In light of the challenge by the CCG we will publish additional information specifically on our approach to leakage reduction and we will also publish operational information on our current target and leakage performance and activity.

We will update the CCG further on completion of our July online panel survey.

Mike Pocock, Physical Assets Manager

Date: 12 July 2013

Passed to / date: Robin Dahlberg 12 July	**Clarifications:**
Accepted by / date:	

Response

All responses will be clearly identifiable and traceable and will append the following table.

Version No:	1 draft	2 Final	3 Final post CCG meeting 24 July
Date:	19 June	12 July 2013	1 August 2013
Submitted to:	PR14 Board	CCG	CCG
Prepared by:	Mike Pocock	Mike Pocock	Patrick Campbell
Approved by:	Stephen Martin	PR14 Board	PR 14 Board

Challenge Record

Number/reference:	Date: 5 August update 21 August
Raised by: CCG	Subject area: Metering
Due by date: 11 September 2013	

The challenge: Metering

Challenge:

Affinity Water has a working hypothesis that customers support universal metering. This view is an outcome from the qualitative work in focus groups, environmental forums and deliberative workshops. It is not yet substantiated by robust quantitative research.

Expectations:

Affinity Water needs to demonstrate with robust quantitative research the extent to which customers support universal metering. The research should identify any implied qualifications, for example, whether customers believe metering is acceptable only if it is installed for free and/or will no bill impact. The research should also identify which customers groups do not support metering. Affinity Water should explain how it proposes to deal with those customers.

Affinity Water should also explain how it is preparing well in advance for universal metering and how it will help those customers with affordability issues. Affinity Water should also explain why the last water zone (2 – Colne) will be metered in the next AMP period ie after 2020.

The company demonstrate that it has taken account of increasing bills for customers / sub sets of customers that universal metering may bring.

What are the implications for the water demand-supply balance if universal metering is not introduced in 2015-20?

Specific points to be addressed:

There is some evidence from the qualitative engagement that customers support metering only if they do not have to pay for it. Is this correct? What are the implications for Affinity water?

Further, in the qualitative engagement, those unmetered customers who feel they will have to pay more appear not to support the introduction of metering. Is this correct? How will Affinity Water work with these customers to address their concerns?

Do customers in the East where metering is at 73% support and the demand-supply balance is healthy support universal metering.

RESPONSE from Affinity Water (for submission to our CCG on 18th November)

1. Introduction and context

We understand that the context for this CCG challenge relates to our view that customers support universal metering. We have come to this view after considering qualitative work we carried out with focus

groups, environmental forums and deliberative workshops. We are clear about the importance of the CCG's role in challenging us to show how this view has been substantiated by robust quantitative research.

It is important to clarify at the outset that we see metering as a key component within a range of measures to tackle underlying customer demand. The range of measures we intend to adopt are set out in our draft Water Resources Management Plan (draft WRMP) and include activities to reduce leakage and develop our capacity to improve our ability to move water both into and within our areas of supply. Most importantly we are proposing a large scale programme of water efficiency activities alongside the roll out of metering that will be delivered to customers as a coherent single programme to target demand reduction.

In this challenge response we will show clearly how we have consulted with customers to address expectations from the CCG, as set out below:

a) demonstrate with robust quantitative research the extent to which customers support universal metering;
b) identify implied qualifications to universal metering support, for example whether customers only find metering acceptable if it is installed for free and/or will not impact on the level of customers bills;
c) identify customer groups who do not support metering and how we will deal with this;
d) how we are preparing for universal metering prior to the start of AMP6 (2015-2020);
e) how we intend to help those customers who may have affordability issues;
f) how we decided our delivery programme and the reason why two Central water resource zones will be metered in AMP7 (2020 – 2025);
g) how we have taken account of increasing bills for some customers, that may be brought about by universal metering; and
h) explain the implications for our water supply / demand balance if universal metering is not introduced in AMP6 (2015-2020)

2. Background

One of our key customer expectations is 'Making sure our customers have enough water, while leaving more water in the environment'. In order achieve this outcome we will improve the efficiency with which we use our resources and support our customers to reduce their consumption to leave more water in the local environment. This will enable us to provide a sustainable water service and ensure that our customers have enough water both now and in the future to overcome the challenges we face.

The challenges we face

- We supply water to 3.5 million people within the southeast of England, an area of supply which is classified by the Environment Agency as subject to serious water stress
- Our key challenge is ensuring that our customers have enough water, now and in the future, whilst leaving more water in the environment to protect our chalk streams and local habitats
- The population of the communities we serve is forecast to grow by 15 per cent over the next 25 years
- Less predictable weather patterns, associated with climate change, have the potential to reduce the water resources available to us and increase the risk of droughts
- Our customers have one of the highest rates of water use in England and Wales
- Preserving our water sources for future generations

We need to use our water resources more efficiently and persuade our customers to recognise water as a

precious and finite resource. This will allow us to secure our supply for future generations of customers and leave more water in the environment.

A key component in persuading customers to use water more efficiently will be to encourage our customers to pay for the water they use through metered charges. We have found that this reduces the level of individual consumption by at least 10 per cent, when we implemented universal metering within our Dour community (Southeast Region). In our WRMP we are proposing a saving of 13.6 per cent.

Universal metering programme summary

Our metering programme is focussed on delivery over seven years (2015-2022). This would mean overall metering penetration in our Central Region of around 70 per cent by 2020 and 90 per cent by 2022. During 2015 to 2020, our universal metering will be targeted at the four Central Region communities where we have greatest need from an imbalance between customer demand and water resource supply. To raise the level of metering to 90 per cent within these four communities we will install around 280,000 meters during the five years at a cost of £52.2 million to achieve a reduction in demand of 18.4Ml/d by 2020

3. Forming our initial views

Our initial view that customers support universal metering was based on qualitative work we carried out with focus groups, environmental forums and deliberative workshops but also quantitative work from establishing our online panel. The research activities we carried out formed Phase 1 'Listening and Learning' of our engagement programme up to March 2013.

Phase 1 activities included

- Establishing customer and stakeholder baseline view
  - Corporate stakeholder mapping
  - Base customer focus groups
- Formal consultation
  - draft Strategic Direction Statement
  - pre-consultation on our draft Water Resources Management Plan
- On-line panel – establishment of panel
- On-going and regular customer engagement

The phase 1 engagement focussed on identifying issues, attitudes and opinions from our customers, specifically around their expectations of their water service provider. Research was conducted using independently run-workshops, face-to-face focus groups and online panels, members of which reflect the socio-economic groups in the communities we serve. A full report of the Phase 1 engagement activity has been shared with the CCG members[3].

Our customers told us that they judge their water service on the cleanliness of water, the consistency of supply, the price, the level of customer service and how we maintain the water infrastructure. Customers were broadly in agreement with the customer expectations we consulted upon.

In terms of water efficiency and metering, the focus group feedback showed that customers recognised their individual responsibility to save water and that their was support for metering and improving domestic water efficiency as well as tackling leakage. Much stronger support for metering, variable pricing and tariffs, education about water use and further leakage reduction came from the environmental forum.

We used on our-line panel 3 times to test views on aspects of water resource planning – including metering. Customers agreed that

[3] Report on Engagement Activity – Phase one 'Listening and Learning', Activities undertaken during 2012, Affinity Water, 08 May 2013.

- That having a meter installed would affect the amount of water they use (67%); (reference Panel Survey Findings PSF page 7)

- They consider meters as the fairest way to pay for water (75%); Reference PSF page 22

- A charging system that rewards customers according to their consumption (the concept of a volumetric stepped tariff) is supported (67%); Reference PSF page 27 and

- While opinion was divided on the likelihood of a meter saving them money, nonetheless 77% believe a metering programme should be universal rather than limited to areas of severe water scarcity only. Reference PSF page 26

4. CCG expectations

To address the specific expectations of the CCG we have grouped the issues under three headings; Customer support, Affordability and bills and Delivery as set out below.

Customer support

a) demonstrate with robust quantitative research the extent to which customers support universal metering

On completion of our Phase 1 engagement activities we identified a range of issues to be taken forward into Phase 2 of our engagement, from June to September 2013. The focus of our research was designed to 'test and value' the issues we had identified. In terms of metering and water efficiency we carried out activities to get robust quantitative evidence about customer views.

Our engagement took a number of forms including statutory and non-statutory consultations, quantitative research and qualitative research.

Phase 2 activities included

- Ongoing and enhanced communication
- Formal consultation
  - Draft Water Resources Management Plan Consultation
  - Draft Business Plan Consultation
- Deliberative forums
- Quantitative research
  - Stated preference research (known as willingness to pay)
  - Acceptability testing
  - Online panels

Research was conducted using independently run-workshops and customer surveys and choice experiments, face-to-face focus groups and online panels, members of which reflect the socio-economic groups in the communities we serve. A full report of the Phase 2 engagement activity has been shared with the CCG members[4].

The feedback from our quantitative research, carried out gave robust quantitative evidence about customer views, showed that customers prioritised demand management options over supply side options and favoured fixing more leaks and encouraging more customer water efficiency and metering[5]. Our acceptability testing, based upon the Proposed Plan we consulted upon in July 2013, showed customers had very strong support for a plan that increases bill by around £3.70 or less. This Proposed Plan included the proposal to reduce demand for water by installing 80,000 meters a year on a universal basis,

[4] Report on Engagement Activity – Phase 2 'Testing and Valuing', Activities undertaken March – September 2013, Affinity Water, October 2013.
[5] Stated Preference Study: Water Resources WTP Study.

community by community, so that customers only pay for the water they use. Our second round of acceptability testing gave us 77% support for increased metering, compared to 65% during the first round of testing

b) *identify implied qualifications to universal metering support, for example whether customers only find metering acceptable if it is installed for free and/or will not impact on the level of customers bills;*

Our research has not focussed on implied qualifications to universal metering support. We know that proportion of unmeasured customers will benefit from moving to a measured charge and are likely to make the transition when they understand the potential for lower bills and that they will have a meter installed at no charge. We have instead focused on understanding those customers who do not support metering and this is considered further below.

c) *identify customer groups who do not support metering and how we will deal with this;*

Our research has identified a small proportion of customers who do not support metering. This group is largely made up of customers who are presently not on a measured charge. In order to address this we have carried out specific targeted research in Phase 3 of our engagement programme. Phase 3 is focussed on revisiting and assuring the engagement work and findings from the earlier phases. We have also focussed on carrying out specific targeted research where we felt we needed further evidence of customer views.

We carried out 2 independently hosted deliberative forums for customers in Harlow and Rickmansworth in October 2013. The Harlow event was attended by 36 participants and the Rickmansworth one by 35. Participants were selected to broadly reflect the population of the locations the events were held in. The sampling criteria used to inform the recruitment was: age; gender; ethnicity; income; and disability. Also all were Affinity water customers and responsible for paying the bill. The sample was weighted by a ratio of approx. 4:1 towards those who did not have a meter. Those who did have a meter were asked to consider that they didn't have a meter for the purposes of the discussion.

The purpose of these events was to discuss our community metering plans, looking at the 3 stages of the customer journey: pre-installation of a meter, installation and post-installation. Most participants were supportive of the principle of metering. They felt it was fair to pay for the water you use. See report Community Metering Consultation, deliberative forums, October 2013.

The key findings were:

- Customers became more supportive of metering, once they had the opportunity to discuss what was involved
- More customers would be prepared to have a meter fitted as a result of finding out more about metering
- Bill impact is the key issue to address for low and high users of water.
- There is an issue of trust about the metering programme some participants wanted reassurance that community metering was about reducing water usage
- Some participants found it difficult to talk about phases as they felt there were so many outstanding questions. They had a desire for much more information about the whole process

The research indicates three main areas of concern for customers; (i) where information will be needed to be provided for them around why we proposing metering, (ii) how will the metering journey look and (iii) how will it affect them.

The engagement work has reinforced the importance of the work we need to undertake with customers to ensure we have a clear communication programme around the metering journey and the customer

experience in advance of the installation programme. Our business plan will set out our plans to achieve this.

Affordability and bills

d) how we intend to help those customers who may have affordability issues;

Affordability is an issue for many households, including those that may already be on a metered charge. We are responding to this challenge by developing our social tariff proposals and intend to introduce this for 2014/15.

During the two-year post installation transition period (see below for more detail) we will target and support those customers most vulnerable to the change. CCW in their report 'The Customer Impact of Universal Metering Programmes' concluded that those customers who are families in low value properties are most likely to face bill increases. As well as receiving support for reducing consumption and spreading payments over affordable periods for the customer, we will have two alternative tariffs that customers may be eligible to receive.

WaterSure Vulnerable Tariff

WaterSure supports those customers who receive some form of welfare benefit, have 3 or more children on child benefit or may have a medical condition that may require water to be frequently used. The scheme has been in operation since 2000 and will continue and customers will be encouraged to apply throughout the metering programme. The benefits of the tariff are that water charges are capped at the average metered charge to ensure that those who need more water are not adversely impacted. In some cases the social tariff eligible may be of more value to a customer.

Social Tariff

We have gained customer support for a social tariff. Subject to Ofwat's approval (and potentially on a regional trial basis), we are planning to introduce for 2014/15 a tariff to support those customers who have a household income of less than £15,860 and/or have welfare support as a result. Eligible customers will receive a fixed flat rate bill currently £95.80 and reduction of approximately 40% of an average water bill. In addition they will be metered to ensure that excessive water is not used and we will also provide a water audit. The two-year transition period will enable us to identify customers who may eligible and encourage them to apply.

The alternative option available with the social tariff was to adopt a more specific and individual approach which would support fewer customers with a larger discount upon the bill. The proposal of the social tariff was finalised after discussion with CCW. Our proposal is to support a larger number of customers who are striving to pay, some who struggle but pay the existing bill and those who feel unable to pay the current bill at all. It is expected that the social tariff will support c 30,000 customers who are a mixture of current payers and non–payers. This will specifically help those customers who can currently afford the existing bill but may struggle to pay the new-metered bill if it is higher, subject to eligibility.

We are also considering the potential for a volumetric tariff that has no standing charge. This tariff would ensure that more of the customer bill reflects consumption.

e) how we have taken account of increasing bills for some customers, that may be brought about by universal metering; and

We are developing proposals to offer customers choice about when they switch to a measured tariff following meter installation. Our aim is to minimise the number of customers that are compulsorily switched to a measured charge. A transitional period will allow us to communicate and inform customers about water efficiency and the potential benefits and implications of moving onto a measured charge. We will also take into account the lessons of compulsory metering from others who are delivering it in this AMP (South East & Southern) and from our own programme in the Southeast region.

Delivery

f) how we are preparing for universal metering prior to the start of AMP6 (2015-2020);

Our preparations for universal metering are well advanced and we have focussed on defining and managing the 'The Customer Experience'. As discussed earlier, in early October we have held two deliberative forums in Rickmansworth and Harlow that have given us a clear view of customers' main concerns and how we can best address these; in particular:

- Customers do wish to be kept informed during the 'pre-installation phase' and we are planning to launch a communication plan between three to six months prior to installing a meter. We will utilise a third party to support our communication to ensure that customers have an independent view of the benefits of the programme throughout the journey. This will also assist the water efficiency work stream;
- Customers would like the ability to read the meter themselves and the utilisation of the web and/or an app to see 'real time' meter reads will assist.
- Customers liked the two-year transition period to adoption of the measured bill.

Proposed Customer Journey

We are planning a customer journey that gives customers 24 months to 'Opt' on to a measured change before being compulsorily switched to a metered bill at the end of that period. In preparing for this customer journey we have been looking to the experience others have gained from delivering similar programmes. Universal metering programmes have been in place in the south east of England for a number of years. Folkestone and Dover completed compulsory metering in 2009 and more recently Southern Water and South East Water have undertaken metering programmes in AMP5.

The impacts upon the customer have been evidenced within Southern Water and South East Water through the service incentive mechanism, SIM. We have held meetings with both companies to understand what the customer concerns were, what went well and the negative impacts of their metering programme that drove complaints, a perceived reduction in service (SIM) and increased customer contact.
We have also been taking into account the CCWater publication 'The Customer Impact of Universal Metering Programmes' in South East England. The findings of the report together with earlier discussions with Southern Water and South East Water have helped shape our proposals. The key areas of our programme our outlined below.

Communication

Our own experience in Folkestone and Dover has made it clear that early, consistent and regular communications can help customers understand and be supportive of metering. Southern Water and South East Water both confirmed the value of communicating to key stakeholders in the community, individuals by leaflet/letter and complementary channels such as Facebook and websites. CCW's report emphasised that many customers did not appreciate that their bill could increase.

We will make the rationale for metering clear, the timing of the metering programme, providing greater information to customers closer to the point of installation. Explaining that metering may have a positive impact on some customers' bills, however other customers will pay higher bills. This is seen as being fair, as customers will pay for what they use, but we will support customers through a transition to a new tariff to ensure that customers have every opportunity to reduce their potential bill and budget for any increase.

We propose to adopt a two year transition from installation of a meter to address the specific concerns of customers over billing and how customers can influence the amount of water they use and manage their bill.

Transitional Period - Water Efficiency

We reviewed the transitional approach of both Southern Water and South East Water. We considered a

transitional tariff but concluded an approach that encouraged customers to accept a meter would have a positive customer impact and build trust by engaging them in being involved in the solution of using less water.

Post meter installation- transition to a measured bill.

We have proposed a two-year transition from installation through to new-metered bill. Following installation of the meter the customer remains on their existing tariff unless they opt to switch to a measured tariff immediately or at any point over the two years. The meter will be read monthly for the first six months and the information made available to the customer together with advice regarding how to save water. At the end of the first 6 months a comparison letter will be sent to customers that have not switched showing the value of their existing bill compared to that of a metered bill.

The comparison letter will enable customers to understand whether they will gain by having a metered bill or that they will lose should they not alter their water usage sufficiently. At this point and at any point after installation, the customer can elect to be billed based upon the consumption read and the metered tariff, cancelling the existing bill and replacing it with the new-metered bill.

Customers who do not elect to have a metered bill will continue to be billed on the existing tariff and the process repeats every 6 months to show customers the progress they have made with their consumption and the comparison to their existing tariff.

We will continue to support those whose consumption results in a higher measured bill than their existing bill and intend to provide information to customers regarding further support to those most vulnerable. This is likely to be families in properties with lower rateable value unmeasured bills. Whilst all customers will receive advice on how to use water wisely those customers whose potential metered bill is higher than their existing bill will receive additional support to reduce consumption such as free water saving devices and the offer of a water audit.

The two-year transition programme will support the customer to take control of their water consumption and manage their future bill preventing any bill shock and enabling them to become accustomed to the change. In addition it will reduce concerns over supply pipe leakage, metering supply errors etc. as these can be reconciled prior to change of tariff.

By placing all customers within the transitional period it allows customers to accept the meter and elect for the change, providing choice but also for those whose bill will increase allowing time to influence the bill increase by lowering consumption and budget for any future increase. It provides a regular touch point for us to target customers who use water more effectively and genuinely work with them to manage consumption and bill value.

Any customers who move into a property with a meter that has yet to be moved to the new tariff will be automatically billed on a metered tariff. At the end of the two-year period any customers who have yet to elect for a meter will be automatically transferred to the new tariff.

g) *how we decided our delivery programme and the reason why two central water resource zones will be metered in AMP7 (2020 – 2025);*

We have altered the delivery programme for universal metering. To ensure bill affordability we are now proposing that the 90% target will be achieved in AMP7 with completion in 2021/22. The Service Delivery Map areas to be universally metered will be Water Supply Zone (WSZ) 1 – Stort; WSZ 2 - Misbourne; WSZ 2 – Colne and WSZ 3 – Lee.

WSZ 6 - Wey and WSZ 4 – Pinn will be completed in the next periodic review. These areas have the highest populations of customers who are likely to be impacted by the universal metering programme.

h) *explain the implications for our water demand-supply balance if universal metering is not introduced in AMP6 (2015-2020)*

Should a universal metering and water efficiency programme not be introduced, then we would be

operating with a higher level of risk making it more difficult to ensure we leave enough water in the environment and meet our customers' expectations around having enough water. This risk will also arise if we find that the expected demand reductions from metering are not realised. This may require further investments that shareholders will initially finance. Longer term, beyond AMP6, we may need to invest in more expensive supply side solutions and strategic options as set out in the draft WRMP for AMP7 and beyond. It is worth noting that because our supply areas have been designated by the Secretary of State as water stressed, we are required to consider all available options to manage demand, including metering, when preparing our WRMP. Following the statutory consultation we have carried out on our draft WRMP and wider business plan consultation, we have chosen a universal metering programme to achieve equity in service to customers while meeting our environmental obligations. We have had regard to DEFRA's Guiding principles that companies with above the national average PCC should reduce that consumption to be at least at national average PCC by the end of AMP5. We expect to be at the national average level by the end of our compulsory metering programme.

Passed to / date: AW 5 August 2013	**Clarifications:**
Accepted by / date:	

Response
All responses will be clearly identifiable and traceable and will append the following table.

Version No:			
Date:			
Submitted to:			
Prepared by:			
Approved by:			
Reference:			
Date to Chair CCG			
Accepted by CCG			