



**ESSEX & SUFFOLK
WATER**

**Essex & Suffolk Water
Draft Water Resources Management Plan 2008
Statement of Response to Consultation**

January 2009

Essex & Suffolk Water
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1.0 Background

The requirement for water companies to produce a Water Resources Management Plan is formally set out in the Water Resources Management Plan Regulations, 2007 and the Water Resources Management Plan Direction, 2007. The 2009 Periodic Review (PR09) water resources planning process is effectively regulated by the Secretary of State and the Environment Agency.

Organisations consulted before and/or during production of the draft Water Resources Management Plan (dWRMP) document included Defra, the Environment Agency, Ofwat, Thames Water and Anglian Water.

Statutory consultees of the published draft version of this document as required under the Water Resources Management Plan Regulations 2007, were:

- Ofwat
- Environment Agency
- Secretary of State (c/o Defra)
- Regional Development Agencies covered by the area of the Plan
- Any elected Regional Assembly covered by the area of the Plan
- All Local Authorities in the area of the Plan
- The Broads Authority
- Natural England
- The Historic Buildings and Monuments Commission for England
- Navigation authorities operating in the area of the Plan
- Thames Water Utilities
- Anglian Water Services
- The Consumer Council for Water

In addition ESW welcomed comments and representations from the wider community, including customers and other interest groups.

Written representations on this dWRMP were sent to the Secretary of State (c/o Defra's Water Supply & Regulation Division) and were then forwarded to ESW at the end of the consultation period.

The consultation period on ESW's dWRMP was 12 weeks long, commencing on 2 May 2008 and closing on 25 July 2008. During this period the plan was available on the Company's website.

Section 4 of the Water Resources Management Plan Regulations, 2007 indicates that ESW must produce a consultation statement (i.e. this document) detailing:

- (a) the consideration that it has given to representations
- (b) any changes that it has made to the dWRMP as a result of its consideration of those representations and its reasons for doing so; and
- (c) where no change has been made to the dWRMP as a result of its consideration of any representation, the reason for this.

The Statement of Response to Consultation (ie this document) has to be produced by ESW by 30 January 2009 and is available on our website from this date.



2.0 List of Respondents

Comments on ESW's draft WRMP were received by Defra by the end of the consultation period from the following organisations; as listed in alphabetical order:

- Broads Authority
- The Consumer Council for Water (Central & Eastern)
- East of England Regional Assembly
- English Heritage (East of England Region)
- Environment Agency
- Maldon District Council
- Natural England
- Norfolk County Council
- Ofwat
- Waterwise
- The Woodland Trust

A late response dated three days after the close of the statutory consultation period was received from Waveney District Council. ESW has decided to additionally take into account this response within this statement of consultation.

No responses were received from individuals (neither customers, nor the general public).

A summary of the responses received and ESW's consideration of each is indicated in the following sections.



3.0 Summary of Representations and Consideration Given

A summary of each representation received and ESW's consideration of each is provided as follows:

Broads Authority

The Broads Authority indicated that ESW's dWRMP was a "thorough and well laid out document for comment", and provided a number of general comments including those where it considered ESW could take further positive steps.

The Broads Authority's view was that schemes to increase the efficient use of abstracted and treated water should have a higher weighting when compared to those considering the utilisation of new supplies with similar, or even slightly lower, unit costs.

The Authority was concerned that water efficiency schemes with a long-term impact on yield should not be sat on until the deficit can be addressed later in the planning cycle, citing ESW's Suffolk Northern/Central zone as an example.

The Authority thought that ESW's consideration of reverse osmosis (RO) desalination was commendable and saw that "maintenance of riverine surface water abstractions may require some RO element in the future" commenting that the technology would guarantee abstraction volumes and reduce the pressure on freshwater flows.

On catchment management the Broads Authority saw merit in wider engagement with stakeholders.

Two specific concerns were:

- (1) The extension and raising of reservoirs such as the Trinity Broads would not be appropriate.
- (2) ESW's research into the suitability of the North Lowestoft Groundwater Scheme should take into account the effects of saline intrusion.



ESW Consideration

We thank the Broads Authority for its positive comments on the lay out of our document.

With respect to the comment made on weighting of water resource management options, we assume that the suggestion is that demand management options should carry an economic weighting factor (discount) so that they would appear more favourable when compared to other schemes. In a sense such a 'weighting' has already been applied in the calculation of AISC unit costs, since they incorporate the monetised benefits of environmental, social and carbon costs which generally have a more favourable profile for demand management options. The Agency's Water Resources Planning Guideline (WRPG) does not allow us scope to include any other consideration of weighting factors.

With respect to water efficiency schemes in the Suffolk Northern/Central zone we dispute any assertion that we would 'sit on' such options. Although it is true to say we have not considered any enhanced water efficiency options in our options assessment for this zone, it should be recognised that our baseline water efficiency (as outlined in Chapter 5) is still rigorous and in the final plan the reductions to per capita consumption will apply to all our water resource zones.

Although we understand the Authority's comments on RO desalination we believe the technology to be highly environmentally damaging and energy intensive (as reflected in our AISC unit costs for this option) and for this reason this option was not included in our final planning solution.

On catchment management, ESW is taking a lead with initiatives such as the Trinity Broads Partnership and the Lound and Fritton Lake Water Quality Partnership. Although in its infancy, ESW is developing its Branch Out initiative which aims to deliver biodiversity and water quality benefits through new and existing partnerships with other utility companies, conservation organisations, farmers, landowners, local authorities and the general public. We will also be working closely with farmers, the Agency and Natural England to investigate the source of pesticides in main river systems and to identify and agree with farmers ways of reducing them to acceptable concentrations.

On reservoir raising, we agree that it would not be appropriate for the Trinity Broads, and have never suggested otherwise.

Our studies into the suitability of the North Lowestoft Groundwater Scheme are at a very early stage but have been designed to consider the likelihood of saline incursion.

ESW Conclusion

No change – with respect to additional weighting of demand management options as there is no mechanism under current guidance.

No change – with respect to enhanced water efficiency in Suffolk Northern/Central zone as our proposed baseline demand management is rigorous

Change – we have made a passing reference to the need to avoid any potential for saline intrusion with the North Lowestoft Groundwater Scheme in the updated WRMP.

Change – The consultation draft SEA Environment Report has been updated to reflect new and existing catchment initiatives.



Consumer Council for Water (Central & Eastern)

The Consumer Council for Water (CCW) was generally supportive of ESW's approach to the development of the dWRMP and its alignment with the Company's SDS. Additionally CCW found the dWRMP "very useful" and commented that it acknowledges the uncertainties of climate change and population growth

In response to ESW's metering proposals CCW indicated that although it considers metering is the fairest way of charging, it remains concerned about the incidence and distributional impacts. CCW believes that the tax credit and benefit system should provide a financial safety net for those customers on the lowest incomes who might be disadvantaged by metering. In respect of compulsory metering and low income customers CCW indicated it would be happy to work with ESW on these issues.

On leakage CCW supports ESW's commitment to keep to the agreed targets. CCW indicated that it welcomes ESW's approach to work with commercial and domestic customers to promote water conservation and that it was particularly pleased to note the considerable resources dedicated to water efficiency projects and research.

CCW's view was that ESW has taken into account the Environment Agency's guidance on planning and future population growth

ESW Consideration

We thank CCW for their support in a number of areas. The only real concern as such raised in their comments was in relation to the impact of metering on low income customers and to this end we would equally be pleased to work with CCW on this particular subject in due course.

ESW Conclusion

No change – no specific changes required, as none suggested.

East of England Regional Assembly

The East of England Regional Assembly (EERA) produced a joint response for the six water companies operating within the East of England region and provided a summary of key information contained in ESW's particular dWRMP. EERA's response was focused on the matters perceived to be of most relevance to the growth levels set out in the adopted Regional Spatial Strategy (RSS), namely; (1) water company growth projections versus RSS growth forecasts, (2) metering targets, water usage and water saving; and (3) supply infrastructure and resource development..

In respect of growth projections EERA confirmed that the assessments relating to the timely provision of water supply infrastructure for development were largely in line with the associated policies H1 and WAT2. EERA noted however that for the final WRMP water companies needed to take account of the published RSS (May 2008) rather than the draft Plan from 2004, taking into account 'minimum still to build' targets. EERA suggested that the final WRMPs should make clear how the assessments of future development have been arrived at.



EERA is concerned about the predicted levels of per capita consumption (pcc) as they are at odds with those considered in preparation of the RSS and higher than those suggested by Defra. EERA also suggested that it would be helpful if both measured and unmeasured pcc rates were more clearly identified.

On metering and water charging EERA was concerned over the issue of water poverty, and suggested pilot schemes aimed at assisting vulnerable groups could be considered. EERA also indicated that more should be done to increase the general awareness of the carbon costs associated with the provision of water, as some customers may not have established the link.

On leakage EERA made two points that (1) research has shown that the failure of water companies to control leakage is the main reason why customers are unwilling to make water savings themselves, and (2) that there is a physical and environmental cost in terms of the energy that has been used to treat and distribute water. Hence EERA would support the continual reduction in leakage over time.

ESW Consideration

The forecasts have been prepared for us by Experian who have used the RSS overall growth rates and local data to apportion growth within our areas.

Our metered and unmeasured pcc rates are both given (separately) within the WRMP tables. Our pcc forecasts have been derived using a microcomponent methodology as required by the Environment Agency and we have one of the best models of any company. In the original draft WRMP pcc levels reflected the impact of the Code for Sustainable Homes for social housing, but the Government's aspirational target of 130 l/h/d had not been considered as it was released too late in the drafting process. Similarly Ofwat's consultation on Water Efficiency targets and the consultation on amendments to Part G of the Building Regulations had not been issued. The pcc forecasts in the draft now take full account of both of these proposals with the normal year weighted average pcc due to fall from 155.51 l/h/d in 2007/08 to 135.19 l/h/d in 2034/35.

Water poverty is not an area that is covered under the guidance for the WRMP but is considered within the company's PR09 draft Business Plan.

EERA's implication that ESW is 'failing to control leakage' is completely unfounded and incorrect. ESW prides itself on its record on leakage control which is one of, if not the best in UK. Indeed parts of our Suffolk supply area have some of the lowest levels of leakage in the world. EERA should also be aware that in 2007/08 all the water companies in England and Wales either met or bettered their leakage targets (source: Ofwat leakage report 2008) which goes against their perception.

ESW Conclusion

Changes:

We now have the revised population and property forecast and have updated our draft WRMP accordingly. The revised forecasts take account of the latest RSS property forecasts although we have reprofiled them to reflect the current economic climate.

We have made some changes to pcc in our draft WRMP for a number of reasons. Firstly the revised population and property forecasts impacts upon our microcomponent forecast. Secondly we are assuming that water efficiency targets are introduced in line with the



consultation document published by Ofwat. We have assumed that the Building Regulations Part G amendments proceed as suggested in the Consultation document produced by CLG which limits all new homes to 125 l/hd/d and we have reviewed our microcomponent forecasts to ensure that future replacement of water fittings in older homes reflects the proposed changes to Building regulations

English Heritage

English Heritage provided separate responses on both the dWRMP and the SEA, which are both addressed within this Statement of Consultation. Specific comments raised by English Heritage are presented in the following sections with our response and conclusion to each point as indicated.

English Heritage Comment (1) – dWRMP & SEA

Whilst recognising that detailed environmental data have not been considered at this stage, English Heritage emphasised the need to consider such data in due course and obtain the views of English Heritage and the local authority archaeological officers with respect to implementing individual schemes. In particular English Heritage wants to see detailed consideration of the potential impacts of Abberton Raising and the Denver Licence Variation, and to understand the methods and data used to produce the interpretation of 'not significant adverse'.

ESW Consideration

The level of detail depends on the stage and type of assessment being undertaken. For example, until the location of a water resource scheme has been identified, then it is very difficult to assess affects on the historic and wider environment. If and when it is appropriate to undertake a more detailed assessment of a water resources scheme, then we would expect to consult with a wide range of environmental and other bodies, including English Heritage and local authority archaeological officers.

In respect of the comments on the Abberton Scheme and Denver Licence Variation we are surprised by the comment made by English Heritage since we have consulted them on both the Scoping Document for the Abberton Scheme Environmental Statement (ES) and the ES itself. The ES is a highly comprehensive 4700 page document that covers in great detail the environmental effects of the whole Abberton Scheme (including the Denver licence variation) and has been on our website since January 2008.

ESW Conclusion

No change – for reasons indicated above

English Heritage Comment (2) - SEA

English Heritage advocates the use of the term 'historic environment' rather than heritage, cultural heritage, archaeology or architecture and recommend that this term should be used throughout the document.



ESW Consideration

ESW agrees with English Heritage's comment.

ESW Conclusion

Change - The draft WRMP and draft SEA Environment Report have been updated with the term 'historic environment' being used rather than heritage, cultural heritage, archaeology or architecture.

English Heritage Comment (3) - SEA

It was suggested by English Heritage that the main SEA report should recognise the potential importance of undesignated assets, and pointed to where such information could be obtained emphasising the importance of engaging with local authority archaeological officers.

ESW Consideration

In line with PPG16, ESW recognises that there are many important historic assets that are not designated, for example, because they have not been located or identified and that only known archaeological sites can be entered onto an Historic Environment Record. For these reasons, it is difficult to assess the importance of non-designated assets without investigation.

ESW Conclusion

Change - The draft SEA Environment Report has been updated with text inserted to acknowledge the importance of undesignated assets. However, any site investigations would be undertaken at the EIA stage.

English Heritage Comment (4) - SEA

English Heritage was pleased to see that most of the main categories of historic environmental asset had been identified but noted that Registered Battlefields and Registered Parks and Gardens should also be included in the Historic Environment section.

ESW Consideration

ESW agrees with English Heritage's comment.

ESW Conclusion

Change - Registered Battlefields and Registered Parks and Gardens have now been included in the Historic Environment section of the SEA Environment Report.

English Heritage Comment (5) - SEA

On Cultural Heritage (table 17), English Heritage flagged that there was an incorrect reference to detail on baseline information and that for all categories of asset the number



present in the specific area of study (not just regional figures) should be identified.

ESW Consideration

The incorrect reference to Section 5.12 (should be 4.12) has been noted. Section 4.12 was prepared during the scoping stage of the SEA prior to any assessment being undertaken.

ESW Conclusion

Change - Section 4.12 has been relocated to an appendix. Further detailed information, where available in relation to a specific option, has been included in Stage 3: Assessment of Feasible Options.

English Heritage Comment (6) - SEA

Also on Cultural Heritage, English Heritage flagged that the ‘implications of water resources planning’ text should be amended to read “to protect Scheduled Monuments, Listed Buildings, Conservation Areas, Registered Battlefields and Registered Parks & Gardens and their setting”.

ESW Consideration

ESW agrees with English Heritage’s comment.

ESW Conclusion

Change - The draft SEA Environment Report has been revised accordingly.

English Heritage Comment (7) - SEA

On Appendix 4 (Options Comparison Assessment Matrix) English Heritage suggested amending the “Cultural Heritage” SEA Topic to read “Historic Environment” and changing the SEA Objective to include Registered Battlefields and Registered Parks & Gardens.

ESW Consideration

ESW agrees with English Heritage’s comment.

ESW Conclusion

Change - The draft SEA Environment Report has been revised accordingly.



Environment Agency

The Environment Agency had a large number of comments on ESW's plan and additionally provided ESW with two technical reports to support both their general comments and to convey details of a sensitivity analysis it has undertaken on the supply demand balance for Essex.

In general the Agency's view was that ESW had "not provided adequate justification for its preferred planning solution", and that the Plan "provides an inadequate balance of demand management options". The Agency provided four main recommendations for modifications to the dWRMP including re-appraising options, improving water efficiency, increasing meter penetration, and evaluating opportunities for variable tariffs and reducing supply pipe losses.

Specific comments raised by the Environment Agency are presented in the following sections with our response and conclusion to each point as indicated. However we are disappointed in the conclusions they draw on our submitted plan by comparing it to their conclusions from their sensitivity analysis. The sensitivity analysis carried out took demand management beyond the extremes of what is attainable without any regard to the practical, financial and cost beneficial aspects of what was proposed. In addition, whilst stating that the increased uncertainty of achieving these demand savings should be recognised in increased target headroom, no attempt was made to quantify it. These demands were then compared, along with the current target headroom, to the forecast Water Available For Use. Even then a significant supply demand imbalance was still evident. It is not acceptable to compare a demand profile produced by such non-standard methods to one produced in accordance with the WRMP guidance and then draw unwarranted conclusions that form the basis of the EA's response.

As can be seen by our response to a number of the EA's specific points, we are concerned as to what extent the plan has been read, as a number of the questions raised have already been fully answered in the draft plan.

Environment Agency Comment (1)

The Agency indicated that ESW's dWRMP "does not conform to a twin track approach as it is has decided on resource development as its main approach without substantial demand management proposals".

ESW Consideration

We are surprised by the Agency's comment as in our view ESW has done more to embrace the twin track approach and promote water efficiency than any other water company in England and Wales. Indeed we have won a number of awards for our innovative demand management projects, a number of which have been presented to the company by the Agency. We can only conclude that the Agency has not read Chapter 5 which outlines in detail our baseline demand management strategy, nor Chapter 9 which outlines a huge variety of water efficiency options.

ESW Conclusion

No change – for reasons indicated above



Environment Agency Comment (2)

On deployable output (DO) the Agency indicated that further clarity on how the Great Ouse Groundwater Scheme (GOGS) has been included in the Aquator model, and the impact it has on DO should be provided.

ESW Consideration

This comment is unwarranted since page 37 of our dWRMP deals with this issue and is very clear as to how GOGS has been dealt with. The Environment Agency was also provided with a copy of the Aquator model in March 2008, which was used to define the Essex System deployable output. This clearly shows the location of GOGS within the Essex System (i.e. where the point of augmentation is) and the volumes assumed in the model for the augmentation. Additionally it has been ourselves who have repeatedly asked the Agency to confirm existing operational control rules and assumptions as well as the future of GOGS for well over a year, with no response received as yet.

ESW Conclusion

No Change: ESW would consider implementing an assessment of the effect of the GOGS boreholes on the Essex DO in the future, but can only do so if the Environment Agency is able to provide some clear guidance on how it would consider operating the GOGS boreholes in terms of control rules and/or assumptions. Given this guidance has been requested on numerous occasions without success, we do not intend to make any changes during this periodic review.

Environment Agency Comment (3)

The Agency has indicated that they would like confirmation of the technical issues behind the assessment of dead storage.

ESW Consideration

The assumptions behind dead storage are outlined clearly on page 39 of the dWRMP. Dead storage is based on the water that is unable to be used towards the bottom of a reservoir. This can be either because it is unable to be abstracted or because it is of unsuitable water quality. At Abberton Reservoir dead storage is set at 10%. This represents the minimum operational draw-off level plus an allowance for uncertainty due to siltation and water quality. At Hanningfield reservoir dead storage is deemed to be 10%. This is based on operational requirements linked to water quality and the locations on the reservoir where water can be abstracted.

ESW Conclusion

Change: The current assumption in our water resources system model (Aquator) is that there is 10% dead storage in both Abberton and Hanningfield reservoirs. ESW considers that the 10% assumption is a reasonable estimate and indeed it is highly unlikely that meaningful abstraction could be achieved if the reservoirs did drop to that level. At the Agency's request ESW has included additional graphical information in the updated WRMP in support of these assumptions.



Environment Agency Comment (4)

In its response the Agency asks for a review of the Langford Recycling Scheme's DO taking account of operational experience, engineering options and the Habitats Directive Review of Consents.

ESW Consideration

This comment is already fully answered in a supporting report to the Plan where we have provided what the Agency is asking for in respect of 'operational experience'. It is not immediately clear what the Agency means by engineering options or Habitats Directive Review of Consents. However since completion of the draft WRMP, the EA, under the Review of Consents, has concluded that a significant increase in the Minimum Residual Flow to the Blackwater Estuary is required that far exceeds the current abstraction licence MRF for the rivers Blackwater and Chelmer. The effluent flowing directly into the head of the estuary is allowed to be included as part of the new MRF. This now limits any increase to the volume of water produced by the LRP beyond that quoted in the draft WRMP. This MRF requirement of a 7 day rolling average of 23.7Ml/d is contained within the Heads of Terms agreement sent to the company by the Senior Environment Planning Officer (RSA) on 1st October 2008.

ESW Conclusion

No change to draft WRMP.

Environment Agency Comment (5)

The Agency has responded that ESW has "failed to provide evidence" that saline intrusion will affect the DO of the Alder Carr and Quay Lane sourceworks, and that it "expects ESW to show that it has considered alternative options to protect the source from the risk of saline intrusion".

ESW Consideration

We find the Agency's comments unhelpful as we specifically indicated on page 53 of the dWRMP that investigations were underway (at the time of writing the document) to determine the effects on water quality. Subsequent to the start of consultation on the dWRMP our investigations have now been completed and have confirmed that the sources are indeed at risk from being impacted irrevocably by saline intrusion as a result of the Agency's strategy to no longer maintain the local Blyth sea defences. We are currently evaluating a series of options to address this issue, and the latest position is reported within our updated WRMP.

ESW Conclusion

Change – but not specifically as a result of the Agency's comment as we indicated in our original draft WRMP that we would be updating this aspect anyway.

Environment Agency Comment (6)

The Agency recommended that ESW should investigate inconsistencies in reported bulk transfers with Anglian Water and Thames Water, and should continue to work with other



water companies for shared solutions to make best use of resources.

ESW Consideration

The plan stated that discussions were at an early, explorative stage with TWU about ESW seeking an additional bulk supply from TWU's proposed Upper Thames Water Resource into its Chigwell Row WTW. The additional supply was potentially needed in 2027. Further work to our draft plan now taking account of the Ofwat water efficiency targets, lower new homes pcc and a reduction of the target headroom percentile over the planning horizon has resulted in removing the need for an additional resource until beyond 2035. As such an additional supply from TWU no longer forms part of our draft plan.

We believe the difference in the bulk supplies from AWS results from us classing the supply as a bulk import and AWS classing this as a large non-household supply. Requests to AWS for clarification have not satisfactorily resolved the matter.

ESW Conclusion

Change - The TWU supply no longer forms part of the draft plan. Greater clarity from AWS has attempted to be obtained.

Environment Agency Comment (7)

On outage the Agency suggested that ESW should revise its figures as it felt that outage was too high when compared with similar companies. Specifically the Agency's view was that ESW needed to; consider that some included historic outage events are not likely to occur in the future due to improvements at treatment works, review its classification of algal events in the context of the outage reduction scheme, and explain why 750 days in 6 years were lost due to system failure at four Essex works.

ESW Consideration

The Agency's statement that outage is too high when compared to similar companies is incorrect for our Essex and Suffolk Northern Central resource zones.

When considering the percentage that the Essex outage value represents of DI, the value used in our original dWRMP, ranges from 3.9 to 4.1% over the planning horizon. Considering the equivalent figures for the rest of the industry, it is clear that a number of other water companies including many of our neighbours; (namely Anglian Water, Cambridge Water and Three Valleys Water) have outages that form a higher percentage of DI than ours. However, after incorporating a number of amendments (as detailed below), ESW has updated its outage allowance for all of its water resources zones, with the result that outage has now reduced in all cases. For example, when representing the revised Essex outage allowance as a percentage of DI the value now ranges between 3.68% and 3.84% of DI over the planning horizon.

The Agency's view is that consideration should be given to the assertion that some outage events will not occur as frequently in the future due to improvements at treatment works. The recommended UKWIR guidance used by ESW to quantify outage does not provide guidance on the discounting of past outage events due to improvements at works. There are two instances in the Essex Resource Zone where improvement to works occurred during the seven year data set, namely; (1) improved pesticide removal at Chigwell treatment works and, (2) refurbished primary filters at Layer treatment works. ESW agrees that outage due to pesticides is unlikely to occur at Chigwell works in the future and this has therefore been



excluded from the outage calculation in our updated dWRMP. Conversely, it is not possible to estimate to what degree outage due to algae will be reduced at Layer treatment works and to what extent factors such as climate change will affect algal load in the raw water reservoir source in the future, and hence we have not modified this aspect.

The Agency suggested that outage caused by the ongoing effects of an algal bloom upon works filters might be categorised as an algae event and not as system failure. ESW decided to interpret the methodology so that this type of outage was categorised as system failure based on the quality of the raw water source. When data showed that the concentration of algae was low enough for raw water quality to be considered satisfactory then the event was no longer categorised as an algae event. However, ESW agrees that this should be re-categorised as part of the same algal event.

The Agency's statement that a total outage duration '*of 750 days in 6 years due to system failure*' occurred in the Essex Resource Zone, is incorrect as our outage assessment was based on a total of 7 years of data, 2000-2006 inclusive as stated in the dWRMP (page 55). Outage duration (in days) is an indication of the number of days on which a degree of outage occurred and should not be interpreted as whole days where a treatment works is out of supply. The magnitude of the event on any one day may have been very small. Therefore, outage duration must be considered in light of magnitude and not used in isolation as an indication of works performance. On average, each of the four WTWs included in the assessment lost 8.5 MI/week to system failure, which is only around 1.6% of the total output from those four works. The amount of system failure outage has been marginally reduced after reassessment of system failure events due to the lasting effects of algae on filters as part of the ongoing algae event.

The Agency highlighted concern with the duration of planned outage at Langham, Langford and Layer treatment works. Again, outage duration alone can not be used as an indication of works performance without consideration of magnitude. Over the 7 year data set these three works combined lost on average 44 MI/week to planned outage which is only around 3% of works output.

The Agency points out that there has been one outage event due to nitrate at Langford since February 2004 and therefore the likelihood of outage due to nitrate should be reviewed. A detailed understanding of the recommended UKWIR guidance reveals that by assessing past outage events, future outage can be estimated. Since there were few nitrate outage events in the data set, as the Agency has highlighted, then the relative contribution from this cause of outage to the final figure is relatively small and therefore representative of likely future outage. The methodology used is the most robust way to predict future outage due to nitrate at Langford Works.

In the Suffolk Hartismere and Suffolk Blyth zones we accept that outage does form a higher percentage of DI than in the Essex and Suffolk Northern/Central resource zones, and this is a reflection of the rural nature of these areas and the fact they are fed entirely from small localised groundwater sources. In order to reduce uncertainty further however, ESW has put in place measures to improve the recording of outage events in the future.

ESW Conclusion

Changes - Outage has been recalculated in Essex in response to the above points. Additionally ESW has also revised the choice of percentile for all the Essex and Suffolk resource zones, switching from the 95th percentile used to the 90th percentile.

Due to these changes the revised Essex outage allowance figure is now 14.79 MI/d, a reduction of 2.23 MI/d from the figure presented in the consultation draft WRMP.



Environment Agency Comment (8)

The Agency recommended that ESW provides all the evidence and technical work to justify why deployable output is reducing due to climate change. Additionally the Agency commented that “as the company believes climate change is having an immediate impact”, it should outline “how it will assess and monitor the impacts while keeping its models up to date”

ESW Consideration

ESW followed the Environment Agency guidance to account for the effects of climate change on water resource zone deployable output (*Supplementary Guidance to chapter 8 – Climate change implications in estimates of water resource zone deployable output*. Arnell and Raynard, Nov 2007). This guidance recommends the interpolation of the effects of climate change as defined for 2025 between the years 2007 and 2040. This was carried out by ESW as per the guidance, with the effect of climate change being zero for the base year 2007.

Details of the technical work carried out to assess the effect of climate change on the Essex System have been provided to the Environment Agency in May 2008 in the form of the supplementary report on the Essex System water resource modelling and DO calculation (page 18) as well as details being available in the dWRMP (Chapter 6 p243-244). Again, this work followed the Environment Agency guidance, and used the spreadsheet tools available as part of the UKWIR CL04 study (as recommended in the guidance).

Details of the technical work carried out to assess the effect of climate change on the surface water in the Northern/Central Zone has been provided to the EA on pages 244-249 of the dWRMP. Again this work followed the EA guidance provided in November 2007. However, ESW recognised that there was currently limited information available to carry out this assessment and hence the draft WRMP will be updated.

ESW Conclusion

No change : ESW has followed the EA guidance relating to climate change assessments for the Essex system and does not intend to carry out any further work on this water resource zone, particularly since the awaited UKCIP scenarios have now been delayed until spring 2009..

Change : ESW acknowledges that there is scope to improve the assessment of the effect of climate change on the surface water in the Northern/Central Zone and as such the assessment for the River Waveney has been completely revised and updated.

Environment Agency Comment (9)

Specifically on climate change the Agency indicated that ESW should:

- (a) commit to undertaking a more sophisticated analysis on the impact of climate change on the River Waveney and Shipmeadow source ; and
- (b) improve the assessment of climate change on its groundwater sources. In this regard, the Agency’s view was that the “level of uncertainty associated with the current assessment is not acceptable”.



ESW Consideration

We agree with the Agency's position regarding the River Waveney. Our assessment of the effect of climate change on the River Waveney used within the original dWRMP was unrefined and limited by the lack of data availability at the time of the assessment. Accordingly the requisite data has now been obtained and analysed, and the dWRMP will be updated to include this more detailed analysis.

On groundwater sources we note that the Agency has not indicated that our methodology is unacceptable, but rather that the level of uncertainty is. We believe our assessment has been as robust as it can be without an available groundwater model or quantified recharge, and for that reason we do not intend to make any changes to our methodology.

It should be noted that that the overall level of uncertainty will be reduced compared with our original dWRMP, particularly during the latter half of the planning horizon, since our target headroom calculations have been revised and include changes to the level of risk applied. (see our answer to Agency question 22 located further on within this document).

ESW Conclusion

Change – River Waveney climate change assessment updated.

Change – Level of uncertainty on groundwater climate change for groundwater sources has been updated in respect of choice of percentile in our headroom assessment.

Environment Agency Comment (10)

On demand and per capita consumption (pcc) the Agency indicated that it had undertaken analysis to show that “if the company reduced pcc” with the aim of achieving Defra’s “objective” of 130 l/p/d then this would reduce ESW’s demand forecast by approximately 42 Ml/d by 2035. The Agency’s suggestion was that ESW should “set out a strategy to show how it will reduce pcc towards 130 l/h/d and achieve the Government’s aim”. The Agency additionally suggested that “this should take account of the advantages offered by achieving universal metering as quickly as possible”.

ESW Consideration

Our view is that the Agency has misrepresented Defra’s view on pcc, in that the average figure of 130 l/p/d by 2030, was never intended as an objective or target but rather as a vision for the future (as described in Defra’s report ‘Future Water : The Government’s water strategy for England, February 2008’). We disagree with any assertion that the water companies can single-handedly reduce pcc to a particular fixed level. On this aspect Defra’s strategy is very clear that (on pg 23) “this is a shared responsibility “, and that “government, manufacturers, land managers and individuals all need to take action to reduce water consumption”.

Although ESW can and wants to influence people to reduce their consumption it cannot enforce consumption to a pre-determined level. We believe that the Agency should also be playing its part (along with water companies and other organisations) in encouraging the reduced consumption of water rather than perpetuating the suggestion that pcc is somehow in the complete control of water companies.

According to the various EA documents forwarded to us, the EA has calculated that we forecast a current pcc of 165 l/h/d reducing to 151 l/h/d by 2035 for Essex & Suffolk Water or 167 l/h/d reducing to 154 l/h/d by 2035 for the Essex resource zone. Below are our concerns



associated with this element of the Agency's comments:-

- Defra's 130 l/h/d is an aspiration not a target. It wants companies' actions to work towards achieving this level, but all members of the Water Savings Group are meant to contribute, not just water companies. With the exception of Ofwat's recent consultation on targets for water efficiency, we are not aware of how the other members intend to contribute. There is currently no mechanism in place to fund and carry out the large scale retrofitting of the existing housing stock which will be necessary to stand any chance of reducing the average pcc to 130 l/h/d. Given the pressure on household budgets at the present time it is also unthinkable that the Government will be introducing such an added expense to customer's water bills in the near future.
- At the time of publishing the draft WRMP neither Ofwat's water efficiency target consultation nor the consultation on amendments to Part G of the Building Regulations were published. Had they been, then due regard to their content would have been taken.
- The figures for our current and future pcc, quoted by the Agency, are not correct. The Agency has taken the 'dry' year pcc. Nothing within Defra's Future Water or the proposed amendments to Part G of the Building Regulations suggests the quoted figures refer to dry year pcc. They refer to normal year otherwise all house builders would be required to contact the local water company to find out the local dry year factor prior to designing the proposed houses. The actual average weighted pcc figures, calculated from those submitted in the dWRMP tables (WRP9) are :-

Essex resource zone pcc 2006/07 = **157.96** not 167 l/h/d
2034/35 = **147.14** not 154 l/h/d

In addition the savings in overall demand from achieving an average weighted pcc of 130 l/h/d by 2034/35 are **36.6 MI/d** not 42MI/d.

The EA's Water Resource Planning Guidelines required companies to forecast per capita consumption by the use of Micro-component modelling. This is what we have done, using a sophisticated model and expending a great deal of time and expense to populate the model with the best available information. If after this exercise the result is dismissed because it doesn't accord with the EA's desired outcome, then companies should have been instructed in the Guidance to plan for a pcc of 130 l/h/d in 2030 and not use a micro-component model.

The draft Plan now uses these micro-component model output pcc figures and reduces them annually, cumulatively to take account of the water efficiency target. In addition the pcc of all new homes to be built after April 2010 has been assumed to be 125l/h/d total water use.

ESW Conclusion

Changes:

We have included the Ofwat water efficiency target into the demand forecasts. For Essex this is equivalent to the pcc of the unmeasured, optants, selectives, compulsory and existing measured reducing by 0.39 l/h/d per annum over each of the 25 years of the plan. In addition, as a result of the consultation on amendments to Part G of the Building Regulations we have assumed all new homes will have a total pcc of 125 l/h/d from April 2010 throughout the planning horizon.

The result of both of these changes, and moving to the 2007/08 base year, sees an average weighted pcc for Essex moving from 159.5l/h/d to 141.3 l/h/d in 2034/35 including meter under-registration. This broadly equates to a demand saving of 26MI/d by 2034/35. Any



further reduction in pcc will be dependent on the Government putting in place funded plans to retrofit the existing housing stock with more water efficient fittings. Any concrete proposals, if there are any, will be too late for inclusion in the final WRMP.

The inclusion of these reductions in pcc from water efficiency targets and Part G of the Building Regs will result in an increase in the uncertainty of demand that will be reflected in target headroom. The increased uncertainty comes from the sustainability, over time, of the activities to achieve the water efficiency targets and the assumed savings from the activity being matched by the actual reduction in pcc. In addition there is a great uncertainty that year on year, in a free society, sufficient customers will be found willing to adopt the water efficiency products or services offered to them. The behaviour of customers in new homes, rated at 125 l/h/d, who may change the fittings or use appliances at a greater frequency than assumed by Part G also adds to the uncertainty.

Whilst pcc is now forecast to reduce annually, new population figures, as a result of the ONS June 2008 update and inclusion of the latest RSS for the East of England, will see a population increase over that used in the draft plan of 36,000 in 2034/35, with a peak increase of 56,000 in 2026. This will have the effect of pushing up the volume of domestic demand. The new 2034/35 population, at 135 l/h/d, adds approximately 5 MI/d to the demand.

Environment Agency Comment (11)

In respect of water efficiency the Agency expects ESW to assess the concept of water neutrality with the final WRMP and build in the water efficiency targets detailed in Ofwat's current consultation.

ESW Consideration

The concept of water neutrality has been assessed by ESW as discussed in section 4.6.3. The report that formed the basis of "water neutrality" lacked many practical realities. The assumptions within the report of the percentage of households willing to take up water efficiency initiatives was well beyond the level that has ever been achieved by us, or other water companies from water efficiency campaigns. The assumption that all water savings occur from within the Thames Gateway from selective water efficiency and compulsory metering and tariffs just within the Gateway, shows a lack of practical and legal understanding of how the Water Industry is regulated and operates. The Ofwat water efficiency targets consultation had not been published at the time of submission of the draft WRMPs.

ESW Conclusion

No Change – our views on the practicality of water neutrality have not changed.

Changes – Now that the consultation on water efficiency has been published our pcc forecasts have been amended to take account of the targets.

Environment Agency Comment (12)

On new build properties the Agency suggested that ESW should revise its demand forecasts to take into account the targets for water use set in the proposed Building Regulations and by Government of the East of England. Additionally the Agency indicated that it should demonstrate how it will meet these targets and maintain these levels over the planning period.



ESW Consideration

The consultation on the revision to Part G of the Building Regulations was not out at the time the original dWRMP was constructed, and this element has now been updated. The East of England plan for pcc of new homes to be 110l/h/d we view as aspirational and with no mechanism in place, voluntary or legislative, to compel developers to build new homes to this level. The difficulty in achieving 125l/h/d, whilst still making the water using appliances acceptable to the occupiers, we believe will preclude any voluntary approach to achieving 110 l/h/d.

Given that the 125l/h/d target is contained within Part G of the Building Regulations, we are of the opinion that this is enforced by the Local Authorities Building Control Department's and find the Agency's question of how "we will meet these targets" out of place. We do not have legal powers to enforce building regulations nor to inspect previously built houses to ensure the occupier only uses 125l/h/d. We do not intend focusing our water efficiency on these properties as greater savings in water are available from working on the existing housing stock.

ESW Conclusion

Change - The updated dWRMP assumes all new homes built from April 2010 have a pcc of 125 l/h/d in accordance with Part G of the Building Regulations.

Environment Agency Comment (13)

In relation to non-household demand the Agency recommended that ESW provides clear evidence for any increase in non-household demand and should undertake a reassessment that follows best practice guidelines.

ESW Consideration

This growth in non-household demand reflects the RSS and London Plan in which both state that new housing and population growth will be employment led with new employment planned to be close to the areas of new housing. The 1% growth assumed is as a result of new, additional non-households not a result of the existing non-households using increased water. Already most of the large industrial water consuming industries have left leaving little opportunity for water efficiency savings from this sector.

Should new nuclear energy generation begin, then Bradwell, Essex has been ear-marked as a site. This alone will contribute significantly to this growth, although at this stage it has not been forecast in.

ESW Conclusion

Change - NERA has re-forecasted the non-household demands for the updated plan.

Environment Agency Comment (14)

On leakage the Agency confirmed that ESW conforms to government policy and does not plan to allow leakage to rise at any time during the planning period. The Agency recommended that ESW should investigate whether further leakage reductions are possible.



ESW Consideration

The company followed the required methodology to calculate its Economic Level of Leakage (ELL), and set its leakage targets, in consultation with Ofwat, against this level. Due to the age of the network there is a natural increase in the ELL as a consequence of aging water mains. However, the company has decided to keep to its agreed leakage targets and intends to significantly increase expenditure on mains replacement and Dagenham common supply pipe replacements in AMP5 to get the ELL back to the current leakage target level and stop the ELL from rising. Additional, very significant, expenditure to reduce leakage further cannot be justified on cost benefit grounds.

In response to the recently issued guidance from Ofwat on the re-calculation of the ELL to include externalities, ESW will update the final WRMP to take account of the results of applying this methodology.

ESW Conclusion

Change – The leakage profile within the draft WRMP is likely to be used in the final plan unless Ofwat does not allow the proposed additional expenditure to hold our ELL at target levels, or the sustainable ELL methodology justifies changing the ELL and subsequent leakage targets.

Environment Agency Comment (15)

On population the Agency welcomed ESW’s commitment to produce an updated forecast in its final WRMP in response to concerns over figures provided by Experian.

ESW Consideration

We are pleased that the Agency agrees with our proposed future work.

ESW Conclusion

Change - Updated forecasts for population and properties have been used in our revised WRMP.

Environment Agency Comment (16)

On metering the Agency’s view was that ESW should “justify why it cannot achieve universal metering by 2015 and by 2020 at the latest”, noting that “a number of similar water companies have demonstrated that this is cost effective and possible”.

Additionally the Agency commented that ESW has “not assessed the case for accelerated universal metering in the Suffolk water resource zones” and that this “does not comply with Defra’s Direction on metering in areas of serious water stress”, suggesting that it also does not comply with ESW’s goal for universal metering as indicated in its Strategic Direction Statement.



ESW Consideration

The Agency has questioned why we are not seeking universal metering by 2015 to comply with its own aspiration for increased metering. It is interesting to contrast the metering comments to those on pcc. In the area of pcc reference is frequently made to Defra's aspiration of average pcc of 130 l/h/d by 2030. On metering, the response makes absolutely no reference to Defra's aspiration that companies in seriously water stressed areas should have "near universal metering by 2030". Our plan comfortably exceeds Defra's aspirations for metering.

We have clearly demonstrated in our plan that no economic case can be made for universal metering by 2015. The Agency's own sensitivity analysis report states:-

Accelerating metering, on its own, would not alter the timing or requirement for a new resource scheme, as it would not deliver adequate additional water savings to overcome the large initial supply-demand deficit in zone.

Defra has clearly stated that powers to compulsorily meter existing customers will only be granted when an economic case can be made to do so. We cannot make that case for PR09 and the Agency's report conclusion shows that it cannot either.

In the case of Suffolk, we were informed by the EA at the time of classifying areas as seriously water stressed that Suffolk was included because "whole" companies were being classified with one classification not individual water resource zones. We were also informed that Suffolk on its own was not seriously water stressed by the EA's methodology. As we cannot make an economic case for the Essex area to move to compulsory metering, it would be grossly unfair, and an unwarranted additional cost to their water, to compulsorily meter Suffolk customers only.

We still have seen no economic or water resource reason from the Agency why it wants companies in seriously water stressed areas to reach universal metering by 2015. There has been no evidence presented and the date seems to have been arbitrarily selected with it now forming part of the Agency's policy. We do wonder why, if the EA is so convinced that paying for what water you use encourages efficient use, it does not promote this approach for the abstraction charging regime.

ESW Conclusion

No change - No change will be made to the Essex metering strategy detailed in the draft WRMP.

Environment Agency Comment (17)

The Agency recommended that ESW ensures that there are no inconsistencies between its dWRMP text and tables in respect of its meter penetration and Dagenham supply pipe project. Additionally the Agency indicated its belief that "household meter penetration of 90% should be achievable in all but the most difficult circumstances" stating that ESW should justify why it cannot achieve this.

The Agency also suggested ESW should consider the installation of smart meters and the development of new tariffs, indicating that increases in metered properties can help to reduce supply pipe losses.

The Agency indicated that ESW needs to amend its plan to take into account that as it is



located in an area of serious water stress, then it does not need to apply for further powers in order to undertake compulsory metering.

ESW Consideration

The comment “We expect ESW to justify why it cannot achieve universal metering by 2015 and by 2020 at the latest”, is fully answered in the Plan. For Essex, as it states clearly under Option 1, Page 220, universal metering will be achieved by the end of 2020. In the Water Resource Plan tables the meter penetration for the end of 2020 is 83% not the 79% quoted by the EA.

We have stated that we intend to achieve Universal metering by the end of 2020 and that currently we estimate this to be between 80% and 85% of our housing stock. The PR14 plan will be updated with the number of meters required to achieve this. To attempt to be exact about the percentages at this stage is meaningless as by 2014 we will have further information on the number of meters installed in AMP5 and further evidence on the likely number of properties that can be metered from experience gained by our ongoing selective programme.

The comment relating to this that “A number of similar water companies have demonstrated that this is cost effective and possible” is not correct because:-

- It cannot be demonstrated to be cost effective generically as it has to be assessed alongside other demand management and supply options for the specific company and water resource zone circumstances.
- Defra need to accept it for inclusion in a company's Final Water Resource Management Plan,
- It cannot be demonstrated that 90% meter penetration is possible until the work is underway and actual experience is gained.
- Unlike the companies going straight from optant metering to proposed compulsory metering, we have “on the ground” experience of the number of properties that can be economically metered from our AMP4 change of occupier metering programme.

We have demonstrated clearly in the section under Universal Metering why we believe this is likely to be between 80 to 85% in Essex, not 90%. Beside the number of Local Authorities that are on a schedule, Essex and the London Boroughs we serve had a massive and rapid house building programme immediately after World War 2 to house the victims of the Blitz. This led to a very large number of our housing stock having shared and complex supply pipe arrangements. Other companies, more away from London, may well be able to achieve a higher level of meter penetration than our Essex zone.

ESW Conclusion

No change - Our estimation of Universal metering will remains the same.

Environment Agency Comment (18)

On options, the Agency recommended that ESW revise its options appraisals as it considers that ESW “has not demonstrated that its preferred final planning solution is the most efficient use of water resources”. The Agency pointed to the results of its own sensitivity analysis, which it claimed appeared to show that in Essex the Abberton Scheme may be required later,



particularly if a 130 l/h/d pcc is assumed.

The Agency's view was that ESW's plan had "not fully explored demand management as an option" and pointed to the relatively small amount of demand savings in option appraisal as compared to resource developments within Essex. The Agency also indicated that ESW has "not included any demand management options in its preferred final planning solution for the Northern/Central zone".

ESW Consideration

ESW's aim is "the most efficient use of water resources". However, the purpose of an options appraisal is more to do with comparisons based on economic analysis as underpinned by environmental, social and carbon costs. As this was the basis for our original dWRMP we consider we have met the requirements of the applicable guidance. At the request of the Agency we have done some work subsequent to the consultation dWRMP based on the 130 l/h/d by 2030 aspiration. This work did not change the outcome of our options assessment in that the Abberton Scheme is still the only option of sufficient size and least cost that can be developed within the required timeframe to meet the existing and predicted supply/demand deficit.

The Agency's sensitivity analysis cannot be taken as justification for selecting different options as it was asymmetric in its construction. It neither looked at the practicality or methodology of achieving any of the demand management options it took account of nor did it carry out any cost benefit analysis of the options. No organisation should advocate options regardless of cost. Perhaps even more disturbing was that the Agency noted on a number of occasions that it had not increased target headroom to account for the much greater uncertainty of achieving these very ambitious water savings, but then went on to compare the Water Available for Use with its new demand plus the original target headroom. Any conclusions drawn from this type of unbalanced work are of very dubious benefit when trying to ensure security of supply for our customers and aiming to safeguard the environment. Interestingly despite assuming completely unrealistic demand savings and the previous target headroom, its work still showed the Essex zone with a significant supply demand deficit of 20 – 30 MI/d.

The Agency seems to disregard the costs and water savings associated with leakage and metering as not being part of demand management. We do not agree with this view as the company is proposing to spend an additional £25m over AMP5 on overcoming the Natural Rate of Rise of leakage and bringing the ELL back to the leakage target. This is in addition to the significant operating cost associated with maintaining leakage at the agreed target. Metering over the AMP5 period is forecast to cost almost £26m. The application of the Ofwat water efficiency targets will add in excess of £8m to our operating expenditure over the AMP. These are very significant sums of money for a business the size of ESW and should leave no doubt about our commitment to demand management.

ESW Conclusion

No change – for reasons indicated above.

Environment Agency Comment (19)

The Agency's view was that the role of demand management to reduce water use and leakage has "not been fully explored" in the dWRMP.



ESW Consideration

Our view is that we have extensively explored demand management options and included a wide range of options in our final plan – going well beyond what is economic. Comparisons with other company plans show our review of water efficiency options has been well in excess of others and our extensive experience in water efficiency has enabled us to be the only company to produce robust cost and savings estimates.

ESW Conclusion

Additional water efficiency costs and water savings are now planned as a result of the Ofwat water efficiency target.

Environment Agency Comment (20)

The Agency considered that ESW had “not fully investigated the feasibility of alternative supply options to the Abberton Scheme”.

Additionally the Agency felt that ESW should “conduct further investigations into reusing effluent from Colchester wastewater treatment works”, as its view was that its own investigations had indicated that “reuse of effluent from Colchester could be a feasible option”.

ESW Consideration

We are surprised that the Agency considers that we have not fully investigated the feasibility of alternative supply options to the Abberton Scheme. This may be due to a misalignment in our respective expectations with respect to the level of feasibility required. Within our plan we assessed a number of alternatives to Abberton including RO Desalination, Increase Chigwell bulk supply via UTMRD, notional effluent recycling, River Trent Transfer, Canal Transfer and two derivatives of the Abberton scheme. This follows the assessments of these and many other options in our previous two Water Resources Plans. Our position is that we have considered these options in an appropriate level of detail, and that in many cases the options cannot be pursued for stated reasons.

It is important when the Agency considers our options appraisal, that the current advanced stage of implementation of the Abberton Scheme, with construction starting in summer 2009, and the associated costs already expended over the last 10 years, are taken into consideration when comparing the relative merits of alternative options. These costs are by no means insignificant. Our estimate is that they will amount to around £39m by the end of AMP4.

Regarding effluent re-use, as the Agency is aware ESW has been at the forefront of this innovative technology via the development of our Langford recycling scheme that was completed at the end of 2003. Unfortunately however the Agency's Review of Consents process on the Blackwater Estuary has resulted in the Langford Recycling Plant's output not being able to be increased in the future to its design capacity to meet the requirements of the Habitats Directive. This will naturally make companies wary about making the significant investment required to recycle effluents, notwithstanding that the yield from such schemes would be adversely affected by the Agency's aspirations around lowering pcc. In our own case the Agency's suggestion in their technical appendix that a 10.2 MI/d scheme based on the recycling of Colchester effluent may be economic is not correct. At the Agency's request



we have discussed the option with AWS and developed unit costs for this specific scheme which is included in our updated WRMP. However even before we undertook this, it was obvious that the option would not satisfy cost, sustainability or timescale requirements

ESW Conclusion

Change – We have included the specific Colchester effluent re-use option in our updated WRMP.

Environment Agency Comment (21)

The Agency commented that in Appendix B of the plan on water efficiency options AISC costs had not been included and that ESW should “provide details on how it has selected its feasible option list and provide information on costs for all constrained demand and supply options”.

ESW Consideration

The statement that appendix B of ESW's dWRMP does not include AISC costs is wrong. Page 480 of the plan (within appendix B itself) indicates that the AISC was the basis of the calculation pointing to the inclusion of carbon emissions savings. Carbon emissions and savings are clearly dealt with on pages 490 to 496 of appendix B.

The Agency's assertion that information on costs for feasible demand and supply options has not been provided is also wrong. Clear cost information on these options is presented on pages 357 and 358.

ESW Conclusion

Change – All water efficiency options have now been removed from the options appraisal as they will all be needed in the baseline to ensure we comply with Ofwat's water efficiency target.

Environment Agency Comment (22)

On headroom the Agency indicated that ESW “needs to justify its decision to accept the same level of risk over the planning period” and review its target headroom calculations. The Agency commented that “in the Suffolk resource zones headroom uncertainty exceeds 10% of WAFU”, and that “this seems high when compared to other similar companies”.

The Agency noted that ESW “must remove uncertainty associated with sustainability reductions resulting from the Habitats Directive review of consents”.

ESW Consideration

Unlike Suffolk, the level of target headroom used in the original dWRMP for Essex was not high when compared with other companies.

We agree with the Agency's view that the same level of risk should not be accepted throughout the planning horizon and have therefore switched percentiles during the planning horizon (i.e. we have adopted a variable risk profile) to reflect this. Previously we assumed



the 90th percentile (l in 10 return period) across the whole planning period. In the updated dWRMP we have revised this position and applied the 90th percentile up to 2019/20, the 80th percentile from 2020/21 onwards, and the 75th percentile from 2030/31 onwards. These changes have been applied to all the Essex and Suffolk resource zones.

The Company notes the Agency's comments regarding removing uncertainty around the review of consents, but is surprised the Agency even made the comment since ESW indicated in the text at the top of page 264 that it would amend this item in the final WRMP. In retrospect our decision to include this uncertainty in the dWRMP was fully vindicated as the potential for a new and unexpected sustainability reduction later surfaced in relation to the Blackwater Estuary.

ESW Conclusion

Change – variable percentiles of target headroom have been used in our updated WRMP as indicated above.

Environment Agency Comment (23)

On SEA the Agency commented that it was “not clear how the SEA report has influenced the outcome of the dWRMP” and that this is “partly because the results of the options appraisal are in separate documents”. The Agency also wanted “a clear rationale for selecting one option over another”.

The Agency noted that ESW had not produced a non-technical summary of the SEA report as required by the SEA Directive.

ESW Consideration

ESW accepts that, while Section 2.5 of the draft SEA Environment Report clearly illustrates and describes the SEA process, including how the SEA has influenced the outcome of the dWRMP, and that Section 10.2 (Selection of the Final Planning Solution) clearly sets out the social and environmental justification for the selection of the final planning solution, Section 10.2 would also benefit from a summary of this process.

ESW agrees that a non-technical Summary should have been included in the draft SEA Report.

ESW Conclusion

Changes - The draft SEA Environment Report has been updated to include a description in Section 10.2 of how the SEA influenced the final planning solution and a non-technical summary.

Environment Agency Comment (24)

On Defra Directions the Agency indicated that ESW had complied with most of these, but that additional work was required to ensure full compliance in two cases (directions 2 and 3).

In the final WRMP the Agency expects “to see evidence to show the required information on both planned and actual levels of service” and commented that ESW “should also provide a description of how existing options for water supply were selected as well as future options”.



The Agency also requested “full information on metering types and how they effect demand” and commented that ESW “should also provide clear cost information relating to metering strategy” and how this compares with compulsory metering.

ESW Consideration

Page 22 of our dWRMP clearly indicates where in the document the issues contained with the Defra Water Resources Management Plan Direction 2007 are addressed.

Since the existing options for water supply have been developed over the last 100 years or so it is difficult if not impossible to go back and understand how they were selected, particularly given that ESW’s water supply infrastructure has evolved over this time and the old approach of “predict and provide” was more prevalent up until the 1980’s, rather than any true options appraisal. In terms of future options for supply (and indeed demand, as we follow the twin track approach) our position is that we have been clear over how these options have been selected. The generic options were subject to a screening process using pre-defined criteria (e.g. those indicated in Stage 4 of EBSD, SEA, and user-defined) as outlined on pages 313 to 320 of the dWRMP. Of the remaining ‘feasible’ options, ‘Considerations in Scheme Selection and Scheduling’ are outlined on pages 362 to 364 of the dWRMP, and a ‘Reasoned Justification’ for the chosen options (as required under the Agency’s Water Resources Planning Guideline) is clearly provided on pages 389 to 392 of the dWRMP.

Metering costs have been included in the revised draft

ESW Conclusion

No change – for reasons indicated above.

Change - Metering costs have been included in the revised draft.

Environment Agency Comment (25)

The Agency commented that ESW’s plan was easily identifiable on its website and had issued a press release to publicise the launch of the consultation.

ESW Consideration

No comment

ESW Conclusion

No change required

**Environment Agency Supporting Report 1 -
Technical Report to Support Representation**

We have additionally taken into account comments within the above Agency supporting document where it has been appropriate to do so and where the comment has not been specifically indicated within the general response. In this case the main additional areas worthy of comment are in relation to deployable output.



Specific comments raised by the Environment Agency in this document are presented in the following sections with our response and conclusion to each point as indicated. To avoid confusion we have continued the comment numbering system as used in the above response.

Environment Agency Comment (26)

The Agency commented extensively on the two different approaches used by ESW in consideration of supply forecasts, one being ESW's deployable output approach and the other being the Agency's requested approach. The differences between the two approaches are summarised in a table (3.1) within the Agency's technical response. The Agency commented that ESW had not provided commentary on these differences.

ESW Consideration

The Agency appears to have misunderstood that the approach presented by ESW is that based on the definition of deployable output as presented in the Environment Agency's 1998 document "*Review of Water Company Yields*". This definition is reproduced on p33 of the dWRMP and states that deployable output for a surface water system is "*the constant rate of supply that can be maintained from the water resources system except during periods of restriction*". Drought measures are therefore excluded based on the Agency's definition of deployable output provided in their 1998 document, and not on the basis that they 'offset' each other as indicated in this table.

The Agency comment that under the ESW preferred approach to DO calculation, it is difficult to ascertain impact of changes to drought measures. However, this is demonstrated through the Levels of Service work ESW presented on pages 41-45 of the dWRMP.

Given that the Agency's approach does not comply with any Industry standard definition for deployable output we have not sought to analyse the results or differences in using this approach.

ESW Conclusion

No change – ESW has followed the EA guidance using the methodologies detailed in their 1998 document *Review of water company yields*. The existing EA guidance points towards this document as one of the key documents to be used for surface water yield assessment. ESW only carried out alternative methods of assessment at the request of Agency staff, but do not deem this method to be a viable alternative to current best practice.

Environment Agency Comment (27)

The Agency presented a table to show the differences in the drought measures included in the modelling for both ESW's preferred DO approach and the Agency's preferred approach.

Note 1 at the bottom of the table states that the Agency had not expected the SAGS boreholes to be included in the ESW baseline DO.

Note 2 at the bottom of the table questions the appropriateness of including a Denver Drought Order in the drought measures applied to the Agency's preferred modelling approach.



ESW Consideration

In relation to Note 1, ESW had informed the Agency during a meeting on the 9 November 2007 that at its request, additional programming had been carried out in the *Aquator* model to enable the SAGS boreholes to be included in the baseline deployable output calculation based on the control curve on Abberton Reservoir associated with their operation. It was also stated at this meeting that it would not be possible to include the GOGS boreholes in the baseline DO until the Agency could provide some firm control rules under which their operation can be modelled. As this has never been provided the GOGS boreholes were not included.

On Note 2, the Denver Drought Order is one of the standard drought measures presented in the ESW Drought Plan, and therefore it should not be a surprise to the Agency that this was included on a list of drought measures available for the baseline Essex System.

ESW Conclusion

No change – for reasons indicated above.

Environment Agency Comment (28)

The Agency questioned the inclusion of reservoir control curves in the ESW modelling approach, suggesting that these are drought measures.

ESW Consideration

ESW does not consider the control curves used for the operation of the Ely Ouse to Essex transfer scheme (EOETS) as drought measures. The EOETS has always been considered to be part of the baseline Essex System and the inclusion of control curves merely enables the modelling of the use of the EOETS to be carried out in a more realistic way. The EOETS is operated outside of periods of restriction and therefore under the 1998 definition of DO should be included in the baseline deployable output calculation.

Similarly, the SAGS boreholes if operated based on their Abberton Reservoir control curve, would be operated prior to other drought actions being implemented (i.e. demand restrictions such as a hosepipe ban). They are therefore operated outside of periods of restriction and under the 1998 definition of DO should be included in the baseline deployable output calculation.

ESW Conclusion

No change – for reasons indicated above.

**Environment Agency Supporting Report 2 -
Supplementary Technical Report on Sensitivity Testing of the Essex Resource Zone
Supply Demand Balance**

We have additionally taken into account comments within the above Agency supporting document where it has been appropriate to do so and where the comment has not been



specifically indicated within the general response.

Specific comments raised by the Environment Agency in this document are presented in the following sections with our response and conclusion to each point as indicated. To avoid confusion we have continued the comment numbering system as used in the above response.

Environment Agency Comment (29)

The Agency commented that “the company has not calculated headroom for 2006/07 so this is an actual deficit against dry year demand”.

ESW Consideration

This comment is odd as not only is the dry year demand not based on actual out-turn figures but the supply calculations (WAFU) are based on theoretical dry year yields and not actual abstraction.

ESW Conclusion

No change – for reasons indicated above.

Environment Agency Comment (30)

The Agency made the comment that they “believe the opportunities to reduce customer demand from the introduction of alternative tariff structures and the installation of intelligent water meters has not been fully explored in the dWRMP”.

ESW Consideration

With a limited number of small trials just starting in the Industry, there is no suitable information available to base any forecasts of the effects of intelligent metering or tariffs on demand.

ESW Conclusion

Change - Since the release of Ofwat’s baseline report in December 2008 the plan to install intelligent meters on all new installations and meter replacements has been reviewed. With the exception of new internal installations, no case can be made on cost benefit grounds. We are still proposing our Galleywood trial of building an intelligent meter network. Results from this should inform our case for inclusion in AMP6.

Environment Agency Comment (31)

The Agency undertook sensitivity analysis using its CoPS spreadsheet model to look at the potential effect on the Essex supply demand balance by using different assumptions. The first scenario considered accelerating compulsory metering to 2015 with the result that this would not alter the timing for a new resource scheme. The second scenario considered increasing the demand savings from compulsory metering from 8% to 10%. Again this did not change the need or timing for a new resource scheme. A third scenario included evaluating



the impact of reducing the pcc for new builds to 112 l/h/d. This scenario did not make any significant difference to the current supply demand deficit in the early part of the planning horizon. A fourth scenario assumed a further 10% reduction in leakage during AMP5 in the Essex resource zone. This scenario also resulted in no significant difference to the current supply demand deficit in the early part of the planning horizon.

ESW Consideration

These scenarios are not seen as credible and there is no practical evidence that they can be achieved. We do not believe there is benefit in such important areas as ensuring a secure supply of water to our customers and protecting the environment, to hypothesize on what would happen if these demands were achieved.

ESW Conclusion

No change – for reasons indicated above.

Environment Agency Comment (32)

The Agency's fifth sensitivity scenario considered a reduction in pcc to 130 l/h/d by 2030 which the Agency indicated as equating "to a reduction in average pcc of 16% compared to ESW's current forecasts". According to the Agency this would result in a yield of 42 Ml/d of demand savings, although it was acknowledged that this measure alone "would not remove the need to increase supply to short to medium term in order to overcome this zone's initial supply-demand deficit."

ESW Consideration

We have now adopted all of the pcc changes detailed previously with the resultant average weighted pcc in a normal year now at 142.5l/h/d in 2030 for our Essex zone.

ESW Conclusion

No further changes

Environment Agency Comment (33)

The Agency considered two more 'single' scenarios. Scenario 6 considered keeping non-household demand stable from 2020 which would obviously have no affect on the need for a sizeable supply option which is required now. Scenario 7 considered implementing a recycling scheme utilising Colchester effluent, but again as this could not be available before 2018 at the earliest, there is no affect on the timing of need for the Abberton Scheme.

ESW Consideration

Non-household demand is forecast by NERA, recognised economic expert forecasters, and we have no reason to dismiss their forecasts just because it would be fortuitous to the EA's scenario if economic growth stagnated in Essex post 2020.



Colchester effluent reuse is now in the options appraisal.

ESW Conclusion

Changes - New non household forecasts are used in the revised draft, and Colchester effluent reuse is now included as an option.

Environment Agency Comment (34)

The Agency's last scenario (scenario 8) considered a combination of the options looked at under scenarios 1 to 7. This indicated that only a small resource scheme (rather than Abberton) might be necessary to remove the now smaller deficit in the earlier part of the planning horizon. The Agency did however acknowledge that target headroom would need to be reassessed under such a scenario and that this could alter the supply demand balance for the zone.

ESW Consideration

This issue is effectively answered in response to Environment Agency Comment (18).

ESW Conclusion

No change – for reasons indicated above.

Maldon District Council

Maldon District Council commented that it was "impressed with the comprehensive approach to preparing the Management Plan" and noted the reasons for the worsening of the supply demand balance in Essex since WRP04. Additionally the Council welcomed the investment in ESW's innovative Langford Recycling Scheme and looked forward to further engagement with the Company on the effects of climate change and the location of new housing.

ESW Consideration

We thank Maldon District Council for its kind comments on our dWRMP and Langford Recycling Scheme and look forward to continuing to work with the Council in the future.

ESW Conclusion

No Change – as none suggested.

Natural England

Natural England provided a single response covering both the dWRMP consultation and the



SEA consultation.

Natural England's general view was that although it welcomed the long term forward look provided by the plan it had concerns over level of detail of the SEA and about the potential environmental effects of the North Lowestoft proposals. Additionally Natural England indicated it would like to see more ambitious demand management targets and would like to see "a broader approach for dealing with unsustainable abstractions to ensure the protection of Habitats Directive sites and national SSSIs".

Natural England commented that it considers itself to have good working relations with ESW and would be pleased to discuss issues raised after the consultation period.

The response from Natural England was not signed by anyone. It would be useful if someone could take responsibility for the comments being made, in order to allow us to meaningfully engage.

On the SEA, Natural England found that the document was "lacking in terms of the level of analysis necessary to provide a sufficient picture of environmental impacts to the new reader" and provided specific comments to this end.

Specific comments raised by Natural England are presented in the following sections with our response and conclusion to each point as indicated.

Natural England Comment (1) - dWRMP

Natural England made a generic comment that the WRMP should "set out a clear strategy for reducing overall abstraction pressures on our wetland habitats" and to "set out definite sustainability reductions for Habitats Directive sites". Natural England also recommended that ESW should "include a margin for likely future advice on necessary reductions for Habitats Directive sites – at least as a sensitivity analysis".

ESW Consideration

Although an admirable aim to set an abstraction pressure reduction strategy in the WRMP this is not within the remit or intended purpose of the document. However such a strategy exists implicitly within Agency processes for both Review of Consents and Restoring Sustainable Abstraction programmes.

The Agency's Review of Consents is the regulatory mechanism through which definite abstraction licence sustainability reductions for Habitats Directive sites should be set. At the time of producing both the original dWRMP, no definite sustainability reductions had been identified by the Agency. In October 2008 a number of definite sustainability changes were provided by the Agency and these have now been incorporated in the updated dWRMP.

ESW Conclusion

Change – Definite sustainability changes have been incorporated into the updated dWRMP.

Natural England Comment (2) - dWRMP

Natural England highlighted that a more detailed picture had emerged regarding the potential for sustainability reductions on the Blackwater Estuary and that this should be reflected within the final WRMP. Additionally Natural England suggested that additional sensitivity analysis



should be undertaken in consideration of potential sustainability reductions at other sites such as Crostwick Marshes, Ludham-Potter Heigham Marshes SSSI, Stanley and Alder Carr and Burgh Common & Muckfleet Marshes SSSI.

ESW Consideration

The Agency has confirmed a definite sustainability change to the Hands Off Flow condition on the Langford Recycling Plant (LRP) discharge consent. This has been incorporated into the updated dWRMP. In addition Stanley and Alder Carrs (which are linked to Geldeston Meadows) were confirmed as having a definite sustainability change by the Agency in October 2008. The effects of this are therefore considered in the updated dWRMP.

As above (Natural England Comment 1 - dWRMP), RoC is the mechanism through which definite sustainability reductions are set and so ESW's view is that it is not appropriate to undertake additional sensitivity analysis in consideration of potential sustainability reductions at other sites such as Crostwick Marshes, Burgh Common & Muckfleet Marshes SSSI (which are all linked to the Trinity Broads which currently holds an indicative sustainability reduction and will not be confirmed as definite until December 2009).

ESW Conclusion

Change – Definite sustainability changes have been incorporated into the updated dWRMP.

Natural England Comment (3) - dWRMP

On SSSIs, Natural England pointed to ESW's duty under the CROW Act and Natural Environment and Rural Communities Act (2006), and suggested that the final plan should "specify reduced abstraction amounts to take account of SSSIs affected" and consider "how abstraction reductions could help other sites". Natural England indicated that the final WRMP should consider "proposals for reducing unsustainable abstraction on national SSSIs, and include a sensitivity margin for water resources needs for wetland habitats recreation in the area".

ESW Consideration

Sites that are thought to be significant adversely affected by public water supply abstraction are identified by the Agency, in liaison with Natural England, for inclusion in the water companies AMP National Environment Programme (NEP) which in turn falls under the Agency's Restore Sustainable Abstraction Programme (RSAP). Those sites included in the NEP are investigated by the water companies to establish whether their abstraction is actually having a significant adverse effect on the designated features of a water dependant site. If so, remedial action is agreed and implemented. This may include reduction in licensed quantity or a technical solution such as the installation of a water level management structure. Consequently, it is not for water companies to specify reduced abstraction amounts for sites that are not already in a company's NEP but for the Agency and Natural England to ensure a site is included in the next AMP NEP.

ESW Conclusion

No change – for reasons indicated above



Natural England Comment (4) - dWRMP

Natural England stated that it supported ESW's objective of universal metering by 2020, but commented that there should be "more ambitious assumptions about pcc". Natural England noted that ESW's unmeasured pcc remains static over the planning period and commented that Defra's Water Strategy calls for a lower average pcc of 130 l/h/d, indicating that "standards for new build of 105 l/h/d are being discussed in many fora". Natural England stated that "for an area that is currently water stressed.....targets at least in line with Defra's Water Strategy should be achieved by the end of the period."

ESW Consideration

Our view is that Natural England has misrepresented Defra's view on pcc, in that the average figure of 130 l/p/d by 2030, was never intended as an objective or target but rather as a vision for the future (as described in Defra's report 'Future Water : The Government's water strategy for England, February 2008'). We disagree with any assertion that the water companies can single-handedly reduce pcc to a particular fixed level. On this aspect Defra's strategy is very clear that (on pg 23) "this is a shared responsibility ", and that "government, manufacturers, land managers and individuals all need to take action to reduce water consumption".

Although ESW can and wants to influence people to reduce their consumption it cannot enforce consumption to a pre-determined level. We believe that Natural England should also be playing its part (along with water companies and other organisations) in encouraging the reduced consumption of water rather than suggesting that pcc is somehow in the complete control of water companies.

ESW Conclusion

No change - We will not be changing our forecasts to take into account aspirations that have no mechanism to achieve them.

Natural England Comment (5) - dWRMP

In relation to the Abberton Scheme, Natural England commented that it "agrees with the conclusion of the SEA that the adverse affect is not considered significant and has raised no objection to the Abberton Scheme in recent responses to the planning authorities. However Natural England was concerned that readers new to the Scheme would not have benefited from the long history of engagement as experienced between it and ESW, and hence may not be able to follow and support the conclusion from the material contained within the documents.

ESW Consideration

We are grateful for Natural England's support on the Abberton Scheme and thank them for their positive engagement during our consultations with them over the last few years.

Whilst understanding of the point being made by Natural England in relation to level of information, there needs to be a balanced description of the option which, for consistency, needs to be at a similar level for all the water resources management options considered. For this reason we considered that it was not appropriate, for example, to attempt to condense down the history of consultation on the scheme. It should also be recognised that the detailed Environmental Statement for the Abberton Scheme has been publicly available



via our website since January 2008. For these reasons we do not intend to modify the final WRMP in relation to this aspect.

ESW Conclusion

No change required – for reasons indicated above

Natural England Comment (6) - dWRMP

Natural England indicated its concerns on the potential effects of the North Lowestoft Groundwater investigation on “groundwater sensitive sites” and commented that the details of the scheme in the WRMP were not sufficient for them to make an informed comment on the suitability of the scheme and that they would like to see more detail in the final plan. Additionally Natural England commented that the SEA does not go far enough in considering if any important wetland sites may be impacted, although recognised that the scheme was not required until 2022.

ESW Consideration

We appreciate Natural England’s concern over the potential effects of the North Lowestoft Groundwater Scheme but would re-iterate that this option is still at a very early conceptual stage of consideration with the environmental effects not yet having been considered since the necessary desk study work has only just commenced. Natural England should be reassured that the Agency’s existing rigorous abstraction licensing process, and indeed its own role as a consultee within it, will provide the necessary safeguards combined with the requisite weight of evidence from ESW’s intended investigations. Although still conceptual we took the view that the North Lowestoft Groundwater Scheme should be considered as a ‘feasible’ option for the purposes of the dWRMP due to the lack of economically viable alternatives with the required yield. Should our studies and investigations prove that abstraction is unsustainable and/or that the likely effects on water dependent features (including wetlands) are unacceptable then the scheme would no longer be pursued by ESW.

ESW Conclusion

Change – We have updated the WRMP to include a reference to a study recently completed for us by BGS on the potential for developing groundwater in the area of interest.

Natural England Comment (7) - dWRMP

Natural England commented that it supported the “cautious approach to use of the Great Ouse Groundwater Scheme boreholes” but requested “further detailed assessment before any currently unused licensed sources in this area were taken up”.

ESW Consideration

The GOGS boreholes are owned and operated by the Environment Agency which holds the governing abstraction licences. Currently there are no control rules to trigger use of the scheme for ESW’s benefit, with current operation being determined by the Agency largely on an adhoc observational basis, mainly during drought periods. We fully expect that the Agency will undertake ‘further detailed assessment’ as required under the review of consents process. Outside of this process we are unsure whether Natural England’s last comment has any real



standing because currently, as long as a source is licensed it can be used, provided the terms of the licence are met.

ESW Conclusion

No change – for reasons indicated above.

Natural England Comment (8) - dWRMP

Natural England requested that a statement should be made in the document that all proposals would be the subject to more detailed Habitats Regulations Assessment before implementation works begin.

ESW Consideration

In October 2005, the European Court of Justice ruled that the UK Government had originally only transposed the Habitats Directive as it applies to projects. However, the Habitats Regulations have since been broadened to include Land Use Plans but not Water Resources Management Plans.

ESW is committed to undertaking a Habitats Regulations Assessment when promoting a scheme that might affect a Natura 2000 site.

E5SW Conclusion

Change – We have added a specific reference to obligations under the Habitats Directive.

Natural England Comment (9) - dWRMP

In relation to the presentation of the dWRMP, Natural England commented that overall it “found the document quite difficult to work through” and identified “a gulf in detail between the executive summary and the detailed main chapters”. Natural England recommended a shorter final document with some of the detailed analysis in annexes.

ESW Consideration

Natural England was the only respondent that found the document difficult to work through. In fact two other organisations (the Broads Authority and Waterwise) provided entirely the opposite view. Given this position and that fact that comments of this nature are very much subjective and dependent on an individual’s viewpoint, we have no reason to change the presentational layout of the Plan.

ESW Conclusion

No change – as majority of respondents either supportive of layout or did not comment.

Natural England Comment (10) - SEA

Natural England indicated that the SEA had not gone far enough in identifying the sites which



could potentially be affected by the preferred schemes, adding that “there has been an inadequate analysis of the significant environmental affects for the area affected by the plan”.

ESW Consideration

Unconstrained Options are generic options which are not site specific. Consequently, it is not possible to establish which designated sites could be affected at the Unconstrained Options Assessment Stage (Stage B1). At the Feasible Options Assessment stage (Stage B2), the locations had not been confirmed for some feasible options. For those locations which have now been confirmed, the Feasible Options Assessment stage (Stage B2) will be repeated and the draft SEA Environmental Report will be updated accordingly.

ESW Conclusion

Change - The draft SEA Environment Report has been updated to confirm which designated sites could be affected by a feasible option.

Natural England Comment (11) - SEA

Natural England stated that it was unclear how the plan would affect the state of the environment, which is a purpose of SEA.

ESW Consideration

A summary of how the draft Water resources Management Plan's Final Planning Solution will affect the state of the environment will be included in Section 10 of the updated draft SEA Environment Report.

ESW Conclusion

Change - The draft SEA Environmental Report has been updated accordingly.

Natural England Comment (12) - SEA

On monitoring (including monitoring the effects of the WRMP itself), Natural England commented that there was very little information within the SEA.

ESW Consideration

The draft SEA Environment Report identifies significant environmental effects and associated monitoring tasks. Where appropriate, ESW has provided additional detail. Where this has not been possible because the scheme is not sufficiently progressed, the timescales for agreeing the scope and commencing monitoring are given.

ESW Conclusion

Change - The draft SEA Environmental Report has been updated accordingly.



Natural England Comment (13) - SEA

Natural England indicated that it is “difficult to see how the conclusions of the SEA have influenced the WRMP options”, adding that the “justification for why certain options and schemes have been chosen is not very clear” citing the North Lowestoft Groundwater Scheme as an example.

ESW Consideration

Section 10.2 (Selection of the Final Planning Solution) of the draft SEA Environmental Report sets out the social and environmental justification for the selection of the final planning solution. While Section 2.5 clearly illustrates and describes the SEA process, including how the SEA has influenced the outcome of the dWRMP, ESW agrees that Section 10 would also benefit from a summary of this process.

In the case of the North Lowestoft Groundwater Scheme the reason for choosing the option is simply that it is the only option available in the right timeframe with the right yield to address the predicted shortfall. If, when investigated, this option is not sustainable or has unacceptable effects on designated sites, then it will not be pursued.

ESW Conclusion

Change - The draft SEA Environment Report has been updated to include a description in Section 10.2 of how the SEA influenced the final planning solution.

Natural England Comment (14) - SEA

Natural England commented that “there is insufficient spatial analysis of the impacts of the plan particularly in relation to wetland sites that could be potentially affected by the Plan”.

ESW Consideration

Unconstrained Options are generic options which are not site specific. Consequently, it is not possible to establish which designated sites could be affected at the Unconstrained Options Assessment Stage (Stage B1). At the Feasible Options Assessment stage (Stage B2), the locations had not been confirmed for some feasible options. For those locations which have now been confirmed, the Feasible Options Assessment stage (Stage B2) will be repeated and the draft SEA Environmental Report will be updated accordingly.

ESW Conclusion

Change - The draft SEA Environment Report has been updated to confirm which designated sites could be affected by a feasible option.

Natural England Comment (15) - SEA

On Section 4.3 on biodiversity, Natural England commented that this was weak and should highlight critical regional issues such as habitat fragmentation, impacts of development pressure and climate change etc. Additionally the view was expressed that “there is too much reliance on website links as opposed to summary and analysis”. Natural England



would like to see reference made to “green infrastructure” and “multifunctional land-use” Particularly in relation to flood risk and water storage opportunities and recreational opportunities for water based assets.

ESW Consideration

Section 4 was prepared during the scoping stage of the SEA prior to the SEA being undertaken. This section will now be relocated to an appendix. Unconstrained Options are generic options which are not site specific. Consequently, it is not possible to establish which designated sites could be affected at the Unconstrained Options Assessment Stage (Stage B1). At the Feasible Options Assessment stage (Stage B2), the locations had not been confirmed for some feasible options. For those locations which have now been confirmed, the draft SEA Environmental Report will be updated accordingly. Contrary to Natural England’s comments, regional issues such as habitat fragmentation and climate change were both covered in the draft SEA Environment Report in Sections 4.3.5 and 4.10.2 respectively. Signposting the reader via web links was used in the draft SEA Environment Report where it was thought the information was presented best on the owner's website or where there were copyright issues. ESW agrees that reference to “green infrastructure” and “multifunctional land-use”, particularly in relation to flood risk and water storage opportunities and recreational opportunities for water based assets should be made.

It should be recognised that the principal remit of the dWRMP (and by implication the SEA) is to focus on the options for addressing future predicted shortfalls in the supply demand balance. The documents are not looking at existing water supply infrastructure.

ESW Conclusion

Changes - The draft SEA Environment Report has been updated to confirm which designated sites could be affected by a feasible option. Additionally, Sections 4.3.5 and 4.10.2 (albeit that they are now in an appendix in the updated draft SEA Environment Report) have been updated to reflect ESW initiatives in catchment and conservation management, and climate change. Reference to “green infrastructure” and “multifunctional land-use” has also been made.

Natural England Comment (16) - SEA

On SSSI condition (section 4.3.2), Natural England would like to see those sites identified that are in unfavourable condition as a result of water resources or water quality.

ESW Consideration

We agree this would be of benefit.

ESW Conclusion

Change - The draft SEA Environment Report has been updated to include those sites identified that are in unfavourable condition as a result of water resources or water quality.

Natural England Comment (17) - SEA

On Section 4.4 on ‘Human Health and Population’ Natural England commented that this



section should make reference to the housing that is planned as published in the RSS, and that reference should be made to water efficiency and the Agency's advice that 110 l/p/d pcc represents a 'sustainable level of consumption'.

ESW Consideration

The revised draft uses the latest RSS property growth figures, adjusted for the economic downturn.

The RSS figure of 110 l/h/d for new builds in the East of England has no legal status and there is no mechanism for getting developers to design homes to this water-using level.

ESW Conclusion

Change - The draft SEA Environmental Report has been updated accordingly. New RSS figures have been used and Part G of the building regs and Ofwat's water efficiency target has been forecast into the pcc forecasts.

Natural England Comment (18) - SEA

With respect to the Feasible Options Assessment Matrix in Appendix 3 (pg 186), Natural England questioned the conclusion that the effect on biodiversity for "the scheme" is "not significant", since there was no information on the sites that could be affected, and no clear justification made.

ESW Consideration

Now that a location for this scheme has been identified, the assessment will now be repeated.

ESW Conclusion

Change - The draft SEA Environmental Report has been updated accordingly.

Norfolk County Council

Norfolk County Council (NCC) made comments in two main areas in respect of the Fire Service and Environment.

On the Fire Service NCC highlighted its concerns over any further potential mains pressure reduction programmes, noting that any reduction should not adversely affect the water supply from hydrants that may be needed for fire fighting purposes, nor should it affect the performance of domestic and commercial fire sprinkler systems. NCC wanted to see adequate ongoing provision for increasing mains pressure during an emergency at the request of the Fire & Rescue Service.

On the Environment NCC indicated that there is overall support for the options to address the current and predicted future deficits and support for the objectives to increase water efficiency, minimise water loss and the targets for metering. NCC suggested that it would be beneficial for water companies to seek convergent metering technology and incorporate this with smart meters for gas and electricity



ESW Consideration

With respect to the comments on fire fighting we are understanding of the issue although this does not form part of water resource planning. We do provide additional operational staff to actively manage in event of major fires.

We are pleased that NCC is supportive for the options being put forward in our dWRMP. With respect to metering technology, we attempt to keep up to date with all aspects of intelligent and multi-utility.

ESW Conclusion

No Change – for reasons indicated above.

Ofwat (Water Services Regulation Authority)

The Water Services Regulation Authority (Ofwat) had a number of comments on ESW's plan which it indicated were provisional and would require further exploration over the coming months with ESW, the Environment Agency and other stakeholders. The links between the dWRMP and ESW's draft Business Plan will also need to be considered by Ofwat.

Ofwat indicated that overall its concerns with ESW's plan meant that it could not determine whether the proposed investment is the optimal economic solution, taking into account environmental, social and carbon costs. Specific comments raised by Ofwat and its reporters are presented in the following sections with our response and conclusion to each point as indicated.

Ofwat Comment (1)

Ofwat thought ESW has been too conservative in its approach to risk in its assumptions over outage, and that ESW could assume an outage associated with a greater level of risk such as 10% (as apparently in line with the rest of the industry) instead of ESW's assumed 5%.

ESW Consideration

This point is very similar to that raised in Environment Agency comment (7) and we refer the reader to our earlier comprehensive response on this point. In summary we have now updated our outage assessment in all zones to incorporate higher risk by moving from 5% to 10%, although we disagree that this is in line with the rest of the industry, the majority of which did use 5% in their consultation dWRMP's.

ESW Conclusion

Change – for reasons indicated above.



Ofwat Comment (2)

In relation to headroom Ofwat observed that ESW had chosen to maintain the same level of risk for target headroom throughout the period of assessment, whereas Ofwat believed that ESW should accept a higher level of risk in the future than at present.

ESW Consideration

This comment is similar to that raised in Environment Agency comment (22). Having carefully considered both Ofwat's and the Agency's views on our level of target headroom, we agree that acceptance of a higher level of risk would be appropriate particularly for the latter half of the planning horizon. We have addressed this through our re-working of headroom which updates our dWRMP. Please see our response to Agency comment (22) for more details.

ESW Conclusion

Change - we have modified the target headroom profile in a similar manner to that suggested by Ofwat for the reasons stated by Ofwat.

Ofwat Comment (3)

Also in relation to headroom Ofwat commented that ESW should remove its allowance for vulnerable licences as a result of the Habitats Directive from its headroom assessment, and that in relation to climate change and forecast demand ESW should investigate ways to reduce the uncertainty within its target headroom.

ESW Consideration

The comment is similar to that raised in Environment Agency comment (22) and we refer the reader to our earlier response to this point, which illustrates that ESW has included uncertainty by varying the percentile of headroom over the planning horizon.

ESW Conclusion

Changes – for reasons indicated in our response to Environment Agency comment (22).

Ofwat Comment (4)

Ofwat commented that it needs to see more robust evidence to support ESW's assertion that deployable output is reducing due to climate change. This is because Ofwat views that climate change is in part driving ESW's investment programme. Additionally Ofwat believes that climate change would impact not only on household demand, but also on non-household demand and that this should be considered in the final WRMP.

ESW Consideration

ESW followed the Environment Agency guidance with respect to accounting for climate change implications in estimates of water resource zone deployable output (*Supplementary Guidance to Chapter 8: Climate change implications in estimates of water resource zone*



deployable output. Arnell & Raynard, Nov 2007). Details of the assessments carried out are provided in the dWRMP (Section 6.2 & 6.3 p.241-254). With respect to the assessment for the effect of climate change on surface water in the Northern/Central Zone, ESW has recognised that there was originally limited information available to carry out this assessment and we will update our dWRMP with our more comprehensive assessment.

The impact of climate change on non-household demand has been included in Headroom. (D3)

ESW Conclusion

No change - ESW has followed the EA guidance relating to climate change assessments for the Essex system and does not intend to carry out any further work on this water resource zone, as no further/updated industry guidance is available.

No change - Given the smaller impact of climate change on only some sectors of non-household demand and the uncertainty in any such estimates we believe this is best considered within headroom

Change - ESW has updated the assessment of the effect of climate change on the River Waveney in the Northern/Central Zone in the WRMP.

Change – As evidence that climate change is not driving investment ESW has produced a Supply Demand Balance under a ‘no climate change’ scenario. This work was presented to Ofwat at a meeting on 30th October 2008 and has been included in the updated dWRMP.

Ofwat Comment (5)

In relation to ESW’s bulk transfers with Thames and Anglian Water, Ofwat noted that the volumes differ between the companies plans.

ESW Consideration

The assumptions for the bulk supply from TWU to our Chigwell Row works of 91 Ml/d is exactly the same in both companies draft WRMPs. The extract below comes from Thames Water’s draft WRMP.

4.1.4 Bulk supplies

Bulk supplies are transfers of either raw or treated water into or out of the Company’s supply area.

Thames Water has a number of bulk supply agreements with neighbouring water companies. Most of these agreements are in perpetuity and terminable by mutual consent with variation only possible through renegotiation.

All our neighbouring companies were consulted prior to the production of our dWRMP and the bulk supply situation discussed. The following provides the current position and the corresponding assumptions built into Thames Water’s dWRMP.

Whilst there are some minor bulk supply import/exports in the Thames Valley, London is the



only WRZ where bulk supplies are a significant factor in the supply-demand balance.

The particular transfers (raw and treated water) are detailed in Table 22.

WRZ	Imports	Exports
London	None	10 MI/d raw water to Veolia Water 10 MI/d treated water to Veolia Water 91 MI/d (118.2 MI/d peak) raw water to Essex & Suffolk (In DO)
SWOX	0.1 MI/d from Severn Trent (In DO) 2.1 MI/d from SWA (5 MI/d on peak) ?NB- internal transfer	
Kennet Valley	None	None
Henley	None	None
SWA	None	2.1 MI/d to SWOX (5 MI/d on peak) ?NB- internal transfer
Guildford	None	2.3 MI/d treated water to Veolia Water

Table 22 Bulk Transfers. Imports and Exports

Our export to AWS accords with their plan. Our import from AWS we class as an import but we believe AWS treat as a non-household supply, which is how it is charged.

ESW Conclusion

No change - There is no discrepancy between TWU's plan and ours.

Change - We have met with AWS and tried to agree on a common view.

Ofwat Comment (6)

Ofwat commented that ESW had pre-selected a programme of compulsory metering in its baseline forecast of demand, but that it expected that only a continuation of the optional metering programme and metering of new properties should be included. Ofwat indicated that any enhanced metering programme would need to be justified by economic appraisal and options assessment.



ESW Consideration

This will be covered in more detail in the Final Business Plan.

ESW Conclusion

Change - A baseline has been constructed only using optant metering.

Ofwat Comment (7)

Ofwat noted that Atkins independent review of the dWRMP has found a number of technical issues to do with ESW's process for appraising feasible options to resolve the deficit in the Essex resource zone, and that these need to be resolved for the final plan.

ESW Consideration

We assume this comment relates to the points made in the accompanying appendix to Ofwat's consultation response, in which case the various responses are covered within the remainder of this section.

ESW Conclusion

No action required other than in responses to the remaining points.

Ofwat Comment (8)

In relation to the indicated change in the level of service for hosepipe bans since the last periodic review, Ofwat indicated that ESW should indicate in its final Plan whether this has had an impact on deployable output and whether or not it is supported by customers.

ESW Consideration

The change in level of service for a hosepipe ban will not have any effect on deployable output as under the water resource planning guidance definition of deployable output (*Review of Water Company Yields*, Environment Agency, 1998), this should represent the "*constant rate of supply that can be maintained from the water resources system except during periods of restriction*". A hosepipe ban is considered to be a restriction and is therefore outside this definition and not included in the deployable output calculation. A separate assessment is carried out to determine whether ESW complies with its defined levels of service under the calculated deployable output. Details of this assessment are reported in the dWRMP in Section 3.1.3 on p41.

Our customer research showed that whilst there was no appetite to pay more for increasing the return period out from 1 in 20 years to 1 in 50, the small cost benefit of having an increased frequency at 1 in 15 years wasn't seen as beneficial. In reality there is virtually no difference in resources required for 1 in 20 or 1 in 25years and any differences between the 2 options are too small to show up given the nature of all of the uncertainties surrounding demand / supply forecasting.



ESW Conclusion

No change – for reasons indicated above.

Ofwat Comment (9)

Ofwat questioned ESW's indicated loss of 1.2 MI/d of DO due to saline intrusion at Southwold, indicating that ESW had not provided any evidence to support this. Assuming the loss is justified Ofwat expects ESW to determine a solution using a full economic options approach including social, environmental and carbon costs.

ESW Consideration

This comment is very similar to Environment Agency comment (5), where we commented that page 53 of the dWRMP specifically indicates that investigations were underway (at the time of writing the document) to determine the effects on water quality. Subsequent to the start of consultation on the dWRMP our investigations have now been completed and have confirmed that the sources are indeed at risk from being impacted irrevocably by saline intrusion as a result of the Agency's strategy to no longer maintain the local Blyth sea defences. We are currently evaluating a series of options to address this issue and intend to report on these in the final WRMP. These options will be subject to cost benefit and risk analysis inline with Ofwat's recommended methodology (PR09/12).

ESW Conclusion

Further work to be detailed in the Final Business Plan.

Ofwat Comment (10)

On demand, Ofwat reminded ESW that it expected ESW to provide updated forecasts following resolution of issues with Experian's population estimates.

ESW Consideration

ESW had already stated its commitment to updating the population forecasts.

ESW Conclusion

Change - The revised draft WRMP uses new population and property forecasts.

Ofwat Comment (11)

Ofwat commented that Table WRP9 for Normal Year should be a normalised version of the dry year final planning scenario – but that it was not clear this was the case and that the correct data should be provided.



ESW Consideration

We believe this query has arisen from the leakage figures on table WRP4 not matching those on Table WRP9, which has been completed as a normalised version of the dry year final planning scenario. Table WRP4 contains a minor error in supply pipe leakage which has now been corrected

ESW Conclusion

This has now been resolved.

Ofwat Comment (12)

Although accepting of ESW's view, Atkins (Ofwat's reporter team) would like a more detailed substantiation of the Company's assumption that demand in the normal base year for Essex was constrained due to request for wise use of water and external influences including local radio, television and newspapers covering the hosepipe bans in adjacent water companies. Ofwat believe that this demand suppression would also impact on non-household use and that this should be take account of in the final WRMP.

ESW Consideration

The normalisation of demand is a somewhat subjective procedure as relatively little quantitative data is available on which to base it. ESW had no evidence of any demand suppression on non-household use and therefore it would have been a subjective estimate to have included such a factor.

ESW Conclusion

The revised forecasts have now been re-based to 2007/8 which was a normal year and therefore the issue has been removed.

Ofwat Comment (13)

Ofwat expects ESW to provide more detail on demonstrating the general process for normalising demand accepting that Atkins is content with the general process for doing so.

ESW Consideration

The revised forecasts have now been re-based to 2007/8 which was a normal year and therefore the issue has been removed.

ESW Conclusion

No further action.



Ofwat Comment (14)

Ofwat has suggested that ESW should investigate why the unmeasured and measured supply pipe leakage per property in Essex is twice that in Suffolk, subsequent to employing a new calculation method since 2006.

ESW Consideration

The new methodology has produced results consistent with (although not exactly the same as) the previous estimates. Leakage levels in Suffolk are very low because of the pressure, soil types etc and therefore it is not surprising that supply pipe leakage is similarly much lower in Suffolk. If Essex supply pipe leakage levels were applied to Suffolk, this would result in no distribution losses or even supply pipe leakage exceeding total leakage.

ESW Conclusion

No change – for reasons indicated above.

Ofwat Comment (15)

Ofwat has indicated that ESW should improve its non-household demand forecasts by disaggregating to resource zone level and considering splitting by Standard Industrial Classification 2003 category.

ESW Consideration

NERA has carried this out for the revised draft.

ESW Conclusion

Change - WRP 8 tables in revised draft follow the guidance.

Ofwat Comment (16)

Ofwat commented that it was not clear that ESW had included the impact of ongoing water efficiency savings in its baseline demand forecasts and that these should be factored in according to those Ofwat will set in Autumn 2008, into the final WRMP.

ESW Consideration

The microcomponent forecasts implicitly include the results of our ongoing baseline water efficiency programme. The consultation on water efficiency targets was not published until after submission of the draft WRMP and therefore the level of water efficiency required to meet these targets was not included.

ESW Conclusion

The plan has been amended to explicitly demonstrate the level of water efficiency savings



arising from Ofwat's water efficiency target for the company.

Ofwat Comment (17)

In relation to Options Appraisal Ofwat noted that ESW intends to monetise property-based dis-amenity and traffic related impact costs using the BAG assessment in the final WRMP. Atkins noted that ESW had not included social, environmental and carbon costs for leakage reduction schemes but that these should be included in the final WRMP.

ESW Consideration

The new SELL methodology has been used which includes these costs.

ESW Conclusion

Change - New methodology for SELL now used.

Ofwat Comment (18)

Atkins noted that it was not clear how stages 11, 12 and 13 of the EBSD (Economics of Balancing Supply & Demand) guidance had been taken account of in determining the optimal solution and that this should be explained within the final WRMP.

ESW Consideration

We agree that further clarity is required regarding ESW's consideration of stages 11, 12 and 13 of the EBSD guidance. This has been amended in the updated WRMP.

ESW Conclusion

Change – ESW has amended as indicated above.

Ofwat Comment (19)

Atkins noted that it was unable to audit for each scheme the underlying cost assumptions, replacement maintenance frequencies assumed, and net present cost calculations. Ofwat expects ESW to resolve these issues for its final plan.

ESW Consideration

This comment is odd since ESW has been and always remains available for audit, and indeed had asked the Reporter on more than one occasion when these elements would be covered. We suggest that it is for Ofwat's Reporter Team, rather than ESW to resolve the issue of not having audited these elements. It should also be recognised that some of these elements have subsequently been audited within the wider draft Business Plan process.



ESW Conclusion

No change – for reasons indicated above.

Ofwat Comment (20)

Ofwat indicated that ESW’s assessment of the costs and benefits of installing water efficient devices should be based on a holistic approach. For example this could be via installing water efficient devices at the same time as meters to improve cost effectiveness, or installing devices on the back of other reasons for visiting customers. Ofwat would like ESW to take this account in its re-evaluation of the optimal solution.

ESW Consideration

Some options for water efficiency such as those described above were included in the evaluation process but were screened out as not economic. However, we are re-appraising our options as part of our consideration of how to meet our future targets.

ESW Conclusion

Changes – All water efficiency options now form part of our baseline to achieve Ofwat’s water efficiency target.

Waterwise

Waterwise provided a joint and largely generic response to the dWRMP’s of ESW, Bristol Water, Northumbrian Water, Portsmouth Water, Southern Water and United Utilities, with specific comments pertaining to ESW being provided in an Annex.

Waterwise’s generic responses contained within its main letter were in relation to issues with the planning process, climate change and uncertainty, metering and affordability, leakage, and water efficiency. Many of these responses were given at a policy and/or political level. For example on the planning process Waterwise indicated that “it was questionable whether the dWRMP process is of any benefit given that only three months are provided for consultation” and given that the public “cannot grasp the true understanding of the impacts of planning decisions”

ESW General Comment

In view of the nature of Waterwise’s generic comments and the fact that in many instances it is not possible to disentangle the comments that relate to specifically to ESW, we have taken the view that it is not appropriate for us to comment, particularly as a number of the responses are policy and/or politically orientated. However, our view is that it is likely that any other points have been addressed by our responses to similar comments made by other respondents. Additionally we would be pleased to meet with Waterwise to discuss their generic comments should they wish to do so.



The specific comments raised by Waterwise in the annex to its letter are presented in the following sections with our response and conclusion to each point as indicated.

Waterwise Comment (1)

Waterwise indicated that overall it found that ESW's dWRMP was "generally easy to follow, but found it difficult in particular to find detailed information about pcc".

ESW Consideration

The pcc forecast is provided in the tables and section 4.6 gives detail on the forecasting methodology.

ESW Conclusion

No changes – for reasons indicated above.

Waterwise Comment (2)

Waterwise commended ESW for "considering a range of options in its WRMP, and for relatively clearly explaining the logic behind their final choice".

ESW Consideration

We are pleased that Waterwise has recognised the extensive work completed to appraise options with estimates of costs and savings based on real projects, and that the logic has been clear.

ESW Conclusion

No action.

Waterwise Comment (3)

On metering, Waterwise was not clear on why ESW is "waiting until AMP6 to compulsory meter customers in the Essex area".

ESW Consideration

There is no economic or environmental case to bring universal metering forward. See comment in EA section for detail.

ESW Conclusion

No change



Waterwise Comment (4)

Waterwise indicated that “it was commendable that ESW are thinking about sub-metering and intelligent metering”.

ESW Consideration

This has now generally been removed due to it not being cost beneficial at the current time.

ESW Conclusion

Change - Reference removed from revised draft.

Waterwise Comment (5)

Waterwise was disappointed that ESW, “as one of the leading companies on water efficiency”, have “not proposed even one large-scale water efficiency programme”.

ESW Consideration

The proposed h2eco programme is for 15,000 completed retrofit audits pa. It should be noted that to achieve 15,000 H₂eco audits per annum requires mailing 45,000 households per annum. Over the proposed 5 years this equates to 300,000.. Added to the households already offered audits, the 30,000 customers who will be offered the self audit project over the 5 years and the 30,000 who will be offered H₂eco audits through the base programme, it is unlikely that this project could be extended much further as this will mean almost 100% of households have been offered audits To extend our audit programme further would involve revisiting households and the analysis above has demonstrated that this has a significantly higher AISC.

In a letter dated 12th September to Defra Waterwise clarified that this comment was with reference to retrofit projects. H2eco is a combination of a self audit and retrofit, and the main costs and savings coming from the retrofit component, so the comment remains inappropriate. Other retrofits such as ecoBETA are proposed as a wider trial because the economics has been based on a project in an area where the highest proportion of retrofits was likely to be possible. In other areas the take-up and fit rates will be more similar to H2eco and so the economic case is less favourable. Hence we have proposed further work to confirm the figures.

ESW Conclusion

No changes – for reasons indicated above.

Waterwise Comment (6)

On water efficiency Waterwise commented that although ESW’s programmes are “very well designed” it is “unfortunate” that these “have not been scaled up to such a level that could yield significant savings, and which would benefit from the economies of scale”.



ESW Consideration

Most of the programmes have been scaled up significantly. For example, the H2eco project has been scaled from 1500 pa to 15,000 pa.

ESW Conclusion

No action.

Waterwise Comment (7)

Waterwise commented that they were confused as to why ESW is “waiting to compulsory meter in AMP6 if there is already a deficit projected (in Essex) for AMP5”, particularly since the Abberton Scheme is not due until 2014.

ESW Consideration

See earlier response

ESW Conclusion

No change

Waterwise Comment (8)

Waterwise indicated that it was unclear as to why ESW was not conducting more commercial audits before completion of the Abberton Scheme, since “audits cost half as much as the reservoir (see page 361)”.

ESW Consideration

ESW has previously completed audits with all the large customers and therefore the volume of water that can be saved through working with the smaller businesses is very small compared with the yield from a reservoir.

Waterwise’s comment regarding costs is totally wrong and there is no reservoir indicated on page 361.

ESW Conclusion

No action required.

Woodland Trust

The Woodland trust sent a generic response on all the water companies’ dWRMPs, indicating concern that developments for water resources could impact upon ancient woodland and



other semi-natural habitats. The trust believes that more emphasis needs to be placed on protecting woodland when considering water resource management options and that loss of woodland from development and impacts on habitat for example, via increased pollution, changing water tables needs to be evaluated.

ESW Consideration

ESW understands the concerns of the Woodland Trust. Where the location of a feasible option was known, the effect on ancient woodland was considered and will be considered for those feasible options where the location has been confirmed since the draft SEA was undertaken. Additionally, the impact on woodland and its associated habitat is always considered at the project EIA stage.

ESW Conclusion

Change - The draft SEA Environmental Report has been updated accordingly.

Waveney District Council

Waveney District Council's response was dated three days after the close of the statutory consultation period but is being considered under this Statement of Response to Consultation.

Waveney District Council made comments on four main areas; namely the natural environment, the North Lowestoft Groundwater Scheme, levels of service and universal metering. These comments are summarised in the following sections with our response and conclusion to each point as indicated:

Waveney District Council Comment (1)

The Council indicated that "there was no direct mention of how to ensure the natural environmental demand for water has been taken into account" and pointed to a previous Environment Agency report that stated that to meet the requirements of the Habitats Directive in respect of Natura 2000 sites, water abstraction would need to be reduced by 250 Ml/d, with most coming from public water supply. The Council commented that "the environmental demand needs to be taken into account especially as the North Lowestoft Groundwater scheme is investigated".



ESW Consideration

The Council may not be aware that ‘environmental demand’ is effectively already taken into account within existing Environment Agency processes, most notably within its Catchment Abstraction Management Strategies (CAMS), where an environmental allocation is determined for each Water Resources Management Unit. This means that an environmental allocation has been taken into account when deriving the resource availability status of each catchment. Additionally as part of any abstraction licence application (or renewal) the Agency has to be convinced of both the sustainability of abstraction and absence of effects on any local designated sites before it will consider granting the licence.

ESW Conclusion

No change – for reasons indicated above

Waveney District Council Comment (2)

In respect of the North Lowestoft Groundwater Scheme the Council indicated that the scheme “needs to be carefully investigated so as not to aggravate the impacts of climate change on groundwater resources” The Council alluded to the potential negative impacts with increased groundwater abstraction as a result of future climate change.

ESW Consideration

This is similar to Natural England’s comment (6), where we indicated that this option is still at a very early conceptual stage of consideration with the environmental effects not yet having been considered since the necessary desk study work has yet to be completed.

We do not view the effects of climate change as necessarily being any more onerous under any proposals we have for the North Lowestoft Groundwater scheme than with our existing abstractions. The only possible exception to this is the risk of saline incursion from which we have received advice from the British Geological Survey which we intend to consider during the course of our investigations.

ESW Conclusion

No Change – for reasons indicated above.

Waveney District Council Comment (3)

The Council gave a comparison of ESW’s levels of service with those of some other water companies and pointed to changes in demand and water use as a result of climate change. The Council indicated that “restrictions such as hosepipe bans can provide flexibility in water resources management”, and commented that “to provide more flexibility in managing water resources non-essential outdoor use bans based on river flow rates, groundwater and reservoir levels could be investigated”.



ESW Consideration

We disagree with the assertion that demand restrictions should somehow be used as a hydrological regulation tool. We do not take the decision to impose restrictions lightly and our customer research shows the opposite view to the Council's; and a strong lack of acceptance of the need for non-essential use bans in all but the most severe of circumstances.

We support the view that storage is likely to be the answer for 'climate-proofing' whether this be utilising reservoirs or the storage provided by underground rock media.

ESW Conclusion

No change – for reasons indicated above

Waveney District Council Comment (4)

The Council indicated that on universal metering "it is important that the affordability of water is addressed" and commented that this had not been covered in ESW's dWRMP. The Council also pointed to the use of tariffs to address affordability and pointed to initiatives in Australia regarding seasonal tariffs.

ESW Consideration

These issues are addressed in our Business Plan rather than our WRMP.

ESW Conclusion

No change

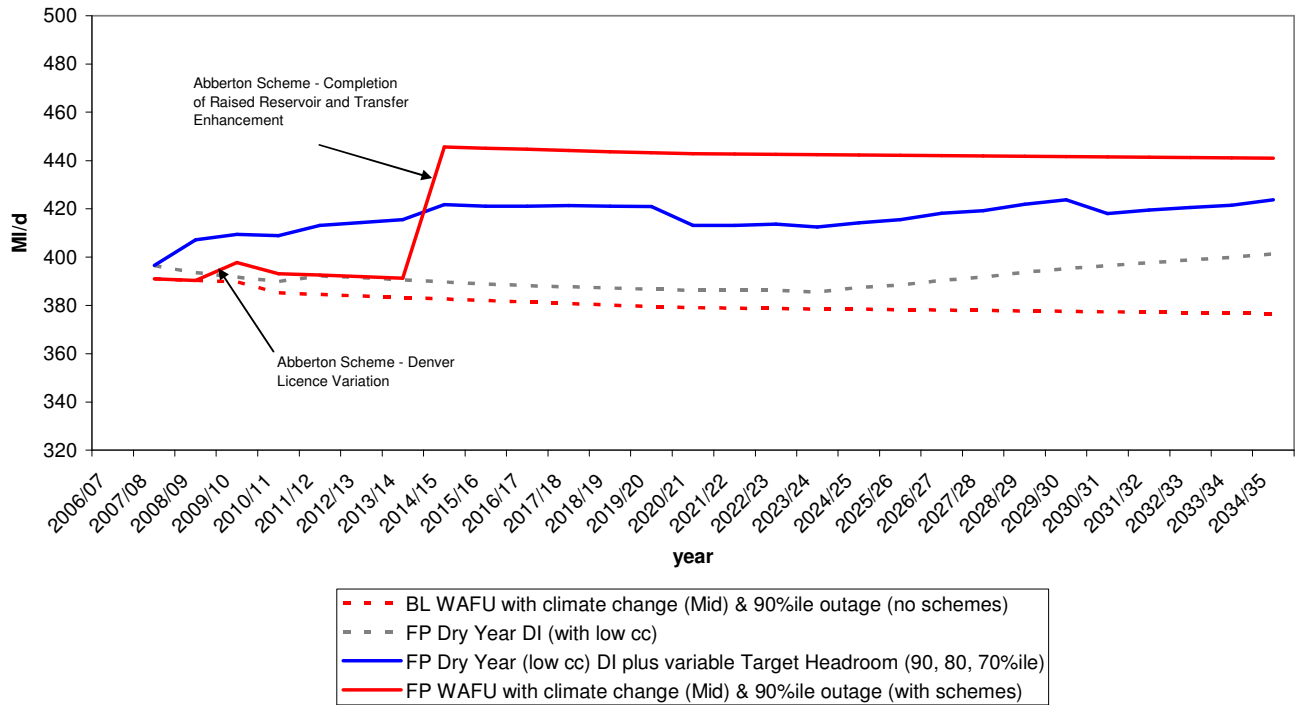


APPENDIX A

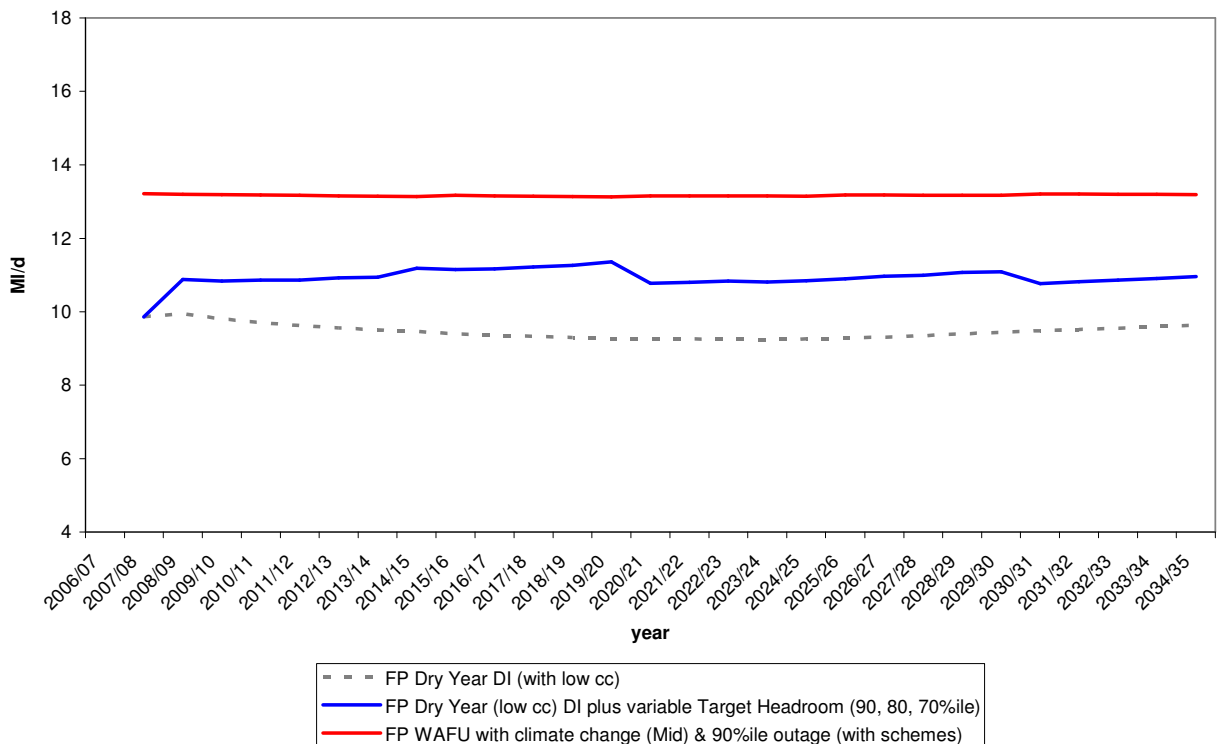
REVISED FINAL PLANNING SUPPLY DEMAND BALANCE GRAPHS FOR ALL RESOURCE ZONES



Essex Resource Zone - Final Planning Supply Demand Balance

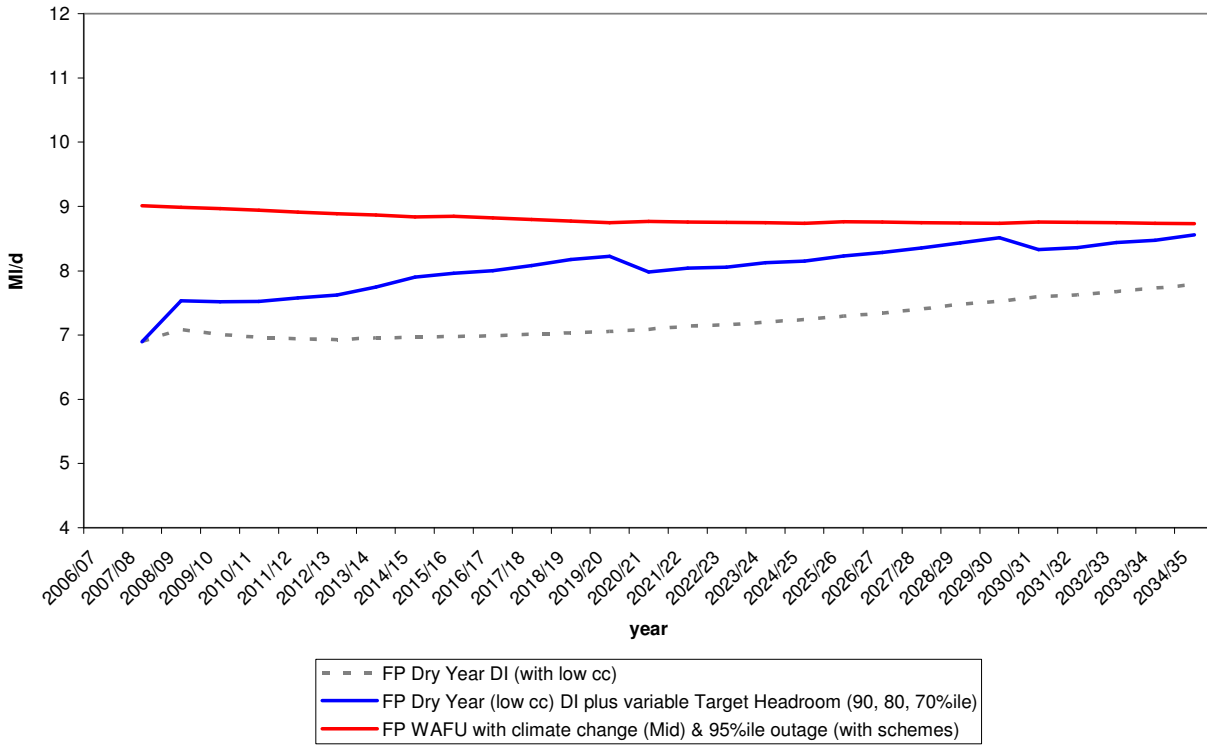


Suffolk Blyth Resource Zone - Final Planning Supply Demand Balance

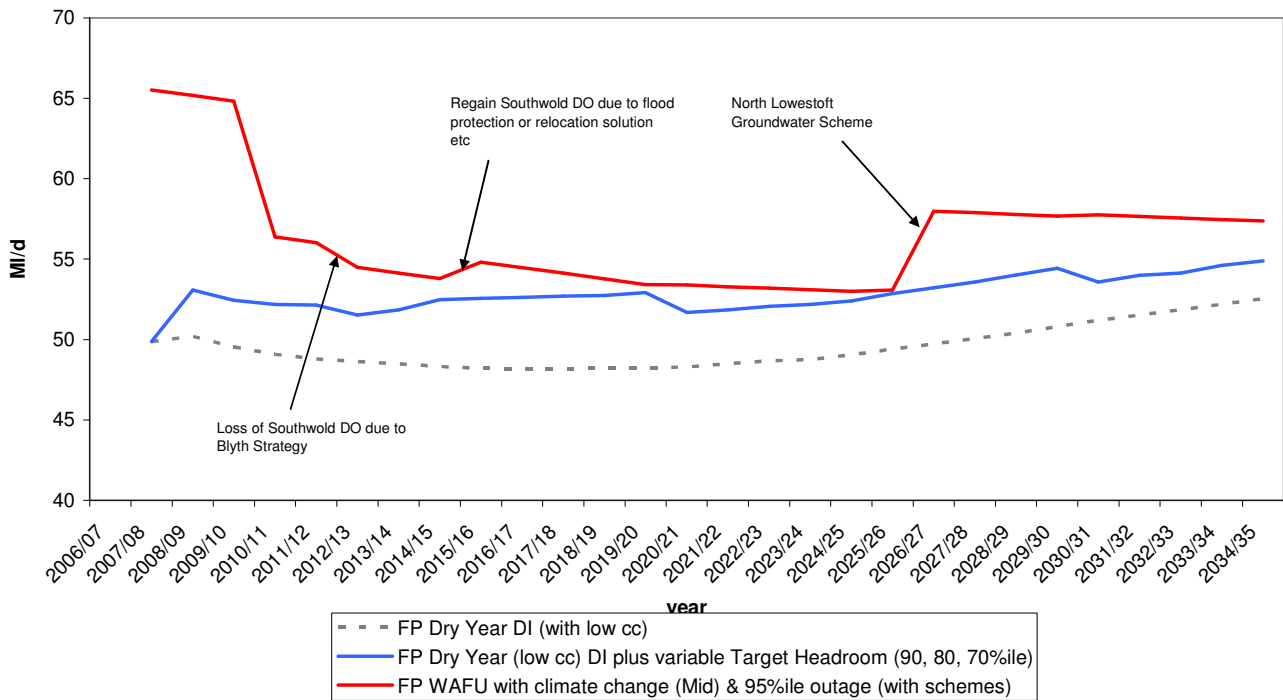




Suffolk Hartismere Resource Zone - Final Planning Supply Demand Balance



Suffolk Northern/Central Resource Zone - Final Planning Supply Demand Balance





Explanation of Changes made to the Essex Supply Demand Balance Subsequent to the Consultation dWRMP

Dry Year DI (with low climate change)

The DI forecasts have been updated with the latest population and non-household forecasts etc and now incorporate the demand savings from a number of water efficiency projects included in our baseline in order to meet Ofwat's water efficiency targets.

WAFU (with climate change)

The deployable output element of WAFU remains unchanged. The outage element of WAFU has been recalculated

Sustainability Reductions

A sustainability reduction in relation to the Blackwater Estuary has been confirmed by the Agency and modelled as 4 MI/d, being applied from 2010 onwards.

Target Headroom

In response to consultation responses a number of changes have been made to our target headroom assessment which can be summarised as follows:

- Removal of S1 and S2 – vulnerable surface water and vulnerable groundwater licence components; as per guidance.
- Revision of components D2, D3 and D4 as required due to updated DI forecasts
- Removal of S9 uncertainty of new source for UTMRD.
- Revised leakage and metering elements of headroom component D4 (uncertainty of demand management measures) using the updated DI forecasts. Additional use of revised DI forecasts to calculate the water efficiency elements of D4 which now assume 0% saving in 10% of years (minimum), 0.25% saving in 80% of years (best estimate) and 0.5% saving in 10% of years (maximum).
- Change in percentiles used after Monte Carlo analysis to adopt a variable (increasing) risk profile throughout the planning horizon; namely 90th percentile until 2019/20, 80th percentile from 2019/20 to 2029/30 and 75th percentile from 2029/30 onwards.

Options

Removal of the UTMRD as a resource option due to the previously identified deficit in the 2020's now having been removed.