



Technical Stakeholder Meeting: Environmental Assessment and Demand Management Options.

Date: Monday 19 June 2017

Time: 10:00 to 15:00

Venue: Crowne Plaza Hotel, Caversham Bridge, Richfield Avenue, Reading, RG1 8BD

Meeting Minutes

1. Welcome and Introduction

Chris Lambert welcomed everyone to the meeting.

Chris provided an overview of the baseline supply demand position that Thames Water (TW) is seeking to address in the draft Water Resources Management Plan 2019 (WRMP19). Chris set out the forecast deficit in London Water Resource Zone (WRZ) of > 400 MI/d by 2045 and around 800 MI/d over the 80 year planning period. Chris also explained that there are significant deficits forecast in some of the Thames Valley, namely Swindon and Oxfordshire (SWOX) and Slough, Wycombe and Aylesbury (SWA) WRZs.

Chris also provided an overview of the work that has been undertaken to date to explore new resource options, the engagement throughout this work and the reports published. In summary, since Autumn 2014 TW has examined a wide range of options, screened options on a range of criteria to produce a shortlist of options, called the constrained list of options. The following reports have been produced and are available on TW's website (www.thameswater.co.uk/wrmp):

- Methodology Reports
- Options Feasibility Reports
- Screening Reports
- Constrained List of Options

2. Assessment of environmental and social impacts

John Sanders from Ricardo led the morning session. The objectives of the session were to:

- recap on the approach to assess the environmental and social impacts of the WRMP
- set out the key findings from the Strategic Environmental Assessment (SEA), Habitats Regulations Assessment (HRA) and Water Framework Directive (WFD) Assessment of the options in the constrained list
- explain the layout of the assessments to assist stakeholders in their review of the reports
- discuss and gain feedback on the assessment findings

Key points were as follows:

- The approach is compliant with statutory requirements, both European and national legislation, and the statutory framework forms the core of the assessment approach.
- The SEA provides the overarching structure and considers the beneficial and adverse effects against the defined SEA topics.



- The performance of each option is considered against the HRA, to ensure no adverse effect on European designated conservation sites, and the WFD, to ensure no adverse effects on WFD water bodies. The HRA and WFD feed into the SEA - as well as being statutory assessments in their own right.
- The assessment is undertaken for all constrained options elements, programmes of options in each WRZ and for the plan as a whole. To date, assessments have been carried out on the option elements only.
- TW has engaged with stakeholders on the methodological approach and published a methodology report and the SEA scoping report for comment.
- Initial environmental assessment of the feasible options has been reported in the option feasibility reports using a RAG approach.
- The fine screening report includes a summary level assessment and cumulative effects reported as a series of colour coded assessments.
- More detailed environmental assessment has now been carried out on each option element taking into account the more detailed information provided in Conceptual Design Reports for each constrained option. These Conceptual Design Reports include environmental mitigation measures which have been costed and taken into account in carrying out the SEA, HRA and WFD assessments.
- The constrained options are assessed at an option element level. An option element is one of the component parts needed to ensure treated drinking water can be provided to customers, e.g. an option can comprise multiple component parts as follows: the water resource, the conveyance of the resource, the treatment of the resource and distribution of the treated water. All relevant elements need to be considered when looking at an option.
- The environmental assessment of the option elements has been used to create two environmental metrics which are used in the programme appraisal process to represent the environmental performance of each option element. The 2 metrics reflect the beneficial effects and the adverse effects against each SEA topic. The metrics are framed on a 0-10 scale to input to the models. The effects include both temporary and permanent effects and are the residual effects following application of mitigation and enhancement measures. Note these are not a replacement for the environmental assessment and further detailed SEA, HRA and WFD assessments will be carried out on the options and the programmes of options that are developed as part of the programme appraisal process.

Natural England (NE): Are the Conceptual Design Reports (CDRs) available? In particular NE are keen to see information on mitigation. **TW:** The CDRs have been provided to regulators. TW is considering how to release this information more widely as the reports contain detailed system and option information.

GARD: In what guidance or documentation is this numerical system recommended? **Ricardo** confirmed that the approach has been developed for WRMP19 for Thames Water with the objective of ensuring environmental assessment can be reflected in the programme appraisal modelling explicitly alongside other information such as cost and resilience. This has been shared with stakeholders previously for comment.

GARD: The HRA and WFD assessment is effectively a risk assessment taking account of the magnitude and likelihood, is that correct? **Ricardo:** That is correct – the HRA and WFD assessment identifies the likelihood of adverse effects and whether the magnitude of the effect is sufficient to lead to (a) a likely significant effect on a European site (for the HRA) or (b) deterioration of WFD status between status elements for a given WFD water body .



SE Rivers Trust: Did you consider the use of Natural Capital and discuss this with stakeholders? **TW** has undertaken some work on environmental valuation and the use of Natural Capital Accounting to inform WRMP. This work concluded that at this stage the methodology is not sufficiently mature and valuation data are generally lacking to complete a robust assessment. TW will work with regulators and other companies to develop this approach, and an UKWIR project is underway to examine how natural capital approaches can be made more robust for future plan development.

RWE: Have you considered the risk presented by future WFD targets. **Ricardo:** We have completed the assessment against the current status (2015 status assessment) and targets set out in the 2015 River Basin Management Plans. There is uncertainty over whether these targets might change in the next round of River Basin Management Plans, but the existing plans seek to achieve the overall WFD objective of good ecological status or potential so the risk of material changes is considered low.

TRT: You mentioned that the SEA takes account of the potential effects on HRA designated sites, could you do the same for WFD? **Ricardo:** We do this through the WFD assessments which have been carried out at for each WFD water body that the option may affect. We also consider how any adverse effects identified can be mitigated and include these mitigation measures in the Conceptual Design Reports.

TRT: An issue with numerical assessments is that scores could potentially cancel each other out.

Ricardo: In the environmental metrics we separate beneficial and adverse effects to avoid this. We also review and appraise the output of the model to ensure it is meaningful and sensible, and the options and programmes that are determined using the model outputs are subject to the same level of detailed assessment as for the option elements

TRT: Models provide an output but these needs to be interpreted, and you need a panel to do this.

TW: We agree the models are decision support tools; they provide analysis and information but not the answer. TW has convened an Expert Panel to review the output of the model. Dr Bill Sheate is the environmental expert on the Panel.

Bill Sheate: It is important to separate the positives and the negatives to avoid neutralisation of impacts, as these impacts are not equivalent. The programme appraisal model is an input to decision making, it does not make the decision. An important issue is the potential for cumulative effects, it is important to look at the combination of options at a programme level.

GARD: I do not understand the value of splitting options into elemental parts. **Ricardo:** For some options, the elements are fixed, but there are others where choices can be made, e.g. water could be treated at a different treatment works or conveyed by different pipelines – so the component approach allows the modelling to evaluate different combinations of elements and identify the best combination.

Bill Sheate: Assessment of the elements of an option as component parts allows more detailed assessment.

Feedback on Key Assessment Findings - Facilitated Table Discussions and Wall Display Discussions **General:**

- Overall stakeholders understood the assessments and the presentation of them. Stakeholders requested a numbered key and tidying up of the summary assessment information. The transparency provided in the assessment was also supported.
- Support that information and assessments have been carried out at this stage in the process to feed into decision-making.
- Clearer differentiation is required between temporary and permanent effects.

- Stakeholders wanted to understand how TW will share and summarise the details of schemes and the environmental assessments.
- Suggestion made that links could be included within the commentary boxes to the background information used. This would enable the reader to get further background detail information.
- How to ensure confidence in the accuracy of the environmental assessment - Ricardo have been appointed as consultant experts, they have produced all the environmental information and have an internal quality and review process using a 'pair-wise' check of the scoring to ensure consistency across the various options. The information has been reviewed by Bill Sheate (as the expert panel member for environmental issues) and is being reviewed by regulators and will be made available to stakeholders.
- Ecosystems services are included in this approach but it does not go as far as NCA, this is an area for future development as there are not sufficiently robust valuation at present to apply NCA for the 2019 WRMP.
- The scale and duration of some options compared to others was noted.
- The requirements, and current focus on air quality, was noted. Ricardo confirmed that air quality effects on local people is covered in the SEA objective on human health.
- Some stakeholders commented that they liked the option element approach as it enabled elements to be assessed on their own and could identify which parts may be beneficial or not and could then "pick and mix".
- It was noted that it is helpful to separate adverse and beneficial effects.
- It was noted that some of the assessments are based on low certainty of the effect and this should be taken into account when comparing the impact of each option element.

GARD – how are risks taken into account in the assessments? Magnitude is assessed but where is the likelihood of the effect occurring taken into consideration in order to assess risk? The level of certainty around the assessment has been reported but can more be done to take account of the risk (i.e. likelihood x magnitude of effect)?

GARD – is it right that value of environmental receptors is linked to designated status (e.g. international designated sites are accorded a higher value than a non-designated site)? Just because a site or feature is not designated does not necessarily mean it is not valued.

ARK - how does the assessment process take account of the benefits of providing resources further up the catchment that can provide flow benefits to the river system downstream?

Severn Thames Transfer

- **CCT** stated that they disagree with the SEA assessment completed.
- **CCT** questioned whether the canal conveyance option would have shown greater environmental benefits than the pipeline option if the canal option had been screened in for SEA assessment.
- **NE**, whilst not a showstopper, there are concerns regarding the construction of a pipeline through protected landscape of the Cotswolds.

Reuse/Desalination

- **NE** stated that part of the Lower Thames Tideway (downstream of any of the options being considered by TW) will be designated as a Marine Conservation Zone (MCZ) and that TW needs to complete a MCZ assessment, following a similar process to Natura 2000 sites. TW will need a MCZ licence from the MMO. NE is writing a paper on MCZ assessment and process and will circulate this to TW.



- **Several stakeholders** asked whether there was an environmental upper limit to the amount of reuse and desalination that could be carried out in the Middle Thames Tideway. Ricardo explained that the cumulative effects of reuse and/or desalination had been investigated in relation to potential risks of increased salinity – a report is being finalised which summarises the assessment findings. The report sets out that the risks are likely to increase above a cumulative abstraction volume of around 300 MI/d.

Teddington Direct River Abstraction

- **CPRE** questioned the assessment of the vehicle movements in particular the comparison between Teddington and the Abingdon reservoir option. Furthermore the definition of a vehicle movement was questioned to ensure it was comparative between options (HGVs only quoted in some option whilst others refer to total vehicle movements).
- Query was raised regarding the dust and noise assessment and how this can be classed as long-term and permanent.
- **Adrian McDonald** also queried the health impact assessment, and raised concern around pathogenic bacteria indicators and suggested further studies are required as to possible effects on water-based recreation.
- **ICE** questioned the proposed design of the scheme and challenged the need for the compensation flow.
- **TRT** queried the availability of land at this site and achieving public acceptance
- Assessment of effects as 'Permanent' in relation to objective 2.1 was queried as this mainly relates to construction.
- It was noted that even with mitigation there would be residual impacts (in relation to construction effects) and that this is reflected in the assessment
- It was queried as to whether there was double counting of construction effects for objectives 2.1 (population and human health) and 6.1 in relation to effects of road traffic?

Abingdon Reservoir

- It was noted that the short term construction impacts are major but so too are the long term benefits.
- **NE** – the assessment is in line with expectations, i.e. a mix of both major adverse and major beneficial effects. The movement of materials by road was identified as a significant concern and the estimation of HGV movements is substantial.
- **VoWH DC** asked whether the assessment takes account of local policy and safeguarding criteria
- **NE** stated that overall it had no significant issues with TW options, including the reservoir option, with the exception of the STT pipeline
- **NE** view was that landscape effects were not of a major concern with opportunity for biodiversity gain through landscaping of the reservoir.
- Visual impact of the reservoir was raised as a concern – more detail required on the height of the bund to understand the potential effects.
- It would be useful to reference the fact that land is also safeguarded to support Environment Agency's proposal for a Flood Alleviation Scheme as set out in the adopted local plan 2031 (Core Policy 14)
- The loss of residential properties and the associated distress should be more explicit in the assessment of adverse effects.
- **ARK** - employment from visitor centre is not as important as loss of houses and compulsory purchase of land – compulsory purchase is a well being issue and not just a cost issue.

Catchment Management



- **NE** – options seem to lack ambition and not recognising the move to “localism”. Catchment management schemes can provide resilience and risk reduction – not just addressing water quality issues.
- **NE** - Consider a broader approach to catchment management rather than just a focus on metaldehyde/pesticides or nitrates, e.g. incorporate better soil management that will help water storage in soils – reduce overland flow and sediment load into reservoirs, etc. Focus on pathways of pesticide inputs to water rather than their source.
- **NE** - More integrated stronger partnership to taking more joined up and value added catchment benefits. Also, measure these additional benefits in the “beneficial effects” e.g. reduce soil erosion, improve soil structure, reduce sediment in river and therefore water treatment chemical requirements.

Demand Management

- Is there potential multiple counting of impacts? e.g. vehicle emissions associated with metering are assessed under both population and human health and air quality?
- Can vehicle emission effects be mitigated by using electric vehicles to reduce impact?
- The scale of possible measures for tackling leakage seems very small. The task of tackling leakage must have many more elements to it which do not seem to have been covered?
- Why is there not a more detailed breakdown of leakage control as with the metering options? Would there not be more adverse effects associated with leakage control? i.e. leak repairs in central London area?

Stakeholder views will be collated from the workshop and also from subsequent written responses. All responses will be considered in the environmental assessment of the options. A stakeholder comments log will be produced showing how Thames Water has taken views and comments into account.

3. Demand management options and programmes

Marissa Vandonkelaar led the afternoon session on demand management. The objectives of the session were to:

- present the benefits and assumptions behind the Feasible Demand Management Options
- present the Average Incremental Cost (AIC) of the Feasible Demand Management Options
- outline next steps in the development of Demand Management Programmes and how these are considered alongside resource options
- provide the opportunity for discussion and comment on this work

Key points were as follows:

- Since August 2016 TW has developed a long list of demand management options, reviewed and screened the options to produce a shortlist of options. The screening report, comments from stakeholders on it, and an updated report are published on TW’s website.
- TW has published papers on the feasible options, there are 47 options grouped into 5 categories of leakage, metering, water efficiency, incentives/tariffs and non potable water.
- Marissa provided an overview of the feasible options in each of the 5 categories, setting out the source of base data, assumptions, and the benefits.
- The AIC values of the options were also presented. These were presented in bands of the volume of water contributed, akin to the approach for resource options.
- The current focus is on producing programmes of demand management options which are input to programme appraisal alongside resource options. This is done through an integrated demand management model.



STW: Requested confirmation of the scope of the leakage reduction options, and specifically whether these included base asset management. **TW** confirmed that these options do not cover the base asset management activities required to maintain leakage.

S&ESW: Queried whether there was overlap between assumptions for customer side leakage (CSL) and wastage. **TW** confirmed that these data do not overlap.

Adrian McDonald: The savings presented are huge relative to property use – are these the figures where CSL is identified? **TW** confirmed that the data is for the identified CSL, once averaged it is significantly lower ~ 10-20l/property/day

Adrian McDonald: It is odd that the CSL at blocks of flats is so high when you would expect these to be better managed. **TW** confirmed that age is a significant factor and there is significant occupier movement in blocks of flats.

GARD: How does the 17% reduction in usage from metering compare to other water companies? **TW:** South East Water and Anglian Water are reporting usage reduction from meters in region of 16-18%. There is still a lot of analysis on the metered data to be undertaken, so this should be considered a best estimate.

GARD: Have you assessed the longevity of these savings. **TW:** We have ~ 3 years of data and understanding the longevity of savings is an important part of the data analysis. This is a journey and we are in the early stages of this.

TRT: Has there been any work on the relationship between consumption and cost of water to understand if morals or price, or a combination, drive a decrease in water consumption. **TW:** We have not led any research on this to date.

NE: There are so many opportunities to provide tailored and sophisticated messaging to customers rather than one universal approach for all customers. It is disappointing to hear that TW is not opting for a more sophisticated approach to communications and marketing particularly with the smart meter data. **TW:** Work is on-going to tailor communications and messages to different customer segments. This approach will evolve as the data analysis gets more sophisticated.

TRT: Have you received information from other companies in the South-East (SE) on what their needs/opportunities are? Do you get brownie points for considering resources from a wider regional perspective? **TW:** We are engaging with the other water companies in the SE and have requested a response from them by early July 2017. We are considering options which can provide wider resources as part of the programme appraisal. Defra support WRSE and the need to consider resources from a regional perspective.

TRT: The needs of the other companies may hugely influence the options you have and the decisions that you make. **TW** agreed with this and stated that this is why confirmation of needs is so vitally important.

Albion Water: The question is how collaboration will work when there isn't sufficient surplus water. **TW** stated that it needs to look at a wide suite of options, demand management and then a combination of resource options to ensure it can provide a resilient supply to its own customers.



GARD: If Southern Water has pressures on their resources, why can't they develop desalination or other options. **NE** stated that they have considered desalination sites in marine locations but the coastline is highly constrained. Southern Water is in a challenging situation now.

GARD: If you had to develop for resources for Southern Water is there a cost implication? **TW:** This would be dealt with through the price control and regulatory framework. Customers would not be unfairly disadvantaged.

TRT: Water efficiency features again but in reality how much reliance can a company put on schemes which rely on changes in customer's behaviour. This is particularly a concern when more pressure is being placed on demand management. **TW** agreed that options which rely on changing customer behaviour have a higher element of risk. TW takes account of resilience and deliverability in developing the right long term programme.

South-East RT: What is customer's attitude to non-potable water reuse? **TW:** In new development – where non potable systems can be built as part of the design of a building – the systems are more accepted – as they are properly supported with communications, maintenance etc. Retrofits are not so well accepted, and are very expensive.

South-East RT is there also a view that customers are happy to use their own greywater but are not comfortable to use a neighbour or wider community's greywater. **TW:** We have not tested this as a concept but an interesting comment.

Albion Water: All new schemes have a long lead time, there is enormous resource required by TW and consultants, how can you be sure that other companies are not subsidised by TW. **TW:** Whenever we develop new resources we are required to demonstrate to Ofwat that there is not subsidy.

NE who would be responsible to make United Utilities customers comfortable that they are not subsidising TW customers? **TW:** We agree this is important. We are working with UU to discuss the best approach.

Dates of next meetings

- 10 July 2017 – Steventon Drop In
- 18 July 2017 - Water Resources Forum, London

End



Attendees

Name	Organisation
Adrian McDonald	University of Leeds
Anne Heal	CCG
Ben Stansfield	Ricardo
Ben Davis	Vale of White Horse District Council
Bill Sheate	Imperial College
Charlotte Hitchmough	Action for the River Kennet
Daniel Bicknell	GLA
Dave Wardle	ICE
Derek Stork	GARD
Harry Hodgson	CCG/SBF
John Sanders	Ricardo
Kay Lacey	CCG/Pang Valley Flood Forum
Ken Burgin	Cotswold Canals Trust
Kieran Conlan	Ricardo
Kieran Whelan	Ricardo
Lester Sonden	Sutton and East Surrey Water
Louise Bardsley	Natural England
Malcolm Jeffery	Albion Water
Mat Wells	Canal and Rivers Trust
Moragh Stirling	South East Rivers Trust
Peter Spillett	Thames Rivers Trust
Neil Edwards	RWE
Richard Harding	CPRE
Richard Spyvee	Gloucestershire Wildlife Trust
Ritchie Carruthers	Affinity Water
Sarah Thomas	Consumer Council for Water
Sarah Wardell	Environment Agency
William Mackveley	Severn Trent Water