



## Large Water Resource Options Stakeholder Technical Meeting No. 3 Minutes

**Date: 26<sup>th</sup> March 2015**

**Location: Clearwater Court, Reading**

### • Introduction

TW provided an overview of the programme of work to review large water resource options, the key stages of Phase 1 and the engagement previously undertaken to inform the development of the approach and the screening methodology.

The objectives of this meeting were to present the output of the screening assessment and to seek comments from regulators and stakeholders on the screening decisions. A report was circulated to attendees prior to the meeting.

### • Coarse screening assessment

TW explained that it had screened out 3 options at the coarse screening stage:

- Desalination (Estuary South): The option comprised local blending of groundwater and desalinated water in south-east London. However, the groundwater sources in south-east London are geographically dispersed and as such the scheme is operationally difficult and costly compared to other options.
- Transfers of Beckton STW effluent via the Tideway Tunnel: This scheme involves placement of a pipeline in the TTT which would have significant engineering and programme constraints, the option is therefore screened out on the basis of feasibility.
- Tankering water: This scheme has been screened out on the basis of costs. It may be considered separately as a drought option.

These decisions were accepted by stakeholders.

TW explained that further work is underway on 4 options:

- Bulk transfer via Grand Union Canal: The Canal and Rivers Trust (CRT) is leading a multi-stakeholder study to explore opportunities for canal transfers. This is due to start in April 2015 and TW is involved in the study.
- Transfers from Mogden (effluent support scheme): This option is under discussion between TW and the EA, the outcome of which will determine if this scheme is rejected or progressed.
- Direct non potable reuse/greywater: TW operate a direct reuse plant for commercial customers at the Olympic Park, the key issues for wider use are water quality risk, cost and developer support. Further work is in development to extend this project as a multi-stakeholder demonstration project, subject to EU funding.
- Existing reservoirs: TW is reviewing studies previously completed to consider opportunities for increased yield. TW confirmed that the review will include the feasibility of removing existing operational constraints. A significant constraint is that there is insufficient headroom in the current system to facilitate a reservoir being taken offline.

Options confirmed to be taken forward for further work are bulk transfers with STW and UU, desalination (Estuary North) and Mogden reuse.

• **Fine screening assessment and cost assessment**

- The fine screening approach was developed in consultation with stakeholders. There are 6 dimensions and the options are assessed in terms of benefits/opportunities and disbenefits/risks using a 5 point scale. Note the 5 point scale has been rationalised in response to comments. The assessment has been completed at the option type and sub-option level.
- TW provided an update on the average incremental costs plus carbon costs (AIC+C) cost assessment, the assumptions and sensitivity testing. A key issue previously raised was assumed utilisation; TW has considered maximum and minimum utilisation scenarios and used a cost range to take account of the most likely cost at maximum utilisation and most likely cost at minimum utilisation to compare option costs. The options have been compared within capacity bands to ensure fairness. Stakeholders agreed that the cost assessment is robust and clear.
- There is still work to complete on costs for new options and therefore some AIC+C values may change. A noted omission is the Severn Trent (STW) option costs. It was agreed that STW will continue discussions on cost with TW. GARD asked that there is transparency on information provided both in terms of costs data and modelling of options.
- There was discussion on the need to improve the presentation of the fine screening assessment to ensure the detail of the assessment is not lost. Throughout the meeting there was discussion on specific dimensions, most notably the E&S and promotability dimensions to ensure consistency across option types. These assessments will be reviewed based on the discussion.

Specific comments raised on options:

- TW confirmed that a release of 180 MI/d has been assumed for the UU transfer.
- Cotswold Canal Trust (CCT) requested confirmation that the capacity and costs of the Cotswold Canal option are revisited in the next stage of work. TW confirmed that this would be considered as part of the Phase 2 detailed investigation.
- CRT outlined the need to take account of the additional fixed and variable costs associated with the use of the existing canal network, where needed.
- GARD challenged the yield assumed for the Deerhurst Unsupported Severn Thames Transfer (UST). TW confirmed that sensitivity analysis had been completed.
- ICE queried the operating strategy for desalination. TW confirmed that the minimum operating strategy is continuous operation at low output with the treated water run to waste.
- GARD requested information on the confidence categories of 1-5 for option types. TW agreed to provide this information.

• **Raw water transfers – unsupported**

TW has proposed screening out the UST due to the poor resilience provided by the option in drought conditions. This was demonstrated by analysis of data from 1976. TW explained that there is work underway to understand the availability of resource in synthesised droughts to model the impact of climate change (CC).

GARD considered that the resilience issue had been overstated for the following reasons: 1) high level of assumed emergency storage, exceeding that applied by other water companies; 2) reservoir capacity assumed to be too low, with a need to revisit the trigger levels; and 3) the differential recovery of the Severn and the Thames catchments due to geology. GARD did not agree that there is sufficient justification to screen out the option at this stage. TW confirmed that it will review and respond to the points presented by GARD.

TW agreed that the assessment completed to date is qualitative and further quantitative

assessments are needed. It was proposed that the all scheme yields need to be tested using future flows and synthetic drought scenarios, this was supported by all.

The majority of stakeholders agreed that a supported transfer is more attractive than an unsupported transfer.

#### • Lower Lee

This option involves abstraction of water in the Olympic Park area. Previous studies have indicated poor water quality (WQ) with high levels of contamination, principally Arsenic, which would require complex multi stage treatment. As a consequence this option is excessively costly, and provides no benefits compared to Deephams wastewater reuse, which is a mutually exclusive option. As such TW proposed to screen out the Lower Lee option. This was supported by the majority of stakeholders who agreed that this should be screened out in its current form. TW will continue to monitor the water quality risk during AMP6 to understand if a much simplified option could be viable.

#### • Desalination

TW proposed to provisionally screen out the Estuary South desalination scheme based on the higher costs compared to wastewater reuse, principally driven by high power and chemical requirements. As there is currently uncertainty over wastewater reuse standards for discharge and public acceptability of this option, it is proposed that an Estuary North desalination option is developed on the Beckton wastewater reuse proposed site and the options become mutually exclusive. Overall this approach was supported by stakeholders who raised significant concerns regarding future energy requirements and consistency with the aspiration to decarbonise the grid.

#### • Raw water transfers – supported

There are a number of potential supported STT options using water from the Upper Severn, Middle and Lower Severn using either canals or pipelines or a combination of the two for conveyance. There was discussion on the potential options with key points noted below:

- Options without raising of Draycote reservoir are under consideration.
- Potential impact on downstream abstractors needs assessment.
- Assessment should consider phasing of options.

TW proposed that storage at Longdon Marsh should be screened out based on promotability and flood risk, and that this option is less favourable compared to the other supported options. This was supported by stakeholders, although GARD stated that if the STW and UU options were removed it should then be reconsidered.

Also there was discussion regarding the assessment of the qualitative dimensions of the option, in particular the consistency in the assessment of the transfers and the reservoirs. TW will review the assessments based on the comments.

A number of further investigations were discussed:

- Climate change assessment, and the need to complete this in a comparable way on all options
- HRW are undertaking work to improve the robustness and reliability of baseflow record for Lower Severn. This is due to finish late April. There were a number of questions about the scope and boundaries ie does it extend to the Gloucester and Sharpness Canal and how

does it take into account CRT and Bristol Water agreement. The future climates work will follow the flow work.

- Consideration of wider sensitivities such as abstraction reform and sustainability reductions

#### • Upper Thames Reservoir

There are 3 potential reservoir locations: Abingdon, Chinnor and Longworth. TW proposed to screen out reservoirs at Chinnor and Longworth based on the maximum size site constraints. Smaller reservoirs have a higher comparative cost with wastewater reuse, have reduced resilience against prolonged droughts at the same deployable output, and have less flexibility to supply other water resource zones and support reservoirs outages. Stakeholders raised concerns that smaller reservoirs could form a part of a composite set of options and therefore to screen them out may constrain the future strategy. GARD stated that robust reasoning was needed to justify the inclusion of Abingdon only at the smaller sizes. GARD considered that the screening out of smaller reservoirs needed to be linked to the maximum limit on wastewater reuse, as it considered that unless multiple small reuse plants were possible, it considered that the potential combination of a reuse plant and small reservoir should be considered. GARD stated that in its view if a UTR were required, a small one would be preferable to a large one from the perspective of local impacts. ICE raised the need for the strategy to be cost effective in the long term and if the decision is to have a large storage reservoir ultimately then the short term strategy needs to minimise sunk costs on other options. TW will respond to these comments in the updated report.

River regulation/dual purpose reservoirs were discussed. TW outlined the suite of options which could potentially provide water to SWOX WRZ and London and recommended that both options should be carried forward. This was supported.

Concerns were raised around grouping environmental and social parameters into one criterion as this approach was considered to potentially mask some attributes. North Wessex Downs AONB stated that in their view the reservoir would have a major and irreducible impact on the character of the AONB. EH also raised concerns about the historic environment. TW proposed to review landscape issues with interested parties.

The discussion highlighted that there are a wide range of positives and negatives with the options and TW is considering using the ecosystem services framework, or a similar model, to get a balanced assessment for the wide range of benefits and disbenefits.

#### • Wastewater reuse

Location: There are 4 potential wastewater reuse sites: Abbey Mills, Mogden, Beckton, Deephams.

- TW proposes to screen out the Abbey Mills option using Reverse Osmosis treatment due to operational complexity and cost. Other sites are preferable to this site. This was supported.
- Discussions are on-going with the EA on the environmental acceptability of using Mogden effluent in respect of the potential environmental impact on the Tideway.
- ICE raised concerns about the use of Deephams from an environmental viewpoint in respect of the available flow. TW confirmed that EA have stated a maximum capacity of 60 MI/d and in view of location is cost effective and potentially a good option for a small plant.
- Beckton is the favoured location for the majority of sizes and supplies water to east London (as does Deephams).

Technology: There is an on-going programme of work to review the technology options.

Resource provision: From a risk perspective TW consider that there is a maximum limit to the volume of reuse that would be relied upon for supply. TW is planning further work to define this but as a principle this was supported by stakeholders.

#### Other points and further studies

1. Resilience across the catchment and the need to consider strengthening the eastern side of catchment to alleviate pressure on western side.
2. Review of resilience of existing storage assets
3. Further information and data required on the STW options
4. Review of the operating strategies for options
5. How to assess portfolios of options

#### Attendees

Andrea Farcomeni	Affinity Water
Malcolm Jeffrey	Albion Water
Adam Comerford	Canal and Rivers Trust
Ken Burgin	Cotswold Canal Trust
Jen Heathcote	English Heritage
Tora Hallatt	Environment Agency
John Lawson	GARD
Alex Nickson	GLA
Dave Wardle	ICE
Henry Oliver	North Wessex Downs AONB
Nathan Warren	Ofwat
Linda Currie	Oxfordshire County Council
Peter Gray	Royal Berkshire Fire & Rescue Service
Ken MacDonald	Severn Trent Water
Neville Nelder	Stroud Navigation
Mark Smith	United Utilities
Colin Fenn	WWF

**TW:** Chris Lambert (Chair), Richard Smith, Lesley Tait, Brad Howe

**Motts:** Paul Chadwick, Bill Hume-Smith, Louisa Peaver

**Cascade:** John Sanders, Topsy Rudd

#### Apologies

Carol Skilling	Defra
Martin Lunn	Essex and Suffolk Water
John Mitchinson	LB of Redbridge
Andy Hanson	London Fire Service
Lester Sonden	Sutton and East Surrey Water
Peter Spillett	Thames Rivers Trust
Alison Young	Basingstoke and Deane BC
Dave Cook	Wilts and Berks Canal Trust
Patricia Cuervo	RB of Kensington and Chelsea
Andrew Stevenson	East Herts Council
Denise Rowley	PLA
Sarah Wardell	EA
Trevor Cramphorn	Cotswold Rivers Trust