



Water Resources Stakeholder Forum, 14 January 2016

Note of meeting

1. Welcome and Introductions

Richard Aylard welcomed everyone to the meeting. Richard emphasised the importance of the Forum for Thames Water (TW) to share work underway to develop its long term water resources plan and to hear the views and comments from stakeholders. Richard highlighted some of the key developments since the Forum held in September, these included:

- technical stakeholder meetings on resource options and stochastic drought generation – minutes and papers are available on TW's website www.thameswater.co.uk/wrmp;
- consultations on the draft Water Resources Planning Guideline (WRPG), Water 2020 and the Abstraction Incentive Mechanism (AIM); and
- studies to examine resilience including a WaterUK led study on the longer term (50 year) resilience needs of the sector.

Richard also sought feedback from attendees on the topics that they would like covered at future meetings and also comments on how we can improve our engagement approaches.

2. Demand Forecasting

The morning session focused on demand forecasting. Demand forecasting involves estimating how much water our customers' use today and forecasting how much water they will use in the future. With the unprecedented levels of population and housing growth forecast in London and the South East this is critical for planning future water supply. Ross Henderson (TW) introduced the topic and John Sanders (Cascade) and Rob Lawson (Artesia) then presented summaries of projects they have led on behalf of UKWIR on population forecasting¹ and household demand forecasting² respectively. Key points from the presentations are noted below.

- TW produces forecasts for different conditions which describe demand in an average year, called annual average, and in a period in which peaks in demand need to be met, called critical period.
- The WRPG³ sets out a framework for developing a Water Resources Management Plan (WRMP) including the demand forecast. TW will follow the WRPG and industry methodologies, where these are appropriate.
- The UKWIR project on population forecasting sets out a framework for water companies to use to decide on what methodology to follow, taking account of the planning problem and available information. For WRMP19 TW intends to use forecasts of population and property figures based on local plans published by the local council or unitary authority.
- The UKWIR project on household demand forecasting involved a detailed review of methods, from simplistic to very complex, to forecast household demand. The study concluded that there are 5 key factors which need to be considered: occupancy, behaviour, property type, technology, and customer attitudes. The project sets out a framework, using a number of criteria, to help decide on the most appropriate method taking account of a water company's circumstances. TW

¹ UKWIR Population, household property and occupancy forecasting

² UKWIR Demand Forecasting Methods

³ EA, Ofwat, Defra and Welsh Government produce a joint guideline called the Water Resources Planning Guideline which provides a framework for water companies to follow in developing their WRMPs. Consultation was held on the draft from Nov 15-Jan 16.

will confirm the methodology that it intends to follow in February 2016. TW will continue to undertake micro-component analysis and prepare per capita consumption forecasts.

- Non-household (NHH) demand includes businesses and institutions. Historically TW has used high level econometric data to prepare forecasts. Data has shown an increase in service industries and decrease in traditional industries resulting in a relatively static demand projections for the NHH sector overall. TW intends to undertake more detailed segmentation of the customer base to improve these forecasts and is currently exploring data sources which can be used to support this work.

Discussion

TRT raised questions around the timing, availability and accuracy of the Census data.

TW explained that the most recent Census data was published in 2011, and detailed data is obtained and used as a basis for forecasts.

TRT queried how changes as a result of immigration and demographic changes were taken into account.

TW set out some of the work to improve our understanding of water usage including analysis of the impact of sub-division of properties and the effect of cultural differences on water use.

Note: The availability of the UKWIR reports referenced was raised by GARD. UKWIR release reports at a cost to non-members. TW agreed to follow this up with UKWIR and report back on the means by which these reports can be distributed to interested organisations. **ACTION TW**

Professor Adrian McDonald then gave his thoughts on the approaches to forecasting demand for water and also the development of longer term forecasts. Professor McDonald has been appointed by TW as an independent advisor to input and challenge TW on its work in this area. Some of the key points from Adrian's presentation are noted below:

- Forecasting demand is difficult and there are a number of influencing factors. There has been a huge improvement in demand forecasting over the past 30 years.
- London is one of the most challenging places in Britain to forecast demand, issues such as the sub-division of houses, rental of rooms etc makes it a very complex picture.
- It is important to understand the basis and uncertainties in data, for example whilst the LAs use uniform models for population forecasts, the aggregation of data can present problems, which water companies need to be aware of.
- There is a need to consider a longer term planning horizon > 50 years for water resource planning taking account of changes to available supplies and climatic factors and therefore long term forecasts of demand are needed.
- An important aspect to long term forecasts is to agree future scenarios and possibilities and TW will need to do this in consultation.

Breakout sessions

There were 4 questions posed to frame the discussion in the breakout groups. Combined notes from the individual groups are presented below. Some comments have been attributed where the point was made by a single organisation.

Population and property forecasts:

- Concern was raised that actual rates of build of new homes were lower than the growth forecasts and therefore to use high growth forecasts may drive resource development that may not be required if the growth did not materialise.
- Local authorities (LAs) supported the requirements set out in the draft WRP that TW should develop demand forecasts based on LA plans. LAs acknowledged that the growth forecasts are high, and that they are politically driven, however they were clear that there is a strong drive to deliver these forecasts and Government is introducing measures to monitor activity, with penalties being introduced for LAs who do not deliver. LAs stated that TW should not underestimate figures as there is definitely a housing need and a will to deliver.
- Oxfordshire was discussed as a case study. In Oxfordshire the Strategic Housing Market Assessment (SHMA) requested 100,000 new homes across 5 districts. There is concern that Oxford will not be able to deliver the full complement (~ 15,000 short-fall compared to the ~28,000 homes allocated) and therefore the other districts may have to compensate for this shortfall. The 100,000 homes will be built (2011-2031) as per the SHMA however the local development plans may not include plans for the 100,000 homes when TW requires the data at the end of 2016.
- The importance of understanding infrastructure constraints was raised. LAs stated that it would be useful to understand infrastructure constraints when planning large housing developments. TW supported this and explained that they equally needed to understand the location of planned development to understand issues. This point was also raised by the Fire Service in terms of understanding potential implications for network pressure.
- LAs requested sufficient lead time for data requests from water companies. It was also proposed that water companies should consider the existing format of the LA data when requesting data as this would significantly aid the process. A pilot exercise was suggested.
- It was agreed that an understanding of the accuracy of forecasts would be helpful. LAs stated that they could provide a level of accuracy for their local development plans if this was helpful.
- There were also suggestions of other ways to estimate population such as supermarket demand, STW flows and transport usage. CCT suggested use of sophisticated programmes which run big data to look for seemingly un-associated, yet correlated data to give an indication of population changes, as is used to predict the stock markets. TW welcomed these suggestions.
- It was queried whether the number of unknowns/illegal users was increasing. TW is progressing work to understand missing population with 'Age Analytic' to find hidden and transient populations. Professor McDonald supported this activity. Sutton and East Surrey Water stated that their recent studies indicated 10-20% unaccounted for population.
- A further factor that needs to be considered is the extent and timing of migration out of London and this relies on house building in adjacent areas.
- The time horizon for local plans was raised as being short when considering infrastructure planning.
- Re uncertainties in forecasting HH demand TW stated that the roll out of meters would provide much better data to help to understand the proportion of water that is usage and the proportion that is leakage.

- Albion Water suggested that in view of the uncertainties options which can be developed flexibly would be preferable to embedded infrastructure.

Household Usage

- Stakeholders asked whether TW considers cultural characteristics of the population in forecasting demand. TW outlined work underway with London Sustainability Exchange (LSx) and other partners to understand the impact of ethnic and cultural differences in terms of water use. TW also explained that this additional detail of analysis on water use is important as unaccounted for water is currently categorised as leakage.
- How do water companies take account of so many uncertainties in forecasts with rigour? TW explained that it is currently looking at more sophisticated decision making tools which will help to address uncertainties appropriately.
- ICE queried some of the micro component data, citing poor performance of new sanitary ware in particular, and therefore concern regarding assumptions on water use. TW agreed and outlined work that was underway at an industry level to address “leaky loos” as this is recognised to be an issue. This was supported by E&SW who stated that 5% of toilets leak and consequently use an average of ~ 70 l/d.
- Patterns of water usage were discussed. RWE proposed that smart meters will bring the opportunity for more sophisticated tariffs for example incentivising usage outside peak periods. TW explained that it was exploring innovative tariffs; customer feedback is that they do not like complex tariffs. E&SW stated that the relatively low cost of water and payment methods via direct debit terms mean that customers are not aware of their usage and therefore the effectiveness of tariffs is questionable. Wessex Water completed a trial of tariffs in AMP5 which showed that tariffs were not well received by customers and were not shown to be effective in terms of reductions in water use. GLA proposed that water has wider value to people which should be targeted instead.
- TW raised a point that as the supply area is classified as a water stressed area, then Developers can be pushed to achieve a 110 l/h/d for new homes. LAs supported this however they also raised concerns that it would add extra cost potentially diverting funds from the development of additional houses. LAs suggested that information comparing the costs of standard and water efficient devices/ systems would be helpful.
- There was discussion on whether there is any information on actual water usage of homes built to achieve 125 l/h/d. E&SW has completed a study to examine this issue over a 3 year plus period and offered to share the results. **ACTION TW to follow up with ESW**
- There was discussion around whether people had the appetite to reduce their water use. GLA highlighted social studies which find that showers are now being considered differently, not about cleaning, more about time to ‘shut out the world’.
- Professor McDonald raised the need for much more direct measurement if forecasting is to improve, for example recycling has increased but the volume of water used to rinse recycled material has also risen. CCWater referenced a study that they had commissioned on this. This was reinforced by comments around the impacts of changes to working patterns may affect water use eg working from home.

Long term forecasts and scenarios

- It was queried what would be undertaken differently for a 25 year period compared to a 50 year period.
- Long term forecasts are framed by the past and to what extent long term forecasts would consider “surprises” for example a 3-4 year drought would likely drive a significant change in Government policy with consequences for the forecasts. The use of scenarios were cited as key to address this.
- A further concern was raised around whether such long term forecasts could drive poor decision making. This point was countered by ICE who proposed the use of sophisticated decision making methods which consider a range of futures and support development of a portfolio of solutions with no regrets planning.
- RWE also raised the importance of considering water resources in a wider context, and that a multi-sector approach needs to be recognised in future planning.
- A point was raised about squaring long term forecasts, and the uncertainties associated with these, with the short term political and regulatory cycle and approval of funding.
- Some LAs stated support for longer term forecasts > 50 years, and are considering longer forecasting for their own plans. A joint approach between TW and LAs was raised as an area for potential exploration.
- Overall a number of stakeholders expressed support for the methodologies.
- Economic forecasting was conducted by Oxfordshire to 2031 and it was suggested that TW look at the economic marketing assessments which LAs have as a source of data.

Other points

- The Fire Service raised a concern that reduction in demand may mean that flows and pressures will be decreased.
- The importance of education was raised and the focus on children and working through schools. This was largely supported by all stakeholders. TW explained that it has a programme of activity but there are opportunities to do more.

3. Assessment of Environmental and Social Impacts.

The afternoon session focused on assessment of environmental and social impacts. John Sanders (Cascade) presented the proposed approach to inform WRMP19 and feedback on this was sought in the interactive session. The main points were as follows:

- Strategic Environmental Assessment (SEA) is the core of the assessment and incorporates the relevant statutory assessment processes relating to the Habitats Directive (HD) and the Water Framework Directive (WFD);
- A tiered approach consisting of assessment of environmental and social impacts of:
 - each option e.g. water transfers, wastewater reuse, desalination or new reservoirs.
 - programme of options for each water resource zone
 - the plan as a whole, taking account of the programmes for each water resource zone and considering any interactions with other third party plans or projects.
- Assessment of scheme options will involve quantitative analysis of environmental and social impacts using accepted assessment methods and associated data requirements where possible.
- Environmental metrics, one for beneficial and one for adverse impacts, will be developed. The metrics will be based on a scale of +1 to +5 (for characterising beneficial effects) and -1 to -5 (to characterise adverse effects), with 0 characterising negligible effects. The grading will be based on expert judgement.
- The two metrics for each option will be used as inputs to the programme appraisal, which alongside other information, will be used to determine the best value programme for each WRZ.
- With the exception of carbon, TW does not propose to undertake monetary valuation of environmental and social effects (E&S costs). This is consistent with the approach agreed with stakeholders for the options screening process for WRMP19.

Dr Bill Sheate joined the session and presented his thoughts on environmental and social assessments to support strategic plans. Bill has been appointed as an independent expert to TW to advise and challenge on environmental matters. Overall Bill supported the approach proposed by John Sanders, key points emphasised were as follows:

- The type of environmental and social assessment undertaken needs to be appropriate to the decision making. For strategic plans, a strategic level of assessment is required such as a SEA whereas for specific projects, where there is substantial detail on the nature of the project or scheme, a more detailed assessment such as an EIA is appropriate.
- The tiered approach proposed presents a logical sequence, aids transparency and presents an appropriate level of detail.
- It is important to separate positive and negative impacts, to combine them loses transparency and potentially masks significant issues.
- It is not helpful to only monetise a subset of E&S impacts, in doing so would result in mixing metrics and as such would not provide a comparable assessment and therefore would not be advisable.

Interactive Session

An interactive session was held to seek stakeholders views on the approach proposed. A summary of the main points raised in the session is provided below:

1) Does this tiered approach sound sensible and do you have any comments on this?

- A number of stakeholders expressed support for the approach and stated that it seemed to be comprehensive.

- There was debate around the value of undertaking an SEA at a WRZ level. Supporters felt that the approach would enable consideration of all options in a WRZ, while opponents questioned the value added for a time consuming process and the regulatory need to do the assessment at a WRZ level.
- In using a tiered process, clarification was sought on how iteration would be undertaken.
- The method to consider cumulative impacts of WRZs was queried.
- The method to account for options that may support several WRZs, but be based in one particular zone was queried.
- For transfer options, for example transfer of water from Wales via another water company's infrastructure, the responsible authority for the SEA was queried, as were the regulators.
- A wider catchment or ecosystems approach was raised and it was queried how this could potentially be incorporated.
- The relationship between WFD, RBMP and the National Environment Programme (NEP) was raised.

Q2) Do you have any comments on the proposed assessment of options?

- Each option needs to have a similar level of detail in the assessment for them to be comparable.
- There was broad agreement that qualitative scoring is sensible and it helped consistently in the approach.
- It was questioned whether the approach would be consistent across all water companies when determining supply options, and if not how this would be overcome.
- The 3*3 matrix, to consider risk effect versus impact, was considered to be too coarse, and it was suggested that a 5*5 matrix would be considered best practice. Further examination of this was supported.
- It was agreed that a clear narrative is required to explain decision making.
- The use of sensitivity testing was supported where an aspect had a significant effect.

Q3) Do you have any comments on the proposal that E&S costs are not included in the assessment with the exception of carbon?

- The majority of stakeholders supported the approach proposed and considered the reasons for not undertaking monetisation to be legitimate.
- A point was raised by a practitioner that the base information on which E&S costs is out of date and not always relevant, therefore calling into question the validity of the assessments.
- It was questioned whether the monetisation of carbon will complicate the assessment without adding much value.
- The possibility to use natural capital accounting to support environmental costs was raised.
- Also the possibility of undertaking a Sustainability Assessment rather than just SEA was suggested.

Q4) Are there any particular areas of interest or concern with respect to the environmental and social assessment



- The focus of the WRMPs is to ensure security of public water supply however the availability of resources for other sectors is also key such as agriculture and energy. A point was raised about how the approach could be broadened to consider multi sector resilience.
- How will the SEA value resilience of people, of habitats, of landscapes against changes such as climate change, public values and compatibility with other options.

4. General discussion

Due to time it was not possible to provide a round up of other studies at the meeting. Appendix 1 provides a brief note on other studies and activities.

There were no additional points raised by stakeholders.

5. Dates of forthcoming meetings:

24 February 2016: Technical Stakeholder Meeting on the Severn Thames Transfer - Water Quality and Ecology Study. The meeting will be held in Reading. If you would like to attend this meeting please contact laura.beardsworth@thameswater.co.uk

22 March 2016: Technical Stakeholder Meeting on programme appraisal, the process to decide on the preferred programme. The meeting will be held in Reading. Invites will be sent in February. If you would like to attend this meeting please contact Lesley.tait@thameswater.co.uk

18 April 2016: The forum will be held at the Novotel, Paddington, London. Invites will be sent in March. At this forum we will cover the decision making process to decide on the preferred programme.

6 May 2016: Technical Stakeholder Meeting to discuss progress on the investigations into resource options. The meeting will be held in Reading. Invites will be sent at the beginning of April. If you would like to attend this meeting please contact lesley.tait@thameswater.co.uk

END



Attendees:

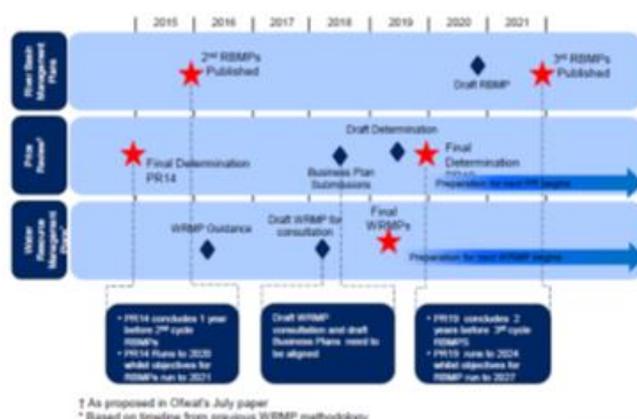
Alex Nickson	GLA
Andrea Farcomeni	Affinity Water
Angela Wallis	Environment Agency
Chris Smith	London Borough of Houslow
Dave Wardle	ICE
Derek Stork	GARD
Ken Burgin	Cotswold Canal Trust
Kevin Muller	London Fire Brigade
Alison Murphy	Sutton & East Surrey Water
Linda Currie	Oxfordshire County Council
Lyndsey Beveridge	Oxford City Council
Liz Alexander	West Berks Council
Malcolm Jeffery	Albion Water
Martin Lunn	Essex & Suffolk Water
Matt Jackson	Berks, Bucks, Oxon Wildlife Trust
Neil Edwards	RWE Generation UK
Peter Gray	Royal Berkshire Fire & Rescue Service
Peter Spillett	Thames Rivers Trust
Pippa Hopkins	Slough District Council
Sarah Thomas	Consumer Council for Water
Simon Zelestis	London Borough of Waltham Forest
Tony Crisp	Cherwell District Council
Trevor Cramphorn	Cotswold Rivers Trust
Wilson Liu	South Oxfordshire District Council
John Sanders	Cascade
Rob Lawson	Artesia
Dr Bill Sheate	Imperial College
Professor Adrian McDonald	University of Leeds
Clare Deerey	Cascade

Appendix 1

Round up of other studies

- Water Resource Planning Guideline (WRPG):** The EA led a public consultation on the draft WRPG from November to January 2016. Some of the key points raised by Thames Water in its response to the consultation were as follows:
 - Flexibility: TW welcomes the greater flexibility and innovation as it allows companies to determine requirements to reflect their own particular circumstances
 - Process verification: TW considers process verification could be a very helpful step with the regulators reviewing and agreeing to approaches and methodologies at an early stage in the plan development. However TW has concerns regarding the proposed practical application of this.
 - Resilience: TW supports the need to build resilience into plans and specifically the consideration of droughts worse than those experienced in the last 100 years, however TW considers that other aspects need consideration.
 - Environmental and social costs and benefits: Guidance on the environmental assessment and specifically the consideration of costs is not clear and TW has sought clearer guidance in this area.
 - Customers' priorities: The WRPG introduces the importance of understanding and reflecting the views and priorities of customers. This is supported.
 - Alignment: WRMP is not fully aligned with other relevant plans such as the business plans and river basin management plans, this needs to be addressed with clarity around objectives, inter-relationships and timings.
- Timeline:** Ofwat has recently consulted on Water2020. This consultation paper presented a revised timeline for the Business Plan which could result in the timeline for the WRMP being brought forward, as presented in the figure below. Advancing the WRMP presents constraints to the work programme. Discussions are ongoing with regulators and we are reviewing a revised programme to understand how we can meet these timelines.

The WRMP19 timeline may be brought forward

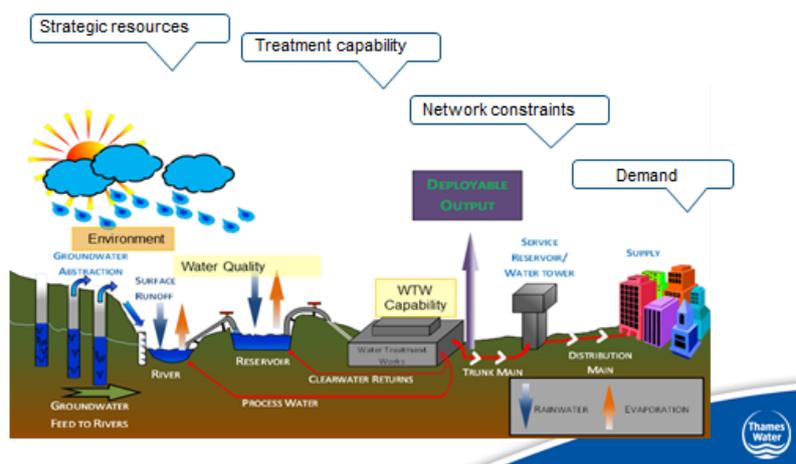


Taken from Water 2020: Regulatory framework for wholesale markets and the 2019 price review, December 2015

3. **Resource options:** TW is progressing work, with appointed consultants Motts, to examine and assess resource options. A technical stakeholder meeting was held in November 2015 to provide a progress update on the programme of work, to outline the main workstreams and to present work on the options for canal transfers and potential regional transfers in more detail. The slides and minutes from this meeting are available to download www.thameswater.co.uk/wrmp.

One of the workstreams is considering the capacity and capability of the current infrastructure, the interrelationship with new resource development, and also how these may change in the future considering factors such as climate change. The figure below summarises this work. Initial discussions have been undertaken with the EA. This work will be presented to stakeholders later in 2016.

Review of the capacity and capability of the current infrastructure



We plan to hold a follow up stakeholder meeting in May, and over the next 3 months we will have:

- Completed the study to investigate the use of the Cotswold Canals
- Completed the investigation of the need to invest in additional water treatment
- Engaged with Ofwat/NRW/EA to understand if there are any regulatory constraints to regional transfers
- Engaged with third party suppliers on transfer support options
- Progressed feasibility reports on reuse, reservoirs, river abstraction & transfers
- Initiated feasibility reports on desalination

Managing demand: As well as the work to examine resource options we are also delivering programmes of demand management, this includes activity to manage leakage, the roll out of progressive metering in several boroughs in London and activities to promote the efficient use of water. We monitor progress with all these activities to understand the benefits and limitations and will develop additional measures to manage demand for our next WRMP19.