



Water Resources Forum, 16 March 2017

Note of meeting

1. Welcome and Introductions

Richard Aylard welcomed everyone to the meeting and emphasised the importance of the Forum to share the work underway to develop Thames Water's (TW) long term water resources plan and to hear the views and comments from stakeholders.

Richard provided an update on the water resources planning process, set out the significant deficit forecast in London and some of the Thames Valley water resource zones (WRZs), and highlighted the need to be planning long-term water resources now, and the consequences for not planning properly.

Richard also promoted the next stage of the conversation with customers and stakeholders, which will involve a series of meetings and events in May/June, to seek views on long-term priorities to inform business planning.

Highlights since the October Forum included:

- Technical stakeholder meetings on programme appraisal (8 November 2016) and future options (7 February 2017)
- Consultation on the draft Drought Plan (5 January – 17 February 2017)
- Publication of a number of reports including Stochastics Water Resources Analysis (October 2016), NERA Planning Horizons (November 2016), and the work programme and accompanying report (February 2017)
- Publication by the EA of a position statement on Invasive Non-Native Species (INNS)

Richard also promoted Defra's recently published draft Strategic Policy Statement, which provides strategic priorities and objectives for Ofwat and sets the context for the next Price Review. There is an opportunity to comment on the draft Statement until 11 April 2017.

2. Managing demand for water

Overview of TW's metering programme

Alison Fanshawe and Faye England provided an overview of the current metering programme. Key points highlighted in the presentation were:

- TW is implementing a progressive metering programme which involves installation of over 400k smart meters in London by 2020. In addition TW is continuing the optant metering programme and replacement of meters. To date TW has installed 140k smart meters.
- Smart meters will provide detailed information on the performance of the network, leakage and consumption.
- There have been a number of challenges to programme delivery including issues with the number of internal installations (~66%); appointments and access to customers properties; interactions with customers who rent properties, which is ~ 50% of customers in London; and organised objectors to smart metering.



- In response, TW is continuing to develop the engagement approach, taking account of feedback from customers and developing a targeted approach for particular customer segments; developing technological solutions to support the programme such as stop tap adapters; and identifying opportunities for bulk metering.
- Overall the programme is on track. Customers have a 2-year period within which they can switch to the meter, as such the benefits of the programme are still under review but a higher number of Customer Side Leaks (CSL) have been identified than forecast albeit they are smaller in volume.

Pang Valley Flood Forum: There has been negative publicity recently around smart energy meters, with some smart energy meters giving exceptionally high readings. Have there been similar issues with water smart meters? **TW** confirmed that it is using a different technology and is confident that it will not experience the issues with anomalously high bills. Energy companies have tried to create a single national framework whereas TW has got its own system, which provides a great level of control and security.

Environment Agency: With ~ a third of leakage on customers' pipes, there are significant opportunities to identify leakage. Have you estimated the leakage benefits? **TW:** To date TW has ~ 1 year of data so we are in the early stages of analysis and are only just beginning to see seasonal variation. Between 10-15% of households are showing continuous flow, some are very small flows. We would not want to extrapolate based on this relatively small sample of data but will share data at a later date.

Thames Rivers Trust (TRT): Will you be installing meters or smart meters in 100% of properties? Is there an economic limit to the roll out? **TW:** Some installations are uneconomic – our cut-off point is 150% of the meter cost. Bulk meters have big benefits.

TRT also requested the levels of meter penetration that TW is aiming for. **TW** confirmed it is working to achieve 55% penetration in London by 2025 and 70% by 2030, supported by bulk meters to provide close to 100% coverage in terms of data.

Overview of TW's water efficiency

Andrew Tucker provided an overview of the measures and activities that TW use to promote the efficient use of water to our customers. These measures include ongoing provision of free devices (which despite being promoted for many years are still popular), new approaches to working with schools, partnership projects eg with ARK, pilot for an engagement programme in Oxford, and promoting technological developments such as solutions to "leaky loos". TW is also implementing a customer engagement programme to support the progressive metering programme, this is a unique opportunity to engage with customers, educate and raise awareness of the efficient use of water. A key thread in all this work is the need to have a continuous conversation with customers with personalised offers and propositions.

Cotswold Canal Trust (CCT): If dual-flush toilets are the most likely to leak –why are you promoting them? **TW** advised that it is retrofitting toilets using a product called Eco-beta which does not remove the siphon. Ultimately the market needs to return to siphons – the mechanical dual flush is unreliable.

EA: Do your figures include better water efficiency from new devices, as people replace their dishwashers, washing machines etc? **TW** do take this information into account in forecasts of demand. TW noted that devices are increasingly energy efficient rather than water efficient and would like to see that change.

Non-potable reuse

Siraj Tahir from Arup provided an overview of the work undertaken to explore opportunities for the use of non-potable water to help to manage demand. The study has focused on London, and specifically the Opportunity Areas in London identified by GLA. The study has looked at a range of system typologies and new development rather than retrofit. The study will provide insight into the types of systems, developers' attitude, public attitudes and costs. Depending on the development, the costs are in the range from £1.7-9/m³

Thames River Trust: It always comes back to the question of cost and public acceptability. We've been talking about this issue for two decades or more. Will the Government ever regulate to make it happen? **Arup:** There are policies e.g. GLA target for 105 l/h/d for new developments but agreed that regulation would help. If housing development is taking place in an area with insufficient supply, then it can't go ahead until there is a solution. Reuse becomes more attractive at these sites – and it also removes the 'first mover' problem that comes with new infrastructure. **TW:** There is a massive push for new housing and therefore that is going to be the priority for the Government. Developers have the whip hand on this issue.

Albion Water: We can't stop at greywater recycling – we need to look at the whole thing. The study, and its conclusions, is not ambitious enough and the costs are higher than on the ground experience. It would be useful for our organisations to work together on this. We need to explore cost-savings to developers as an incentive. **TW** supported this.

3. Check up

This was an interactive session to review the topics that have been covered so far with stakeholders; identify if there are topics that have not been covered sufficiently, and new topics; and ensure TW understands issues and concerns of stakeholders. The points raised by stakeholders in the discussion are listed below under a variety of different topics.

Topic 1: How much water is available now and in the future?

- Climate change – does TW work with academics on this. TW confirmed that the EA provide guidance which extends to 2080.
- What is the methodology to link climate change and extreme drought? TW advised that the stochastics work addresses this which identifies more extreme droughts than are contained in the historic record from 1920. An allowance for climate change allowances will be applied to the stochastic droughts.
- TW needs to make clear what the probability of a severe drought to 2100 is and whether we know the last occurrence of severe drought (outside of the historical record).
- TW should be openly supporting sustainability reductions, not seeing them as a negative factor to work around.

Topic 2: How much water do our customers need now and in the future?

- Align data on housing growth with actual delivery, and incorporate national development plans – e.g. the Oxford-Milton Keynes –Cambridge corridor.
- What is the source of information for the population forecasts? Why do you use local authority forecasts and not national statistics? Are all Boroughs being optimistic? Will Local Authority data be available for review ? (CPRE).
- Longer term forecasts are not based on local authority data – GARD raised concerns over the origin of the data.

- Water consumption - faith and cultural habits are an important factor in water use.
- In some instances technology can lead to an increase in water consumption for example in sink macerators.
- Will TW set a target for per capita consumption (pcc). TW confirmed that for WRMP14 it had a target of 140 l/h/d and this will be reviewed as part of WRMP19. It was noted that pcc in US and Australia is significantly higher than UK's average pcc.
- Albion Water considers that 135 l/h/d is feasible but below this is difficult.
- The cost of water was identified as an important factor in the levels of water use.
- A cultural change would be needed to achieve a step change.
- There is an enormous opportunity with the scale of new housing development over the next 10/15 years that should be realised.
- A decrease in pcc could affect the sewerage system and alleviate some of the constraints to growth on the wastewater side.
- There are risks around overly ambitious water efficiency proposals.

Topic 3: What are the options to ensure a secure supply of water?

- How has TW moved from long list to feasible list to the constrained list?
- Some stakeholders requested cost breakdowns for options for example conveyance by the pipeline versus the canal (CCT) to provide the opportunity to review and challenge the assumptions and the costs. TW agreed to share information with CCT that has been shared with the Canal and River Trust. **Action TW**
- Publish the actual quantity and quality of water in any new resource. For example, the new reservoir and algae levels.

Topic 4: How do we decide on the right long term strategy?

- Why is SWOX WRZ defined as a complex WRZ and do you need 80 year planning horizon in SWOX WRZ? TW confirmed that we face a complex problem driven by significant population growth and the effects of climate change in reducing existing available water which requires more sophisticated tools to develop the right solutions. The other Thames Valley WRZs are predominantly groundwater and as long as there is sufficient rainfall over the year they are not as affected by climate change to the same extent as surface water sources and therefore can use simpler modelling techniques.
- There are a range of potential options; will the decision making process provide transparency in decision making. Stakeholders supported "an idiot's guide" to programme appraisal. **Action TW**
- It is important to follow a medium to long term time horizon and consider the strategy over this longer time period
- Stakeholders requested the opportunity to contribute to the environment assessments of new resources – e.g. river transfer

Topic 5: Other issues

- Third party endorsement/assessment of WRMP recommended
- TW should be making more of regional, strategic need for water, rather than its own area of operation – and how TW options impact the wider south-east
- Look into using the Alan Turing Institute to crunch/utilise the data coming from smart meters
- Supply the bad debt figures by water company **Action TW**

4. Update

Chris Lambert provided a round up of key developments and projects. A summary of some of the main points raised in the presentations is provided below.

Policy: Chris provided an update on the work led by the National Infrastructure Commission, discussions on the National Policy Statement (NPS) for Water and Defra's intention to prepare an NPS for water, together with its recently launched consultation on the "strategic priorities and objectives for Ofwat". Chris also referenced work underway by the GLA and Oxfordshire County Council on long term strategies.

GLA: We will be putting out the London Environment Strategy to consultation in late spring/early summer.

Oxfordshire County Council: We are working across sectors, including TW, on our infrastructure strategy. We will identify what the infrastructure needs are for the whole county to 2040. A consultation is likely in May/June.

Thames Rivers Trust: What is the relationship between the National Infrastructure Commission(NIC) and the National Policy Statement (NPS)? **TW:** There isn't a direct link – the NPS is produced by Defra. The NIC is a separate organisation, but we're engaging directly with both.

Demand management and resource options: Chris presented headlines from the ongoing work to examine new demand management and resource options and the constrained lists of options.

Demand management options

- Optimised demand management portfolios will be developed to input to the programme appraisal decision support tools alongside the resource options.
- The updated Demand Management Options Screening Report and Non-potable reuse – Feasibility Report (currently only the abstract is published) will be published by the end of March 2017.

Resource options

- TW has undertaken extensive engagement in the development and assessment of options
- In Autumn 2016 TW sought comments from stakeholders on the feasibility option reports and screening reports.
- TW received over 300 comments from a number of stakeholders and responded to the comments at the February 2017 stakeholder meeting.
- TW confirmed the constrained list of resource options for London and the Thames Valley. Chris also provided an update on the assessments for each option type and ongoing work where appropriate, key points are as follows:
 - **Severn Thames Transfer:** TW is considering a partially supported option using storage in the Severn catchment. Discharge in the River Thames would be downstream of Culham, discharge higher up the river was assessed to be too damaging to the ecology. There are concerns about the transfer of invasive non-native (INNS) species, the EA has published a position statement regarding managing the risk of the spread of INNS through water transfers. There is ongoing work to understand regulatory implications.
 - **Reservoir:** TW commissioned Atkins to assess the resilience of the reservoir to drought in response to comments from GARD. This work concluded that the reservoir is resilient to drought.
 - **Teddington direct river abstraction:** Work is in progress to understand potential environmental and navigation issues and discussions are ongoing with the PLA. A

further concern is the availability of land in the Mogden area, which is highly developed.

- **Reuse:** The ongoing work is looking at an upper threshold for the contribution of reuse to water supply.
- **Desalination:** The focus is on exploring the impact of salinity and the cumulative impact of reuse and desalination options in the upper and middle Tideway.
- **Third party options:** TW published an OJEU notice seeking submissions from third parties. TW has received several responses and these options have been assessed through the established process. TW is awaiting a proposal from Welsh Water.
- **Catchment management:** From a water resources perspective this offers a relatively small resource contribution but is an active area of investigation within TW.
- Whilst we discuss options to provide additional resources, it is important that these options are assessed from a wider perspective considering the conveyance, treatment and network requirements to get the water into supply. This work is in progress.

GARD: We seriously disagree with the assessment that Abingdon reservoir is resilient to drought and will be sharing our work with stakeholders. You've said that desalination plants could impact the salinity of the estuary but given the size of the estuary the discharge would have to be significant – how many plants would need to be in place to impact the salinity? **TW:** It is about discharge levels and on the concentration of what is released. TW already operate one desalination plant (150 MI/d) and is proposing potentially a further 450 MI/d. The studies will confirm if these volumes could negatively impact on salinity levels in the estuary. **GARD:** At what point will you release the data. **TW:** We will consider the combination of options and cumulative effects as part of the programme appraisal. TW confirmed the work is unlikely to be completed in April 2017.

CPRE: In the 1976 drought there were concerns about loss of water in the upper Thames – how do you make allowance for this? **TW:** We have made allowances for losses and agreed these with the EA. We are doing ongoing work on this but currently estimate that 10% would be lost between Lake Vyrnwy to the lower Severn abstraction point at Deerhurst. Losses of 2% have been allowed for in the Thames catchment.

CPRE: So this figure would be larger in a drought. **TW:** The current estimate is based on monitoring data and includes drought releases in the River Severn during drought.

S&ESW: What level of meter penetration do you consider is appropriate prior to the introduction of tariff controls? **TW:** Our working assumption is around 60% meter penetration. Customers tell us that it is unfair to introduce tariffs until there is a higher rate of penetration, which we consider a fair approach.

S&ESW: Have you looked at what form tariffs could take? **TW:** We have done some desk based research but we would need to do more work to be able to definitely say what would be most effective.

S&ESW: Why use a separate model (IDM) to develop optimised demand management programmes, and how does the IDM model differ to EBSD. **TW:** IDM considers detailed demand management activity at a geographical scale and produces optimised programmes which are then input data to EBSD. EBSD is not designed to manage the scale of individual demand management options or diversity.

TRT: If the EA go ahead with 2 flood relief channels, would that impact your water resources plan? **TW:** We are working with the EA on this – it might lead to the loss of resources but it looks to be small. We will have to re-examine our own model to reflect the changes.

EA: An advantage of demand management options is the consequential reduction in the volume of wastewater to be treated, is this included in the benefits assessment? An UKWIR study was undertaken on this topic which showed that in certain cases demand management measures can lead to an improvement in effluent quality at STWs and environmental pollutant load can be reduced but it has not been progressed across the industry.**TW:** We have not previously considered the impact to be significant but will review the information and respond to stakeholders in due course. **Action TW**

Programme appraisal

Chris provided an update on the approach to develop the preferred programme, the decision making tools, and metrics to support the development of the best value plan. TW has also developed a visualisation tool to illustrate how individual programmes perform against the range of metrics. Chris also explained the role of the independent expert panel who will help advise on the preferred programme.

Water Resources in the South East (WRSE)

WRSE use an InfoGap modelling approach based on EBSD in which a range of scenarios is developed and these are stress tested for different uncertainty levels. The work completed so far has highlighted that many areas of the South East would be in deficit during high demand periods and under many scenarios there is a reliance on TW to provide additional water across the South East. This work is in progress and the final report will be published in due course.

Dates for future meetings

28 April 2017: Technical Stakeholder Meeting on options (Reading)

18 July 2017: Water Resources Forum (Reading)

Attendees

Adrian McDonald	University of Leeds
Andrea Farcomeni	Affinity Water
Anthony Whitaker	Swindon Borough Council
Daniel Bicknell	Greater London Authority
David Howarth	Environment Agency
Derek Stork	GARD
Dominique Barnett	London Borough of Lambeth
Dr Mike Bowes	CEH
Gayle Wootton	Waverley Borough Council
Harry Hodgson	CCG (Small Business Federation)
Helen Tidridge	Natural Resources Wales
James Champkin	Angling Trust
Kay Lacey	CCG (Pang Valley Rivers Trust)
Ken Burgin	Cotswold Canal Trust
Lester Sonden	Sutton and East Surrey Water
Malcolm Jeffery	Albion Water
Melissa Goodacre	Oxfordshire County Council
Peter Spillett	Thames Rivers Trust
Richard Harding	CPRE South Oxfordshire
Siraj Tahir	Arup
Sophie Temple	Natural England
William MacKveley	Severn Trent Water

Apologies:

Eric Salem, NIC
 Caroline Knight, DWI
 Owen Turpin, EA

END