

Session Title: Water Management

Summary:

Investors and BLs will leave the session:

1. With a clear understanding of the drivers of long-term water imbalance (climate change, population growth)
2. Understanding the key levers: Supplying more, reducing demand or storing more
 - a. Focus on leakage 15% in AMP7, 50% 2040
 - b. Focus on metering – journey to 100% metered
 - c. Focus on Interconnector schemes
3. Confident that our key activities in AMP7 and beyond set us up to be resilient in the long term against water imbalance.
4. Excited about some of the technology and relationships that will deliver the aspiration efficiently

In addition, BLs will leave the session with a clear understanding of where they have a role to play.

Key Commitments:

- Reduce leakage by 15% by 2025
- Reduce leakage by 50% by 2040
- Reduce PCC by 3.5% by 2025
- Install 490k Meters by 2025
- Spade Ready Interconnector plan by 2025

Draft session agenda:

Time	Subject	Proposed speaker
5 mins	Intro	Sarah Bentley
8 mins	Interconnector	Bob Stear
Network Zone: Exhibition Areas		
1 Mins	Intro	Stu Howell
4 Mins	Faster Find	Adam Perkins
3 Mins	Faster Fix	Sophie from Steph’s Team.
4 Mins	Innovation	Matt Lewis
1 Mins	Wrap Up	Stu Howell.
Demand zone:		
4 Mins	Intro	Steve Witter
4 Mins	Home Surveys	Neerja Uphaday
4 Mins	Metering / BOPPS	Rose
1 Mins	Wrap Up	Steve Witter

Session outline (currently written with CMD audience in mind – will need tweaking for BL event):

Session	Overview	Format/props
Intro		
1a. Sarah Bentley	<ul style="list-style-type: none"> • Good morning everyone and welcome to the Water Management Session. • As we have discussed throughout the day, the climate is changing dramatically and the extremes of weather we have seen over the past few years is becoming our new normal globally, across the UK and within our Severn Trent patch too. • While Carbon is a key focus in the battle against climate change, it is important to remember that Water Scarcity is as critical an issue to face into when thinking about the impact on our environment. • Last year, the United Nations World Water Development report stated that by 2050, around 5 billion people could be living in areas of water scarcity [and across the UK we know that there are water scarce areas especially in the south, and we have areas of our own patch that could without intervention be at risk of water shortages]. • Water is our business and so we have robust plans to ensure that we have sufficient water to serve our customers even as the globe gets warmer. • Our documented and regularly updated Water Resources Management Plan is at the heart of our long term strategy, including various modelling scenarios including warming of 2 and 4 degrees. • We have shared this robust and rigorous scenario planning with our regulators as a core part of our business planning review and secured a mixture of funding and incentives to ensure that we successfully deliver against our plans. • We know that water is a precious and essential resource, and that it is our job to ensure that we have resilience of supply as we prepare for climate change. Looking after ‘one of life’s essentials’ is the core of our purpose and we have a good track record! • The activity that we undertake to secure the long term resilience of water supplies, relies on our ability to invest our capital wisely, deliver our planned engineering schemes, and improve our network and our customer behaviours. • Throughout AMP 6 we have delivered a significant number of complex construction schemes improving 	Drone footage of major schemes

our reliance for generations to come. Let's take a look at our teams in action:

[Show video of drone footage and words over layer to show case Birmingham resilience, BRP, EVA, Ambergate, Boreholes, Hanchurch]

- So you've just seen some pretty impressive footage of the schemes that we've delivered in AMP6.
- Alongside our large scale capital investment, we are working day in and day out across our patch in two key areas of water management:
 1. Firstly to improve our network – by operating our network to reduce the likelihood of leaks, identifying leaks quickly through innovation and technology and repairing leaks efficiently when they occur;
 2. and secondly to support our customers – with their management of water to reduce the amount of water they use through water saving initiatives and reduce the water that is wasted through leaks out of their private pipework, leaky loos and dripping taps.
- We have set out some bold ambitions in both areas that we are confident we will deliver in order to help achieve the targets in our Water Resources Management Plan
- And we have set up the right incentive and reward schemes to align our objectives within the regulatory framework.
- Preparing for climate change through protecting this precious resource is good for our customers now and in the future, it will also contribute to carbon reduction as the more water you treat, the higher the carbon impact.

It also makes good business sense for us:

- o as we reduce operating costs to treat water (around £5m per year),
- o grow our RCV through capital investment
- o drive improvements in our network and customer behaviour as measured by four ODIs including Leakage, Per Capita Consumption (or PCC), Inspiring Customers to use water more wisely and Metering.
- So whilst water scarcity is a global challenge we feel confident Severn Trent is well placed to ensure the customers in our region can be confident in their water supply for [decades/generations] to come.
- We are also playing our part nationally as well. As I mentioned earlier, water scarcity is a challenging problem especially in the South of the country, and we

	<p>have been working with other water companies in the UK to help solve this challenge.</p> <ul style="list-style-type: none"> • So before we look in more detail at our AMP7 plans for our network and customer engagement, I'm going to handover to our Chief Engineer, Bob Stear, who will talk to you about an exciting plan to develop an Interconnector pipe between the three largest water companies in the UK. 	
Interconnector		
1b. Bob Stear	<ul style="list-style-type: none"> • Thank you Sarah • Within the last price review Ofwat challenged all of the water companies to think about water resources in the UK. It is clearly in customer's interests for water companies to think collectively and drive a more cost effective plan. • Long term models tell us that there is enough water in the UK but it is not all located in the areas where we need it the most –the South being much dryer than the North in simplistic terms. The good news is that, whilst we like to talk ourselves up, the UK is actually pretty small and so unlike some countries, we have the option to transfer water. • Now, we recognised the role we might play for a while – as we are right in the middle of the country and in-between the areas that have a lot and those that have too little. In fact we published some thought-leadership documents in 2010 advocating transfer schemes • We included some schemes in our Water resources Management Plan and submitted in the Price review process. We're delighted to say that the schemes we suggested as part of the national picture were supported by Ofwat at PR19. And right in the middle of this, we delivered our Birmingham Resilience Project – the biggest transfer scheme we've ever completed. • In AMP7 thinking collectively across the Water industry is about looking at a series of interconnectors that will transfer water from the North to the South between ourselves UU and Thames. In terms of the scale of the challenge, it is estimated by the mid 2030s that the South East will be short of about 1,300 million litres per day, or around the consumption equivalent of 60 million people. • For our part we have been given £43m to work on the feasibility work to make this a reality. The project itself could be a significant investment for UK water for AMP8 and beyond. And you can be as sure that 	Slides 1-6

as part of our thinking we'll be making the optimum choices for resilience within the Severn Trent region

- The series of schemes will deliver an extra 1500ML/d in the South East. For the next 5 years we are doing all the work to get 'spade ready' for 2025.
- We have two major options – one involving the use of canals to take water down towards the capital – the Grand Union Canal scheme. The other is the Severn to Thames transfer. And it's that I want to talk about.
- For this I'm going to need a bit of a prop...hold on if only I had a map and bob cam! Right then let's go!
- The key objective here to be able to put 300 MLD of water from the River Severn into the Thames so it can be used in London. It's actually a series of choices – all designed to free up water in the Severn.
- Let's follow it down....
- Right up here in Liverpool (play Beatles sound clip) - they get their water from Lake Vyrnwy – a massive reservoir. So the first job is for United Utilities, the water company in the North West - to find smaller sources of water locally to allow 180MLD to flow into the Severn. We're off (see totaliser)
- Next we pass Shrewsbury. There are some choices we can make to allow less water to be taken out here – we actually have 15 MLD of license we don't use here (see totaliser)
- Down in Gloucester (play the wurzels?) we can treat the effluent to a high standards and put it into the Severn – that's another 35 MLD!
- Lastly Birmingham's effluent (play the Human League) can be diverted into the Avon and flow into the Severn. A whopping 115MLD. So we now have more than we need – but that gives us some choices as we finesse options.
- Now – there are some things we might consider along the way. We have old assets that are built in flood plains and expensive sources of water, so we'll look for opportunities to set ourselves up for the long term.
- The last bit is to pump the water from Deerhurst 87km to the Thames – and on to London (play Rabbit by Chas and Dave)

Go to Big Map

	<ul style="list-style-type: none"> • So – to recap: • UK Geography makes this possible • We have the construction credentials and experience of similar schemes (BRP) to deliver this efficiently. • We have enough water for ourselves, so we can help and at the same time set ourselves up with a more resilient and cost efficient network for the future. • OK I am going to hand back to Sarah now. 	
Wrap Intro		
Sarah Bentley	<ul style="list-style-type: none"> • Thanks Bob, • As I said a little earlier, we an ambitious agenda to improve our network and support our customers with their water use. We have four ODIs in this area which are funded within our regulatory settlement - you can see these on the screen. • Across Leakage and PCC we will save at least 98MLD of water across AMP7. As part of our Inspiring Customers to use more water wisely ODI we will X,Y,Z and we will install at least 500,000 meters in AMP7, all funded through our regulatory settlement • In all of these areas we have a great track record as you can see on the next slide – we’ve reduced by regulatory settlement across the last y years, PCC by X% and have educated XXX On our schools programme in AMP6 • We’ll now break out into two groups to in more detail at our AMP7 plans in this space. One group will go with Bob to look at all the activities we are doing to improve our network to reduce leakage and the other group will come with me and we’ll go to the town hall to see how we are influencing customers’ behaviours to reduce leakage & PCC 	Slide 7 Slide 8
Network Zone		
Stu: Intro	<ul style="list-style-type: none"> • Hello everyone and welcome to our Network Zone. • So of the four ODIs Sarah talked about, Leakage is the key ODI when we talk about improving our network. In this breakout you’ll see how we are going to deliver around 47MLD of reduced leakage through improving our network. The remaining 15 MLD you will see in the Customer Zone and will be delivered from reducing leaks on Customer properties for which they are accountable for. • Reducing leakage from our network is really about finding leaks earlier and faster and preferably before 	Slide 9

	<p>they are visible to our customers, and once they have been found fixing them as fast as possible</p> <ul style="list-style-type: none"> • Technology has played a huge part in the progress we have made to date and will continue to do so for our future ambitions. . We have invested in many of the ideas we shared with you at Bruntingthorpe two years ago and more since then. You'll see shortly some of the fantastic technology we have already deployed, together with innovation we are currently developing. • Reducing leakage is clearly beneficial from a climate and a customer perspective and as you can see from the slide behind me also presents us with a series of other business opportunities <ul style="list-style-type: none"> ○ Lower Opex cost base – we estimate that the annual cost of treating and distributing 47MLD is around £4m per annum ○ We have a strong track record in reducing leakage which gives us confidence we can earn ODI reward in this area. ○ Improves reputation – leakage has been one of the totemic issues for us. ○ RCV growth – as we anticipate further investment will be required in future AMPs • I'll hand over to the team now who will talk you through all our exciting plans and technology we will have in place to deliver all this. Firstly Adam will talk you through how we are finding leaks much faster before Sophie talks you through some of our recent fix improvements. Finally Matt will talk you through some innovation that is in early stage development but could be game-changing for leakage. 	
Adam – Faster Find	<ul style="list-style-type: none"> • Hi I'm Adam Perkins and I'm responsible for Leakage Operations. • I'm going to talk to you a little about how we've organised ourselves for success with our Leakage Operating Model or LOM as we call it and secondly I'll show you a some of the exciting technology we've been deploying that has enabled us to find leaks 20% faster, and will support delivery of our 15% reduction target. • From an organisation perspective we have implemented the leakage operating model. It is a 	Photos of the WNT engagement and tasks to bring the local ownership model to life.

geographically based ownership model with Water Network Technicians that live and work within their communities which has been hugely effective. This isn't about recruiting lots more people – far from it, we have recruited the right people in the right geographies – an efficient scalable model that benefits from local knowledge of their areas.

- These teams gain a huge amount of insight into the areas that they both live and work in on a daily basis, they have become ambassadors of the organisation as many local people know who to talk to – it also means that they feel much more accountable to fix the local network that their friends and family rely on – no one likes getting moaned at by their mates in the pub.
- In terms of Technology we have been essentially investing in extra gadgets to find leaks faster.
- This includes investing £14m on 40,000 of these beauties. For those of you who were at Bruntingthorpe you may remember these hanging from the ceiling – they're acoustic loggers. They're one of the innovations that we tested and trialled during the Leakage Lab.
- They work by listening to our network at night when leaks are easier to detect between 2-4am and send back alarms to our Water network technicians ready for the pickup investigations for the first job of the day in their patches.
- The results have been amazing - we have increased the percentage of leaks detected before the customer has to report them from 35% to just over 50%, meaning we are detecting leaks long before they are visible and before they cause a supply interruption. This also means that we are confident that leaks are leaking for a shorter amount of time (or what we call leak life).
- We are also investing a leak alarm system for our plastic network where acoustic detection is much harder. This is what we call dynamic pressure modelling (DPM). This system uses pressure sensor to analysis changes on the network against the predicted model, so as leaks break out, they create an alert, we can highlight section of the network that we believe is affected (see on the big screen), this narrows down the area for our WNT's to investigate. And reduce the time to find the leak, this is critical to our 15% leakage challenge.
- So now I'm going to handover to Sophie who can talk to you about some of the Fix technology we have been deploying.
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Adam picks up logger and explains how It works, use the logger online visual platform (google maps) to zoom into the loggers in action alongside WNT raising the leak.

Interactive animation show how the DPM works in practise. (Hold DPM logger)

I'm Adam Perkins and I'm responsible for Leakage Operations.

- I'm going to talk to you a little about how we've organised ourselves for success with our Leakage Operating Model or LOM as we call it and secondly I'll show you a some of the exciting technology we've been deploying that has enabled us to find leaks 20% faster, and will support delivery of our 15% reduction target.
- From an organisation perspective we have implemented the leakage operating model. It is a geographically based ownership model with Water Network Technicians that live and work within their communities which has been hugely effective. This isn't about recruiting lots more people – far from it, we have recruited the right people – an efficient scalable model that benefits from local knowledge of their areas.
- These teams gain a huge amount of insight into the areas that they both live and work in on a daily basis, they have become ambassadors of the organisation as many local people know who to talk to – it also means that they feel much more accountable to fix the local network that their friends and family rely on – no one likes getting moaned at by their mates in the pub.
- I'm now going to hand over our local patch owners Tom and Ryan to about their own experiences working in the Leakage Operating Model within this very area we are today.
- In terms of Technology we have been essentially investing in extra gadgets to find leaks faster, you may have heard the guys talk about in the own experiences.
- This includes investing £10m on 36,000 of these. For those of you who were at Bruntingthorpe you may remember these hanging from the ceiling – they're acoustic loggers. They're one of the innovations that we tested and trialled. These will cover 15% of our worst performing metallic network where we currently experience most leaks.
- They work by listening to our network at night when leaks are easier to detect between 2-4am and send back alarms to our Water network technicians ready for the pickup investigations for the first job of the day in their patches.
- The results have been amazing - we have increased the percentage of leaks detected before the customer has to report them from 35% to just over 50%, meaning we are detecting leaks long before they are visible and before they could cause a supply interruption. This also means that we are confident

	<p>that leaks are leaking for a shorter amount of time as we are aware of much sooner.</p> <ul style="list-style-type: none"> • So as you have heard Acoustic loggers are great with metal pipe, but as we replace our network with more and more modern plastic materials, we are also investing a leak alarm system for our plastic network. This is what we call dynamic pressure modelling (DPM). This system uses pressure sensor to analysis changes on the network against the predicted model, so as leaks break out, they create an alert, we can highlight section of the network that we believe is affected, this narrows down the area for our WNT's to investigate. And reduce the time to find the leak, this is critical to our 15% leakage challenge. • So now I'm going to handover to Sophie who can talk to you about some of the Fix technology we have been deploying. 	
<p>Faster Fix [TBC]</p>	<ul style="list-style-type: none"> • Thanks Adam some great faster find solutions • • HI Everyone, I'm Sophie and I'm responsible for Customer operations front line team in Leicestershire • I'm going to talk to you about fast FIX • The piece of kit you can see outside is a Vacuum-Excavator – essentially an industrial hoover for the street. • The Vacuum –Excavator is a great example of where we don't always need to lead innovation, sometimes we are fast followers - We saw it presented by another Water Co and cracked on while they talked about it. • It allows us to excavate and fix leaks much faster therefore reducing the overall volume of water leakage, the disruption to customers and our costs through improved productivity of our repair and maintenance teams. • You'll see Outside one of our teams demonstrating the kits manageability – unfortunately we couldn't dig a hole in the street you'll have to trust us on that front. • In areas where we have deployed the Vacuum Excavator we have seen between 30%- 50% increase in the number of jobs we can complete in a day. • other significant benefit or vacuum excavation are the health and safety of our teams as this reduces manual handling risk & it also help us to avoid cables and other pipes within our excavations. • Another exciting piece of innovation that we are developing in-house at Severn Trent is the Seek-A-Leak. • The Seek-A-Leak is a putty which can be inserted into a customer supply pipe and it can seal a leak. 	<p>Vac-Ex parked inside.</p> <p>Vac ex demo outside whilst talking moving lifting up tipping etc</p>

	<ul style="list-style-type: none"> • This idea was the 2017 winner of our challenge cup. The challenge cup is an annual campaign where employees get the chance to pitch ideas that improve efficiency across Severn Trent. • For those of you at Bruntingthorpe you'll remember that this idea was in early stage development. • We are now half way through a knowledge transfer partnership with Manchester Metropolitan University that is match funded by Innovate UK to take Seek a Leak to the next level and design a putty unique to Severn Trent and the tools required to get it into the pipe. • I'll hand over to Calum who will demo the seek-a-leak on the rig here. For those of you not at the front the footage will also be on the screen to my {XXXX} • DEMO – in the corner • Initial trials indicate we'll be able to repair some really small leaks that would not have been economical to ask our customer to have repaired in the past. • This demonstrate how Severn Trent has taken a great idea from the front line team, introduced some technical expertise via a university & reduced the cost by external funding, to deliver what we hope will a transformational repair technique. • How cool is that! • I'll now hand you over to Matt from our innovation team who will take you through a couple of exciting pieces of innovation that could be potentially game changing 	Set up a rig to do a live repair
Matt Lewis – Technology for the Future	<ul style="list-style-type: none"> • Thanks Sophie great examples of Kit we're deploying to help us be operationally excellent • Hi I'm Matt Lewis my role here at Severn Trent is all about operational technology, the stuff that helps our front line staff do the thing they do safer better & faster than they can already do them today. The next Vacuum excavator or seek a leak. • My team has been working with the Twenty65 programme & more specifically the EPSRC part of the programme looking to use robots to Map, Find & Fix water and waste water pipes. The programme is led by academics from Sheffield & Leeds University & is grant funded to the tune of £7.5m. • We recognise that building robots can be expensive, but we also recognise that finding and repairing leaks from the inside of pipes could transform the water industry. 	Robot from Sheffield Uni

	<ul style="list-style-type: none"> • We are also looking to learn from other utilities who are on a similar journey using robots due to the high potential costs • Severn Trent is excited about the potential uses of robots inside water pipes, but fully understands the high risk and high costs associated. • With that in mind we believe that robotics is the a perfect opportunity to collaborate with other water companies • We believe the proposed OFWAT innovation fund could provide a route for collaboration and funding to take robotics forward in the water industry. • The second concept I would like to talk to you about is Fibre optics. • Fibre offers the potential to have a constant monitoring presence within critical strategic water mains, whilst also providing potential communication links. • Aimed specifically at preventing catastrophic failures by finding leaks early and fixing them before the pipe catastrophically fails and thereby avoiding the cost of responding. • Fibre optics provide an opportunity for using enhanced diagnostics to identify and localise multiple leaks and network issues. It could enable the monitoring of pressure changes, temperature, vibrations, sound and corrosion rate in water mains. • You'll see the picture behind me of A UK first trial which took place in Market Harborough Leicestershire on the 5th Feb 2020, the trial comprised of a temporary 750m fibre optic cable • Point at the rig like this one • That was inserted into a live main via a hydrant and remained 'in situ' for 4 hours monitoring the pipe. Several leaks were simulated on the pipe & the technology pinpointed every leak. • We plan to continue our work in this space to fully understand the opportunity. • I'll now hand back to Stu 	<p>Rolling picture deck showing the first trial picture to be supplied by ED Eaton via Matt Lewis</p>
<p>Stu Wrap Up</p>	<ul style="list-style-type: none"> • Thank you all for listening. Just to recap we have around 50mld of water to save from the network side. The way we will do this is through continuing to Fix and Find faster and continuing to invest in new technology. • All of this we have a demonstrable track record in delivering and so we are confident in delivering this which will wider business benefits • Sarah/Bob will now lead you back to the atrium 	

Customers House		
Steve Witter	<ul style="list-style-type: none"> • HI Everyone, I'm Steve Witter, Head of Customer Leakage Operations. • You will have see (/will see) next door how we are taking bold steps on our network to reduce leakage. In this breakout you'll hear all about the work we are doing alongside our Customers to help them reduce bills and reduce usage. In AMP7 this will in and save c50MLD of water and around £XM of reduced costs from not having to treat and distribute this volume of water as you can see from the slide on the screen • Of the 50MLD to be saved in this area, 36MLd of this will come from reducing PCC and the remainder from reducing leaks on the Customer side for which they are responsible for. • On average our customers use around 130lhd of which we know that only 2% of it is drunk and vast amounts are wasted through overflowing storage tanks and leaky toilets as examples. • We aim to educate as many customers as possible and get them to understand that being Water wise is good for their pocket, the environment and the future generations • Part of this education programme is inspiring future generations to use less water, In the last five years we inspired 600,000 schoolchildren and we aim to do even more – some 700,000 in the next five years – that's 1.3m children over 10 years. • There are so many opportunities. Today many houses have water storage tanks in the loft or attic which all have an overflow and many drip or run constantly. Older toilets have cisterns with capacities of X litres and overflows losing water through a pipe in the wall. • Many customers do not know where their internal stop tap is and many of them are dripping away under a kitchen sink cupboard. To top it off many customers leave the tap running while they clean their teeth, have leaky loos, take baths not showers and are totally unaware that they have a leak on the pipe that is feeding their house (Burst on Private Property or Bopps), that they are accountable for maintaining and fixing if it leaks. • We have learnt so much about customer behaviour and what can affect the amounts of water used within a home that we are confident that we will deliver the 36MLd we need to find. • Neerja and then Rose will talk to you about the two key levers we are using – Home surveys and Metering 	Slide 10.

<p>Neerja</p>	<p>Hello everyone let me introduce myself – I am Neerja Upadhyay and currently working as the Water Networks lead. So let’s see how we can work together to reduce how much water we use whilst still enjoying and using it as we would like.</p> <ul style="list-style-type: none"> • We have a great track record in this area This has been achieved by carrying out targeted customer engagement and awareness campaigns, providing online advice and support, completing home water surveys and the education programme that Steve touched on. • As an example, during the hot dry summer of 2018, we reached 3.5m people across the region were by a water saving the campaign. Over a million people were reached via Facebook. 15% increase in the number of water saving products ordered during the campaign. 65% of those who saw the campaign said it made them more likely to try to save water. Our Wonderful On tap brand look has had a great impact too. • Currently on average each one of us use around 130l/h/d which is good but we can reduce this further. Our home water audits are one area we are seeing great water savings. We already do around 20,000 home visits a year but from April we’ll be increasing this to 35,000 - we know that on average each customer audit saves around 10% of daily use and that means less water needed from our treatment works, less chemicals and less electricity for the pumping making great business sense and it also means lower bills for customers so a win win. The Home efficiency programme will save 19MLD and improving the fittings such leaking loos, and retrofitting taps, showers and toilets within our customers’ homes will deliver 12Mld or a third of the target. • So welcome to our water savvy house and let’s look at some of the great water saving opportunities that help reduce our water use but still allow us to enjoy this wonderful product and we have some party bags for you which you can now all open. These are great simple innovations that have a huge impact on water use in the home. These [X] items will be big contributors to the 12MLD reduction target. • On average about a third of the water in the home is flushed down the loo...and we’re even wasting some of that. Valve flush toilets (the ones with the buttons) are becoming a serious problem. Extensive research we have undertaken in partnership with the wider industry, Environment Agency and NGO’s has demonstrated between 5-8% of toilets are leaking – the main culprits being valve toilets. The average leaks are found to be around 240 litres per day – almost the same as two extra people would use! The problem is it’s not that easy to spot – it’s only a trickle about a half a glass of wine a minute! 	<p>Party Bags with hippo, blue pill, etc.</p> <p>House with features of water efficient house as per previous brief</p>
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	<ul style="list-style-type: none"> • Finding these leaky loos are where your little blue pills are needed. You pop one in the cistern, it dyes the water blue and you can spot the trickle running down into the pan. • For older toilets with larger cisterns (generally those with a handle to flush) wherever we can we convert them to dual flush during our home audits – they’re still a syphon, so don’t leak like a push button (valve) toilet but work the same way with a big and little flush saving water every time you use the little flush. • If we can’t convert them we’ll fit a hippo – these simple bags hold back about a litre of water each time you flush (a bit like the old brick in the cistern trick from years ago, but a lot safer). • Water saving devices such as shower heads reduce the average daily water consumption by around 25litres a day, tap regulators around half that amount. • We must remember though – it’s not just the kit. It’s actually our own water using behaviours that are important. Spotting and fixing leaking loos or overflows, using the correct flush (small when possible), taking shorter showers – we put a timer in to remind you – those last for about 4 minutes as a guide – but all we need is for everyone to reduce their shower time by a little bit. It’s also important to think about loading dishwashers (they actually use less water than washing by hand), using short cool washing machine cycles, collecting rainwater to use in the garden – all these little changes can make a big difference. • I’m sure you’ll agree that these are all great ideas, especially given the real shift we have seen in recent times in consumer perceptions and behaviour around climate change. If we can influence the types of appliances that customers buy to shift to more efficient washers and dishwasher for example the impact only increases. • I’ll now handover to Rose who will talk to you about Metering and BOPPS 	
Rose	<ul style="list-style-type: none"> • Hi, I’m Rose Jolly and I work in our Innovation Team • In AMP7 we are going to fit at least half a million meters, all of which is funded through our price settlement. This is 186% more than AMP6. This will help us in two ways, we will be able to identify customer side leakage and also reduce demand which helps PCC. • The average burst on a private pipe (Bopp) in volumetric terms is 500 litres per hour and currently we find circa 10,000 of these a year. With the extra meters we believe that we will find around 5,000 additional leaks per year in AMP7 which equates to around [5MLD} reduction. & remember you’ve just heard Sophie explaining how we can repair these leaks quickly and cost effectively using Seek-A-Leak. 	Boundary box and meter set upon plinth.

	<ul style="list-style-type: none"> • We know that by having a water meter the way people use water will change. We call this a demand impact of metering and we estimate it equates to around 10MLD – that means the combined impact of the extra 500k meters is 15MLD reduction. • But why is metering so good? it obviously costs to install meters. • Well first off it focuses the mind for sure. I have one at home and knowing that you are on a meter does make you think more. We typically see a 10% reduction in water use for customers that engage with water efficiency. Small changes in our habits such as shorter showers, turning the tap off whilst brushing our teeth and a water butt in the garden can all make a big difference. • And an additional advantage of a customer having a meter is that we can identify a Bopp (burst on private pipe) or an internal leak quickly and prevent a customer receiving an inflated bill, this has informed our Metering strategy for AMP7. • We install the meter by screwing into a boundary box which is in a chamber on the edge of the property. (point to the boundary box and meter set up) • Once the meter is installed our engineer will immediately see if we have any leaks on the underground or internal pipes. • We screw the meter in, turn on the supply and Bingo! if the meter is whizzing round it means we have found a leak (point to boundary box). We will then locate the leak and talk to the customer about how they can best make a repair. • Since the leak is on the customers' pipe work, it is their responsibility to repair. • So you can see that metering is actually a really good way of impacting both ODIs 	
Steve Witter	<ul style="list-style-type: none"> • Thank you all for listening, please go home and use your freebies and tell your friends and neighbours - whichever region you may live in. • Over to Sarah / Bob to wrap up.... 	
Bob / Sarah Wrap at end	<ul style="list-style-type: none"> • So I hope you've enjoyed the two breakouts where we have brought to life both our progress and future plans. All of the things you have seen today is working towards a sustainable water operation for the future. This means managing more extreme weather, rising customer expectations and regulatory performance targets, all of which are factored in and we are confident that we have the right plans to deliver. 	

