

## Teccura Response to Ofwat Consultation

### *"Reliable services for customers - consultation on Ofwat's new role in resilience"*

Thank you for the opportunity to respond to this consultation. Our thoughts are captured below.

**Question 1: Is our basic understanding of resilience aligned with your own - are we addressing the right things in the right way?**

We think you have a good understanding of resilience and are addressing the right things in the right way.

The ten principles seem all encompassing and the definition of resilience well worded.

**Question 2: Do you agree with our view of what Ofwat should deliver, including where we might step in, and what is for others to deliver?**

**What Ofwat should deliver?**

The first bullet point on page 16 perfectly sums up what we think Ofwat should deliver. That is: "Helping to improve understanding of resilience risks and opportunities."

We think Ofwat should deliver a platform for service providers to share information about schemes they have implemented to improve resilience.

If one service provider develops a good solution for a particular problem, they should be encouraged to share their findings with other service providers who may have similar problems. This keeps the costs down for consumers across the country.

One way to encourage information sharing is via a 'resilience portal'

website or something similar.

As part of their latest price review, Ofgem set up an information sharing portal to encourage network innovation and information sharing. The "Smarter Networks Portal" is hosted by the Energy Networks Association at <http://www.smarternetworks.org>.

### Where should Ofwat step in?

If we think delivery should be about encouraging information sharing, we think Ofwat should step in where one developed resilience scheme could have benefits across the entire sector.

Here's a real example where Ofwat could step in, taking the shared learnings of a small resilience scheme and encouraging delivery across the entire country.

In 2013-14, Water service providers in England reported a total of just 29.5 MI/day of underground supply pipe leakage at measured non-household customers.

This figure is wildly out.

We've worked with eight water and sewerage companies and five water only companies. We know for a fact customer side leakage at non-household properties is closer to 300 MI/day. That's 11% of the total leakage in England.<sup>1</sup>

In a bid to improve security of supply, and therefore resilience, one water and sewerage company and one water only company have investigated further. Together they have fixed 5.746 MI/day of leakage and wastage, that had on average existed for 6.5 years, at 121 different properties.

The scheme has been running for the last four years. It takes 46 days on average from identification of the issue at the desktop to repair of the leak and increase in resilience.

This is just the tip of the iceberg. Savings have been limited - not by how much exists - but by budgetary constraints. That being said, this scheme has still already made 24.5% of the water savings expected by Southern Water's Universal Metering, at 2.5% of the cost.<sup>2</sup>

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<sup>1</sup> We can provide a report that proves the existence of 300 MI/day of leakage after non-domestic customers' meters.

<sup>2</sup> Southern Water's Universal Metering cost £82m and hopes to save 22 MI/day. Taken from P142 of Southern Water Resources Management Plan 2015-40, Technical Report

This approach would work across the country, offering resilience at a better price for end consumers than traditional "pouring concrete" schemes.

Ofwat's role should involve stepping in to encourage service providers to implement tried and tested schemes that can have a big impact on their resilience objectives.

On page 25 of the report, you talk about seeking "individual reports...on company specific or cross cutting sector resilience issues." Perhaps this is one way to do that.

#### What is for others to deliver?

Ultimately we agree with you that it is up to the service providers to implement the correct combination of projects and programmes of work that make sure their networks maintain resilience.

#### Question 3: What views do you have on how the water and wastewater sector might measure its performance in delivering resilient services - and the best way for us to demonstrate that we are carrying out our role?

We think the best way for you to demonstrate you are carrying out your role is through the publication of information.

Whilst we appreciate June Return Tables and Commentaries are not accessible for everyone, there is a wealth of information in these reports that people can use if they want to.

One leakage manager has told us that they still have to do all the same work of the June Returns, the information just doesn't get made public any more.

Having the information publicised also helps companies working within the sector to innovate and come up with business solutions that help service providers.

Overleaf you'll find eight short examples from the customer side leakage and wastage scheme run by the water and sewerage company and the water only company that have boosted supply headroom by 5.746 Ml/day

# You can stop 300 million litres of water getting wasted every day

Eliminating this waste is one simple step in securing our precious resources

Huge volumes of excessive consumption are waiting to be found at commercial properties.

This customer side leakage, wastage and inefficiency often goes unnoticed for decades. It accounts for 9% of all leakage in the UK.

Eliminating this waste is a very unobtrusive way for you to build resilience into water resources. Far easier, you'd imagine, to fix a few leaks than to build a reservoir on someone's doorstep.

This wasted water goes undetected by current industry practice, but isn't undetectable. These

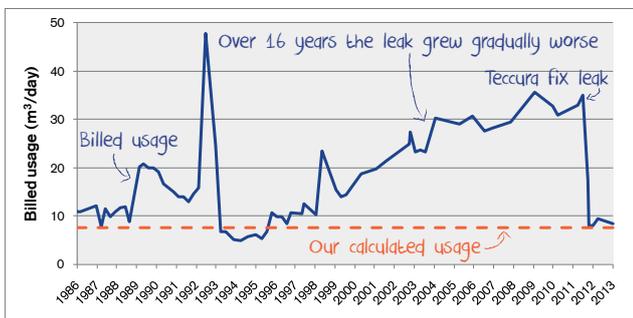
problems are virtually impossible to find. But the industry can now find them - with CCA.

How do we prove the scale of the problem? Well, in these eight examples 572,000 litres of water was wasted daily.

What's more, the problems went unnoticed for an average of ten years. Both the water company and the bill payer were completely oblivious to the excessive consumption.

Fix more problems like these and you'll significantly increase the security of our supplies.

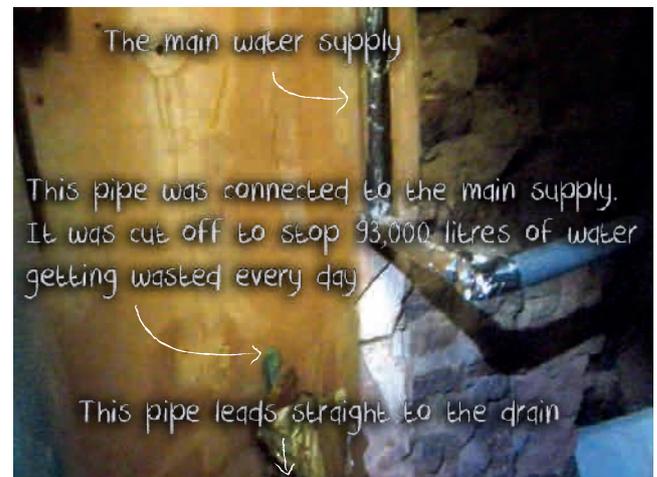
**Case 1:** Over 13 years, a leak near the toilet block at this school grew gradually worse. In total 80 million litres - or £100,000 - of water was wasted here. That's a lot of books.



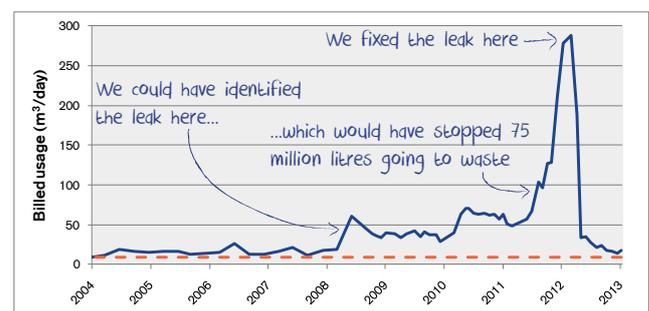
**Case 2:** Residents at this retirement home struggled to pay their communal bill for four years. Usage had crept from 9,200 to 51,300 litres per day, due to a leak in the courtyard.



**Case 3:** At this five star hotel, 93,000 litres was going, literally, straight down the drain. For six and a half years! Annual bills were £55,000 more, but the leak was masked by genuine use.

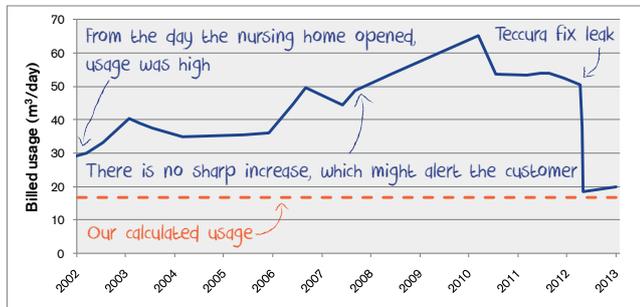


**Case 4:** Leaks get larger over time. We could have resolved the leak at this college in 2008. It would have stopped 75 million litres going to waste over the following five years.



# Water feature defies drought ban

**Case 5:** This nursing home's consumption had always been high. This made it difficult for anyone to notice there was an issue. Over 10 years, 100 million litres was wasted at this site.



Without a calculation of usage, how do you know usage is high?

Shutting the property's internal valve stopped the meter rolling on. This proved the wasted water was somewhere on the property.

The supply feeds nine loft tanks. We accessed all nine tanks. No problem with any of these.

There was no sign of wastage in the communal bathroom. The kitchen looked fine too.

Where was the excessive consumption? It was a right head-scratcher.

Eventually, we found a tenth tank, supplying the water feature. The feature was turned off due to the hose pipe ban. Ironically, the tank for the feature was overflowing. The ball valve was jammed open. Every day 32,000 litres of water was pouring down the drain.



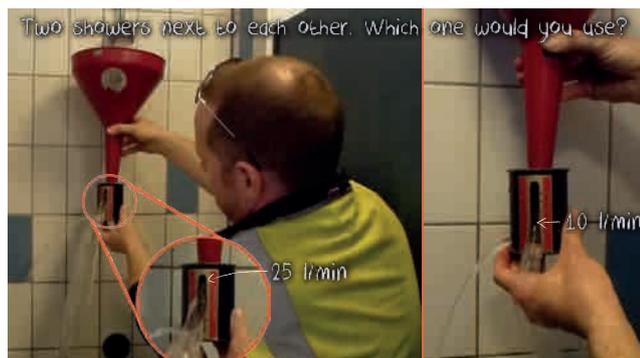
The water feature was turned off, due to the drought. The tank had been free-filling for ten years, because the ball valve was faulty

# An afternoon spent chasing showers

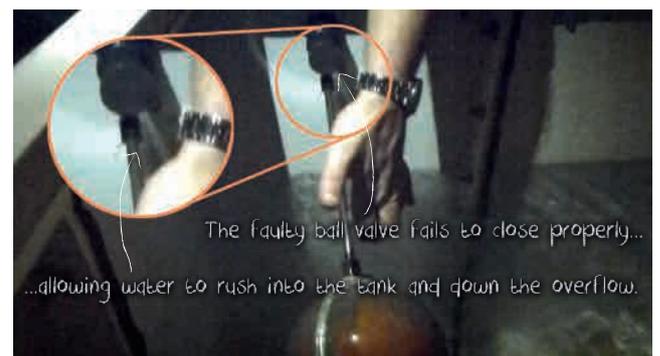
**Case 6:** Excessive consumption is hard to find. It took all afternoon to uncover the problems at this leisure centre.

We measured the flow rate of the centre's 21 showers. 19 had normal flows of 11 l/min. Two rogue showers had flows of 25 l/min. An extra 5,000 litres per day was consumed because of this inefficiency.

The centre also has two tanks. One of these



Which shower would you use? I'd go for the gushy 25 l/min one



Accessing tanks is time consuming. This one had a faulty ball valve

had a faulty ball valve. Each night 5,000 litres of water overflowed from this tank.

The UK has 26,863 sports facilities. Imagine testing every shower and tank at all 26,863.

Remember just 0.4% of sites have issues. We can pinpoint the 107 problem sites from the desktop. This prevents lots of needless and costly site visits. It also means we can invest hours at one site until we find the problem.

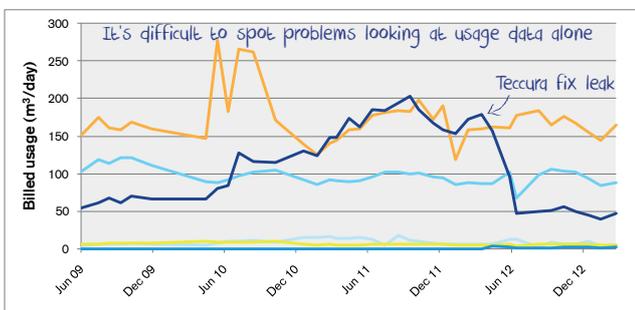
# “High use? I think it’s normal”

**Case 7:** Commercial properties are difficult to analyse. This mixed purpose development has:

- 50,000 m<sup>2</sup> of office and retail space
- 180 bedroom luxury hotel
- 2 health spas, gym and swimming pool
- 735 flats

How much water do you think it should use? 100,000 litres per day? 250,000? 500,000?

The total usage was 419,000 litres per day. How do you know if this is high or low?



How do you know if the usage on these six meters is “normal”?



Decayed rubber seals were letting water by at over 250 toilets

Consumers and water companies simply don't know what their consumption should be.

The General Manager's reaction when I first spoke to him says it all. “High use? I think it's normal. We're a big site.”

He was all smiles after repairing 250 faulty toilets. His daily usage was 110,000 litres lower.

We knew that 419,000 litres per day wasn't “normal”. That's because we'd calculated the site to use 322,000.

# No two ‘proper-trees’ are the same

**Case 8:** Over 18 years, 28 million litres of water was wasted at this school. This tree wasn't complaining: the three leaks were by its roots.



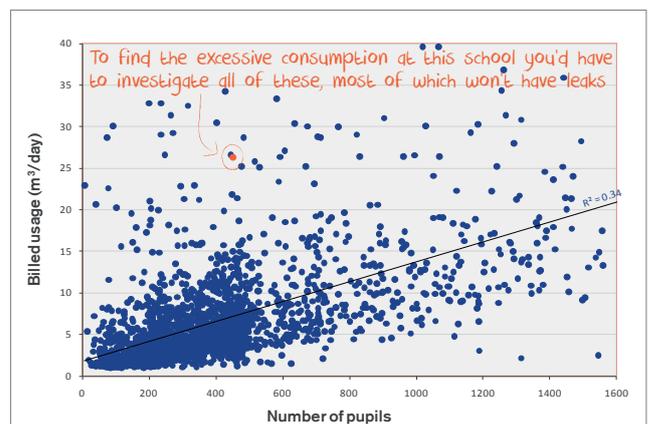
The playground tree lapped up this 20,000 litre per day leak

Some may wonder if you could find these problems through benchmarking.

We've plotted water use against pupil numbers. The school does sit above the line of best fit, but correlation is poor. You'd end up visiting lots of schools without leaks, which quickly becomes very expensive.

No two properties have the same combination of facilities and demand placed on those facilities. Benchmarking water use against one variable is too simplistic. It is inaccurate.

To find these issues cost-effectively, you need to calculate water usage based on actual facilities and actual demand. That's what CCA does.



The correlation when benchmarking is poor, so you'd end up visiting lots of schools that don't have a problem

# 0.4% of commercial properties have excessive consumption. That's just several thousand out of the 1.5 million in the UK

Resolving these will reduce consumption by at least 300 million litres per day.  
CCA can find it - and YOU can make it happen.

Six reasons why eliminating this huge amount of waste is a fantastic thing for you to do:

## 1. You reduce leakage by 9%

It's a very cost-effective reduction, with a pay-back period far lower than 12 months. The resource commitment required by the water companies is minimal and there isn't any risk.

## 2. You can measure all the savings

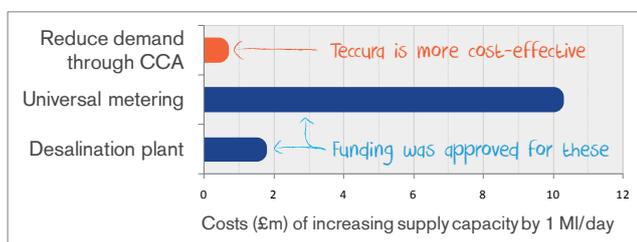
Savings from cistern displacement devices etc. are only ever assumed. But you can use meter reads to report exactly what you've saved.

## 3. You cause very little disruption

There is none of the disruption caused by pipe relays. Nor is there the intrusion of entering thousands of homes to fit new shower heads.

## 4. You increase supply capacity at low cost

Reducing waste is an extremely cost-effective way for you to significantly increase supply capacity. Compare the costs of reducing demand to universal metering or desalination. Reducing waste also has no ongoing costs. Desalination would use masses of electricity.



Reducing wasted water is an inexpensive way to increase capacity

## 5. You reduce carbon emissions

Reducing supply by 300 million litres per day reduces CO<sub>2</sub> emissions by 103,000 tonnes. It's akin to taking 44,500 cars off the road.

## 6. You can start saving water now

You'd wait years for a new reservoir to be built. You can start reducing wasted water today.

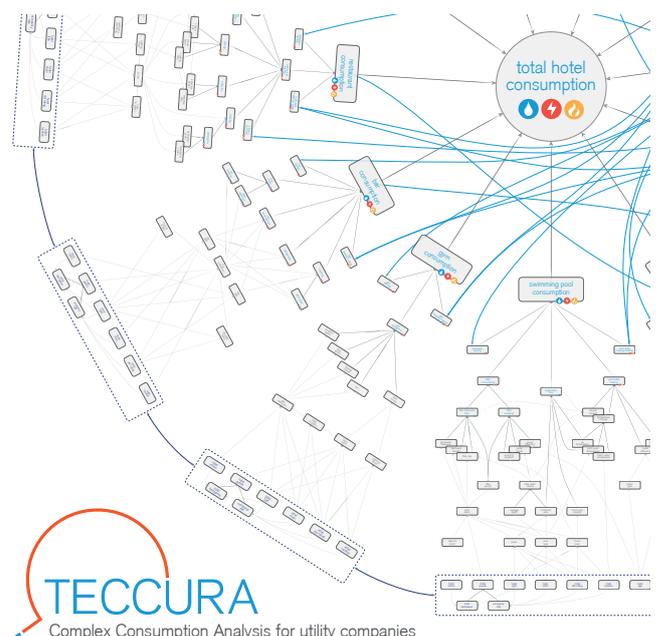
**So what is CCA?** It's our way of accurately calculating utility consumption at individual commercial properties.

Commercial properties are very complicated. Customers and water companies don't know how much water their property should use. It's the underlying reason why the wasted water in the case studies went unnoticed for ten years.

Through CCA we have individual calculations of water usage for 538,000 of the UK's commercial properties. By comparing what we calculate each one to use to what they're being billed, we can find you wasted water that other methods just can't find.

Benchmarking won't identify this wasted water. Data analysis won't. And you can forget walking the streets with listening sticks!

We know of thousands more sites. You can help set policy to get them resolved. This is too big an issue to sweep under the carpet.



Teccura's complex hotel consumption model. Intrigued? Watch the video at [teccura.com/complex-consumption-analysis](https://teccura.com/complex-consumption-analysis)