



A water company perspective

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Water Services – Key metrics

- 2,800 million litres of water per day to 8.5 Million Customers
- 100 Water Treatment Works
- 30 major raw water reservoirs
- 75% of raw water from rivers, 25% from groundwater

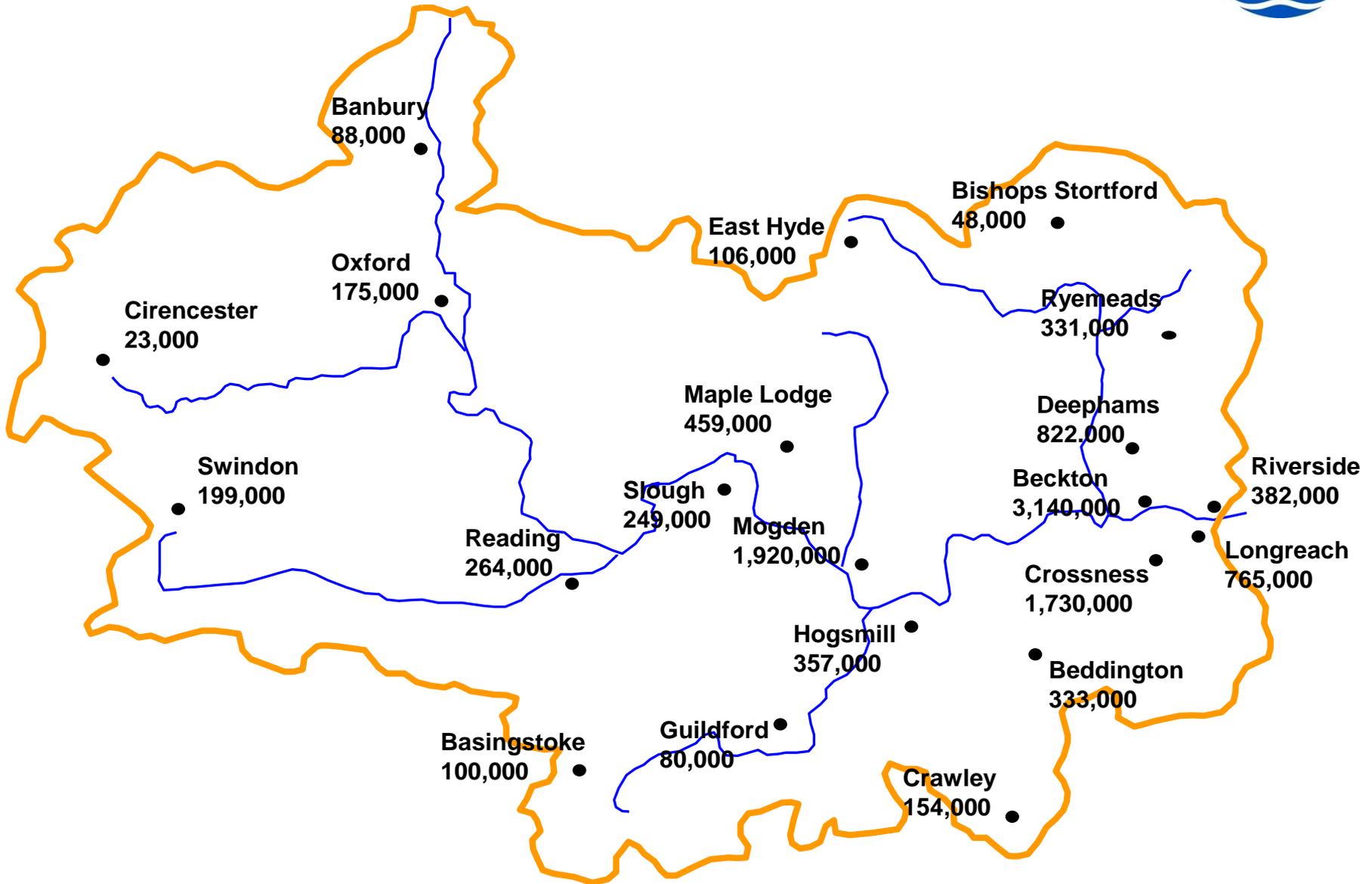


Key Metrics - Wastewater Services

- 5.7 million connections to network serving over 13m customers
- 349 sewage treatment works receiving 4.3 million m³/day
- 70,000 km of sewer
- 2530 pumping stations
- c 800,000 manholes
- 330,000 tonnes of by-products recycled per annum.



Major Sewage Treatment Works



Mogden STW, Twickenham, West London



Leckhampstead STW, near Newbury



Support for the AMI



- We are an environmental business. A private company but delivering a public service.
- Biological data more complex, but gives a better picture than chemical analysis
- Early warning of potential problems
- Transparency, trust and credibility
- Citizen science and the Big Society
- 9 groups, 39 sites, 55 volunteers
- Can we do more together?

Look Up Tables (LUT) and Absolute Numbers



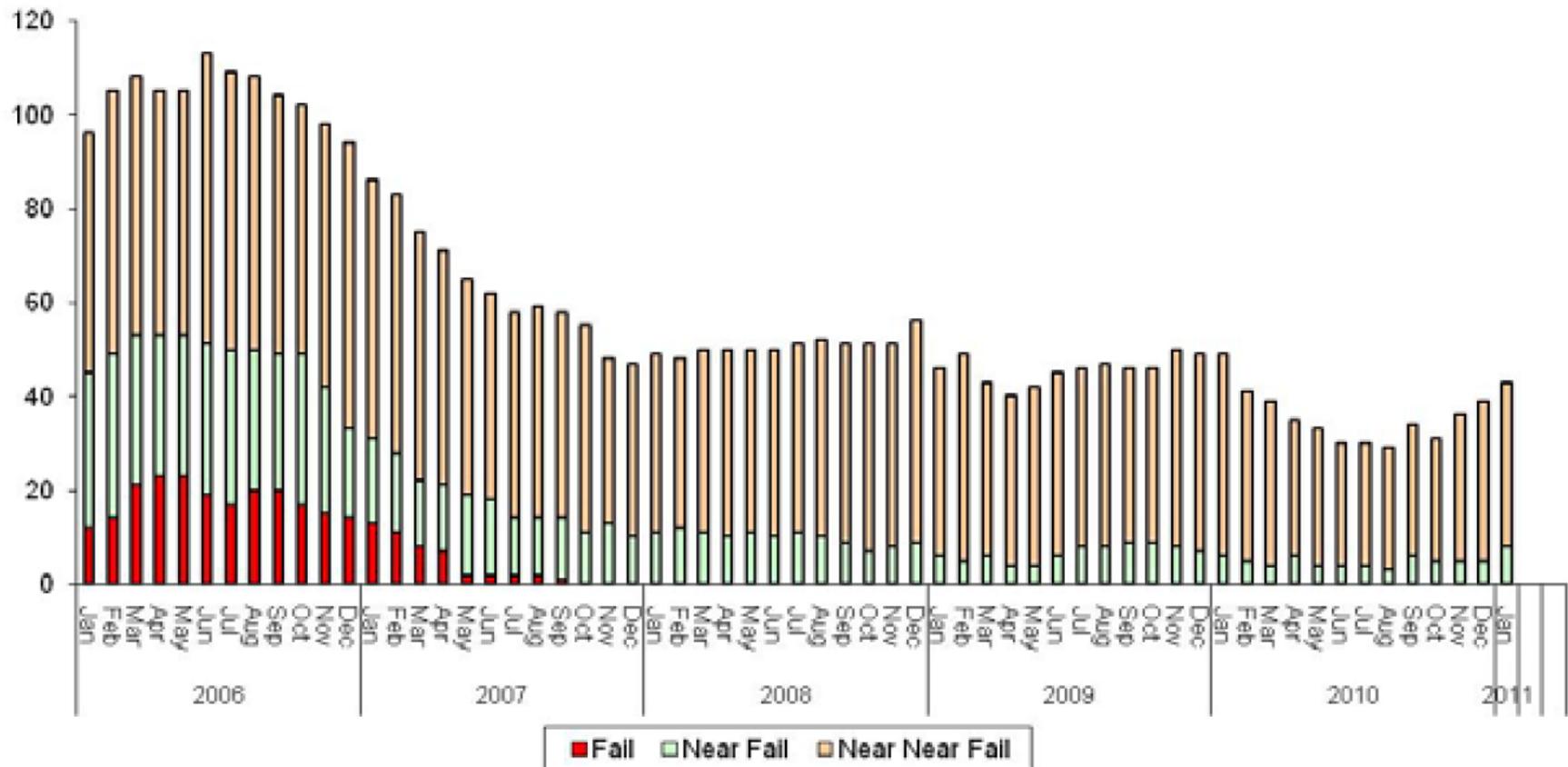
Beddington		
	LUT limit (mg/l)	Absolute limit (mg/l)
Suspended Solids mg/l	15	
Biochemical Oxygen Demand mg/l	10	50
Ammonia mg/l	2.5	20

An exceedence beyond the absolute limit is an immediate sample failure.

100% compliance since Sept 2007



STW Works – Failing, Near Failing and Near Near Failing



Operator Self Monitoring



- A Polluters Charter?
- Not something we wanted. More expensive and perceived as ‘soft option’. However:
 - More samples and a more robust process
 - Sampling is by independent internal team with no prior notification
 - Failure to collect samples as per schedule declared to EA is a consent failure
 - EA audit the OSM process and continue to sample rivers and works



Back Up

Samples taken per year by Thames on STW's



Urban Waste Water	1850
OSM (Consents)	4240
Operational	9850
Sludge	2160
Total No. of samples	18100
Operational and Regulatory Samples per hour	2
Regulatory samples per hour	1

All regulatory samples are analysed by our ISO 17025 Lab. Operational results are a mixture of on site tests and laboratory analysis.

Available Telemetry



- Thames has 349 STW's.
- 9 Sites are 24/7 with site control systems, such as Mogden
- Of the remaining 340:
 - 122 send process signals effluent signals back to our central control room.
 - The remainder are small generally equivalent to less than 3,000 people and low risk. Many are so small they have no power on site.

Samples numbers and permitted exceedences.

Samples taken in twelve months	Samples permitted to exceed 'Look up Table' limits from the Consent.		Samples taken in twelve months	Samples permitted to exceed 'Look up Table' limits from the Consent.
4-7	1			
8-16	2		172-187	14
17-28	3		188-203	15
29-40	4		204-219	16
41-53	5		220-235	17
54-67	6		236-251	18
68-81	7		252-268	19
82-95	8		269-284	20
96-110	9		285-300	21
111-125	10		301-317	22
126-140	11		318-334	23
141-155	12		335-350	24
156-171	13		351-365	25

**Sample numbers used on sites with a population <250.
Typical target sample numbers for a stable site.**

Exceedences are allowed beyond consent but below absolute levels.



EA Audit (2010) into OSM and Urban Wastewater Treatment Directive Programs

■ Overall Assessment Comments

“Thames Water have taken the implementation of operator self-monitoring seriously. They have produced detailed monitoring procedures as part of their Quality Management System and the management structure provides enough separation between the monitoring activities and Operations.

Staff appear to be well informed and well trained. Sampling facilities enable representative samples to be taken and there is a program to correct the minor issues identified as part of our site inspections.

The company have a rolling programme of auditing their monitoring. This has ensured that there were no missed samples in 2009 and all missed determinands were rescheduled.

There were some early teething problems with reporting, but these have generally been ironed out during the year.

We are confident that Thames Water are meeting the requirements of Operator self-monitoring.”

United Kingdom Accreditation Service Assessment Report (2009)



■ Comments (Excepts)

Executive Summary

It has been evident from this visit that the concerns raised at the pre-assessment visit have not only been rectified but in some cases improved upon. The effort that has been put into getting the system to this level is commendable and sets a high standard for the continued maintenance and further improvement of the system.

Technical Competence

OSM sampling has been organised such that it is a random but regular event ie monthly but the date and day of week is not the same each month. The requisite 10% of samples are scheduled for out of hours. The 2010 sampling plan has been drawn up, and there is no evidence that this can be accessed by operations staff.