

FOGs build up and removal: problems and solutions
Cranfield University
24 March 2010

Opening speech

“Framing the problem”

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Good morning and thank you Raffaella for that Introduction.

I should perhaps clarify my position. I have just set up my own business – Policy Consulting Network. Up until last month, I was Deputy Chief Executive at Water UK – the association representing all the water and wastewater companies in England, Wales, Scotland and Northern Ireland. My role at Water UK included specific responsibility for sewerage policy – hence my interest in FOG and involvement in this conference.

But before I start, I would like to thank Cranfield, Anglian Water and the sponsors for enabling this conference to go ahead and for you for being here today.

We have a long history of sewers and sewerage in the UK. The Victorians built us superb systems which in most cases are still effective today.

However times move on and the challenges for sewers have changed.

But first let's put the scale of the system into context. There are around 390,000 kilometres of sewers in the UK. In popular terms the same as the distance from the Earth to the moon. Water and sewerage companies in England and Wales plan to invest almost £1.15 billion pounds over the next 5 years reducing the risk or incidence of sewer flooding to over 5000 properties.

But I don't want to focus on sewer flooding – though it has a devastating impact on those affected – but to use it to demonstrate a point. And that is – that we really need to make the best use and maximise the capacity of our existing sewer infrastructure.

I'd like then to touch on those new challenges facing the sewer networks

- I'm talking about climate change and changing weather patterns –and the more intense rainfall that brings.
- I'm talking about growing populations and changing demographics – the increasing number of single person homes and higher water use.
- I'm talking about more hard surfaces and greater run-off.

All of these contribute to increased loading on the sewer network. So the pressure is on and that pressure is growing.

We can't upsize all our sewers to cope with different uses and disposal of other materials. It would incur a huge carbon footprint, the disruption would be enormous and it would not be sustainable

It's self evident then that we shouldn't compromise the network by putting it to new uses it hasn't been designed for.

So why, I ask, do we allow people to put fat, oils and grease down the sewer, why do we allow food waste macerators and why do we allow the disposal of so-called "flushable products" down the toilet?

I'm struggling for the answers here. But we need to address the problems and the mindset that thinks that sinks and toilets are just wet waste bins. They're not.

I'm sure we'll hear similar problems from other countries and I'm anticipating hearing some novel solutions. That's why we're all here today – to think widely, listen to what works and exchange great ideas.

But I'm certain it's not just about regulation and enforcement. We need an attitude change amongst users – whether that's staff working in commercial kitchens or people living in their own homes. So it's got to include education and awareness.

But moving on to fats, oils and grease.

We like to eat out. We like to eat 'on the go'. So there are more and more restaurants, cafes and fast food outlets. The Cranfield conference programme says the production of oils and fats for cooking has trebled since the 1960s. Hundreds of thousands of litres of FOG are used every week and much of it ends up in the sewer instead of being disposed of correctly or collected and recycled.

I've told you why we don't want this in our sewers, but a few headline numbers are always instructive.

- 1) Research by WRc suggests that blockages account for 55% of sewer flooding incidents in the UK and more than 3,000 incidents of property flooding.
- 2) There are approximately 200,000 sewer blockages throughout the UK every year. It's estimated around 75% are caused by fats, oil and grease.

- 3) Over £15 million is spent annually on reactive blockage clearance nationwide, with further costs for cleaning up after flooding incidents.

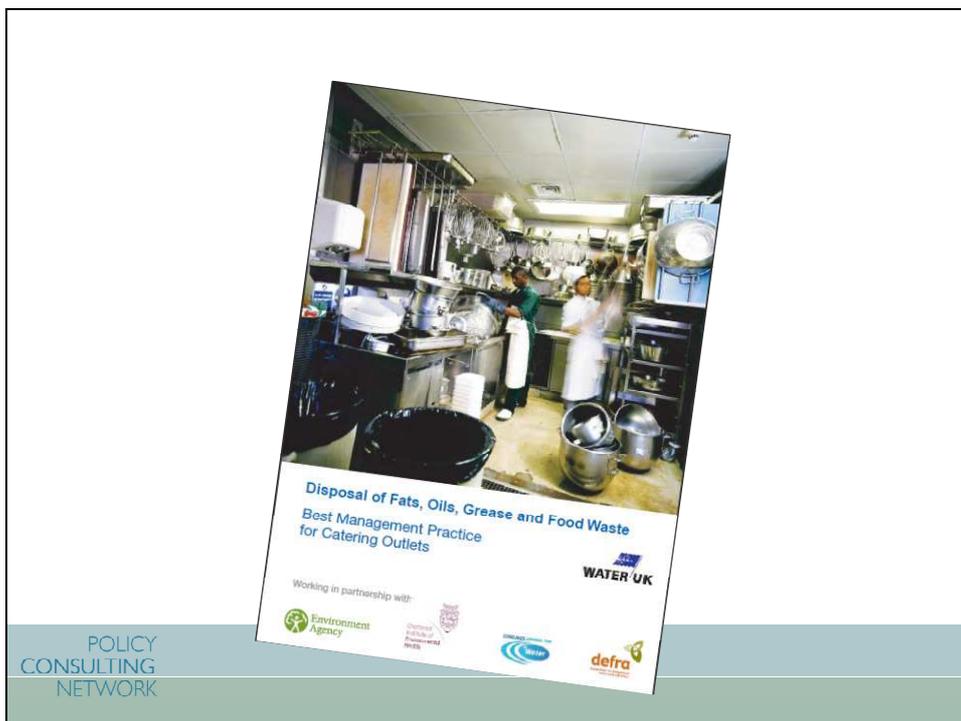
So what, in the UK, have we been doing about this?

Well there is an industry group attached to Water UK that covers 'sewer network abuse prevention' – the eloquently named “SNAP” group. As the person responsible for sewerage policy at Water UK, it was my privilege to work with the people from this group and from external organisations to try and reduce the FOG problem.

I like to think we were successful – at least in starting to make a difference.

We didn't set out to change the legislation – but maybe we should. I hope today's discussions will give us a better steer on that. What we did do was set out on an education and awareness programme, trying to change current mindsets and practices.

Working with the water and sewerage companies, the Environment Agency, the Chartered Institute of Environmental Health and the Consumer Council for Water, we developed a guidance document – “Disposal of fats, oils, grease and food waste – Best Management Practice for Catering Outlets”



This 8 page guide covered:

Training; preparation before washing; grease traps and interceptors; food macerators; enzyme dosing; waste oil storage; recycled waste cooking oil; waste oil collection; and gives an outline of the legal requirements.

In conjunction with this, many water and sewerage companies set up their own “Stop and think – not down the sink” campaigns, often working with local environmental health officers. The guide was well received with several local authorities also requesting copies to use in their own visits.

The guide also came with a plastic encapsulated “dos and don’ts” card



– a reprint of one of the pages with graphics, which could be fixed above the sink and understood by staff whose first language is not English.

Water UK also produced a one page guidance note on grease traps.

Both documents are on the Water UK web site and both were issued to restaurants, cafes, hotels and fast food outlets by water companies and environmental health officers

I mentioned ‘legal requirements’ – but just what are these in the UK?

Well, it is far from clear and several pieces of legislation could apply. However I’m not aware of any direct prosecution for discharge of fats, oils and grease to the sewer.

To my knowledge, there are four pieces of relevant legislation – the Water Industry Act; the Environmental Protection Act; the Building Act and the Food Safety Act

First of all - Water Industry Act

It is a criminal offence under section 111 of the Water Industry Act 1991 to discharge into the public sewers any matter which may interfere with the free flow of wastewater. Also, where the water company has incurred costs in removing blockages, cleaning sewers, investigating and remedying flooding or pollution incidents, it can take legal action to recover these costs.

Secondly – the Environmental Protection Act

The local authority's environmental health department will deal with any reported complaints of "statutory nuisance" such as smells, effluents, or any premises in such a state as to be a nuisance or a risk to health. Where a statutory nuisance exists the local authority has to serve an "abatement notice" under Section 80 of the Act. Failure to comply can result in prosecution and the local authority also has the power to carry out work to remove the nuisance and recover their costs.

Thirdly – the Building Act

Section 59 of the Building Act 1984 enables a local authority to require satisfactory provision for drainage of an existing building by serving a notice on the owner. This can include a requirement for the installation of a grease trap.

Finally – the Food Safety Act

Local authorities are authorised to inspect premises under the Food Safety Act 1990. Problems arising from the effect of fat, oil and grease on drains, resulting in a failure to comply with the Food Hygiene Regulations, could result in prosecution or an emergency prohibition order preventing trading from the premises.

So the law is not really set out to specifically prevent or control discharge of fats, oils and grease to the sewer. The incentive on the kitchen owner is more to comply with environmental health requirements. And this is easier to enforce than trying to identify a specific kitchen that has previously discharged FOG to the sewer

An alternative to legislation is requiring some form of consent. It's interesting then, that for other discharges from commercial properties the owner must obtain a trade effluent consent from the water and sewerage company. This will specify the composition of the discharge, including maximum concentrations for specific substances.

I understand something similar for FOG operates in other countries with permitted levels of FOG in washing up water specified, for example 100mg per litre

I pose the question – could this work in the UK? And how does it work in those countries that have such a requirement? How do water and sewerage companies monitor and enforce such a standard? I'd like to hear more about that today.

So with limited legislative powers and the focus being more on public nuisance or environmental health, what else are the companies in the UK doing now?

Well I know Anglian Water are doing some excellent work following the launch of their FOG Mission Statement, including a free waste catering oil collection service.

However I don't want to steal Steve's show later this morning so I'll leave you with that appetizer – probably an unfortunate word in the context of fats, oils and grease - but you know what I mean.

Of course Anglian aren't alone. This is a national, well international problem.

I'll give a couple more examples

South West Water launched its own "Stop and think..." campaign and like others reiterated the message to householders just before Christmas. They estimate they have dug 3000 tonnes of FOG out of their sewers.

Severn Trent Water had a major campaign focused on one town – Stourport. The town had a history of sewer blockages, which also led to bad smells. A build up of fat, oil and grease was always the main cause of blockages. Severn Trent installed fat traps in several restaurants and takeaways in the town as part of a trial and found dramatic results. In the six months since the scheme started there hasn't been one single blockage in the drains, as a result of a build up of FOG.

Severn Trent suggests the benefits of installing a fat trap are huge and immediate, and believe the trial proved that pouring fats down the drain was causing the majority of sewer blockages. However they are now having to empty the fat traps every 2 weeks and they each hold 40 litres of FOG.

I look forward to hearing more excellent examples and case studies later today.

So in conclusion

I was asked to "frame the problem". I hope you've now a clear idea of WHY at a strategic level this is a problem for the UK and also HOW SERIOUS this is for the companies and for customers.

We're moving forward on the education, awareness and partnering front but what else could - and should - we be doing to maintain the capacity of our sewers?

Should there be new legislation – with maximum permitted levels – rather than relying on the voluntary approach? And, if so - how could such legislation be enforced?

Should there be some form of trade effluent consenting?

Should there be more help given to caterers – like the Severn Trent example? But isn't this just transferring a legitimate business cost from business owners to customers in general?

What other methods should we pursue? Can we do more on education and awareness?

What are other countries doing that has succeeded and achieved real reductions of FOG in sewers? What works?

Many questions I know. I don't have the answers, but I'm hoping our discussions today will help us find them.

I'm looking forward to the presentations and discussions

Thank you.