Behavioural economics in regulated utilities : Anglian Water's experience

UKCN Consumer Remedies Workshop, June 2017

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Summary of presentation

Alex Plant is the Regulation Director at Anglian Water Services. Previously, as Programme Director of the Market Reform and Head of Policy & Regulatory Strategy, he supported the opening up of the retail market for business customers, developing regulatory and competition policy approaches to upstream competition, liaising with Ofwat and the water industry.

This presentation was given by Alex at the fourth workshop of the UKCN Consumer Remedies project held at the CMA on 22 June 2017. The second half of this workshop was focussed on working with regulated companies.

Outline

- Anglian Water Case Studies:
  - *Keep it Clear : broad customer base*
  - *Slug it Out: targeted sectorial approach*
  - *Bad Debt: targeted customer base*
  - *Reducing water use: making the most of smart meters*
  - The role of regulatory incentives

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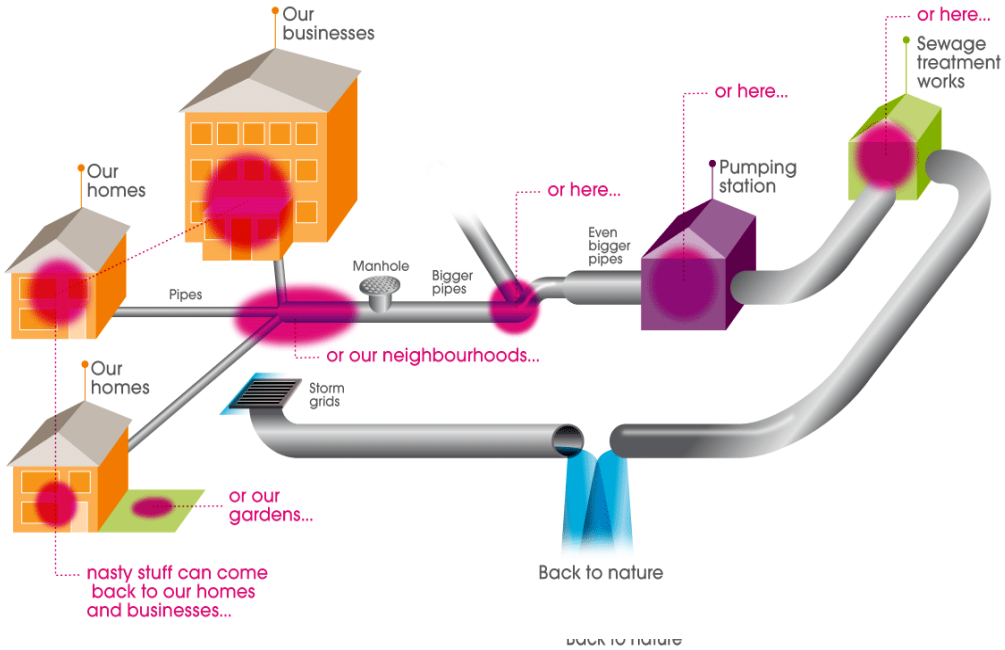
Keep it Clear: reducing blockages

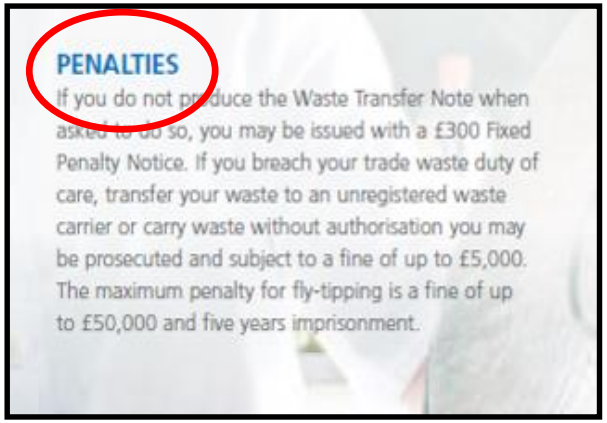
- 30,000 blockages a year in our sewer network: risks serious environmental pollution and sewer flooding in homes and neighbourhoods
- 80% avoidable: caused by un-flushable items & fats, oils and grease
- Majority of all pumping station failures are the result of blocked pumps (not mechanical failure)
- Cost to prevent blockages before they occur is £4m+ a year in the region. Extra costs of dealing with blockages once they occur and resulting sewer flooding and pollutions
- All contributes to cost of water bills
- Average cost of call out for private drainage clearance is between £60 and £240

Effects of blocked arteries



The sewer network plays a key role in protection of public health but it is in need of some protection itself.

How we used to do it



Keep It Clear: social marketing

1. Understand the context

- evidence review and operative interviews to analyse causes, identify local hotspots and learn from others

The problem isn't the avoidable sewer blockages…

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2. Understand the audience and behaviour

- profile target groups using TGI
- qualitative research to understand motivations, benefits / barriers and define behavioural goals

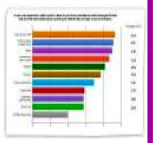
…it's the **behaviour that leads to the avoidable blockage**

3. Develop strategy and pilot interventions

- identify key messages and channels, create materials

4. Evaluate impact

- quantitative pre and post survey to measure changes in awareness, attitudes and behaviour
- analyse blockage data

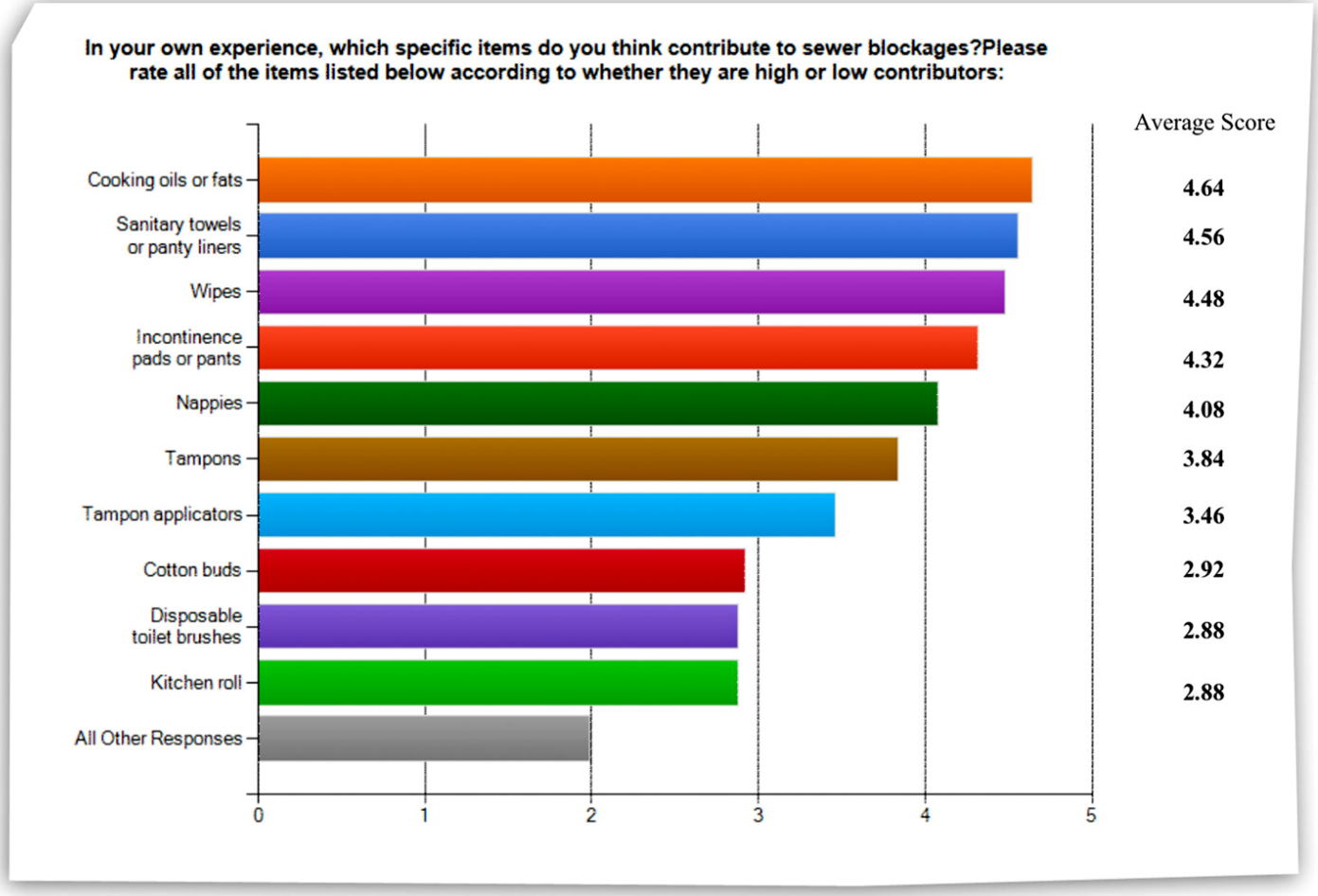


5. Refine and roll out

- learn from what has worked well and roll out regionally

The Keep it Clear campaign originates from the belief that **you fix the cause, not the symptom.**

We identified the views of collection managers



- Analysing average scores by blockage contributor type
- Cooking oils and fats, sanitary waste and wipes are the top contributors

Source: Manager Survey Sept 2010 (Survey Monkey)

Rated high impact material streams against these criteria

- Evidence of impact
- Backed up by sewer worker experience
- High audience inclination and ability to act
- Resources required to succeed
- Probability of success

Total impact

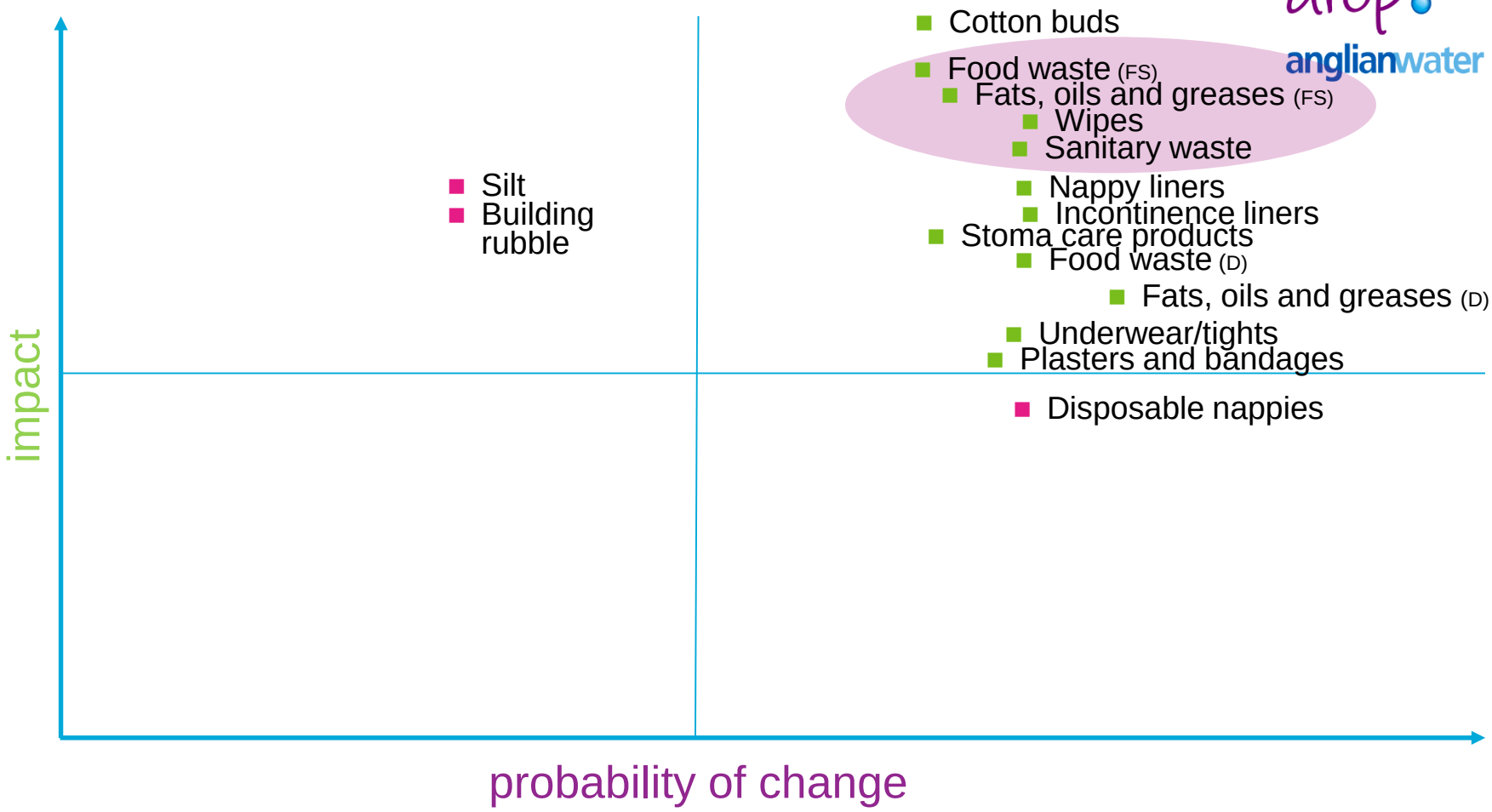
Total probability of change

Fats, oils, greases and non-flushables

Issue analysis, Anglian Water, September 2010

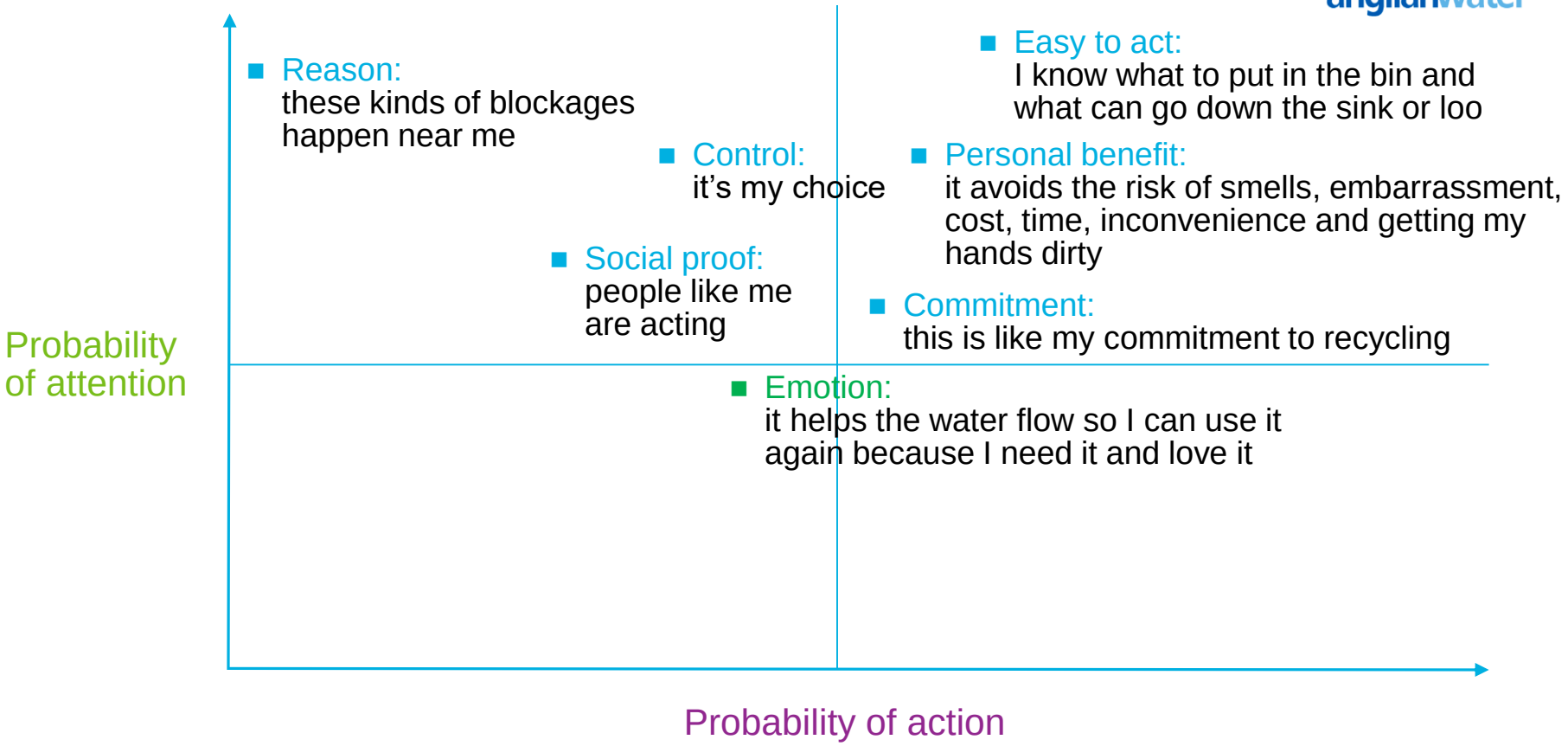
		A	B	C	D	E		
Issue	Audiences	Evidence of impact	Backed up by sewer worker experience	High audience inclination and ability to act	Resources required to succeed	Probability of success	**Totals** Impact (A+B)	**Totals** Probability of change (C+D+E)
1 Wipes	Domestic homes for the elderly Institutional cleaners	6	9	10	7	8	15	25
2 Sanitary waste	Women of menstruating age	6	9	5	7	5	15	17
3 Nappy liners	Mum using real nappies	2			7	8	5	
	Older people						11	

Grid of priorities



Source: Wastewater directorate workshop, Nov 2010

Consumer motivation analysis



Outcomes to date

- KIC rolled out to **25 locations** including coastal KIC working with holiday resort providers focusing on holidaymakers - **20% average reduction in blockages on transferred network vs 47% increase in blockages in non-KIC towns**
- **Personalised mailers** to homes. Field Techs carry KIC packs
- **Food serving establishments** visits offering advice and Chartered institute of environmental Health FSE packs
- More than 35,000 children and adults engaged with through Keep it Clear's Mad Science shows
- **8 formal partnerships** with community voluntary organisations cover **17 KIC areas**
- **Customised material** for different audiences
- Keep it Clear **media coverage** in all areas of the campaign
- **ISO/WIS flushability test guidelines** being produced with water companies, manufacturers and retailers
- **Partnerships** with NGOs, retailers, manufacturers and local authorities - EHO, waste and enforcement teams
- Using Word of Mouth techniques to discuss sanitary item disposal options with women.

KIC : key points

- Reframed language so it is meaningful for customers
- Responsibility deal with manufacturers and retailers
- Use community outreach programme to make the most of local, trusted, influential voices
- Provide prompts and advice at the time of an incident i.e. loss of toilet facility (grab attention)
- Communications approach that makes it easy to act. including the use of prompts at time of disposal
- Wider communications programme to raise awareness of the world beneath our feet
- Created a web hub to allow anyone to post ideas to help achieve our goal of reducing waste to sewers
- Media engagement programme and developed evidence base on disposal of waste to sewers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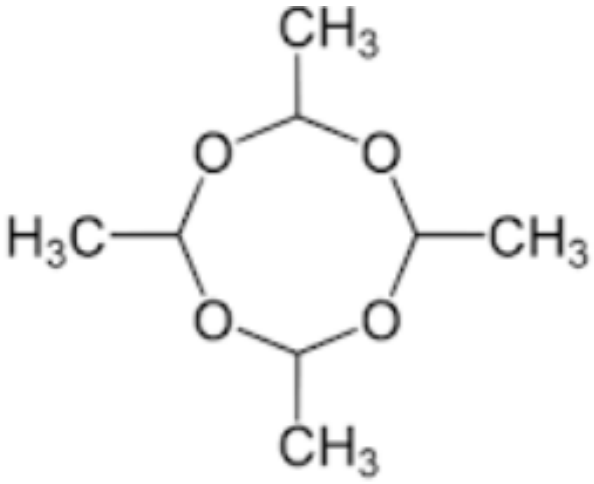
Slug
itOut
healthy crops, healthy water

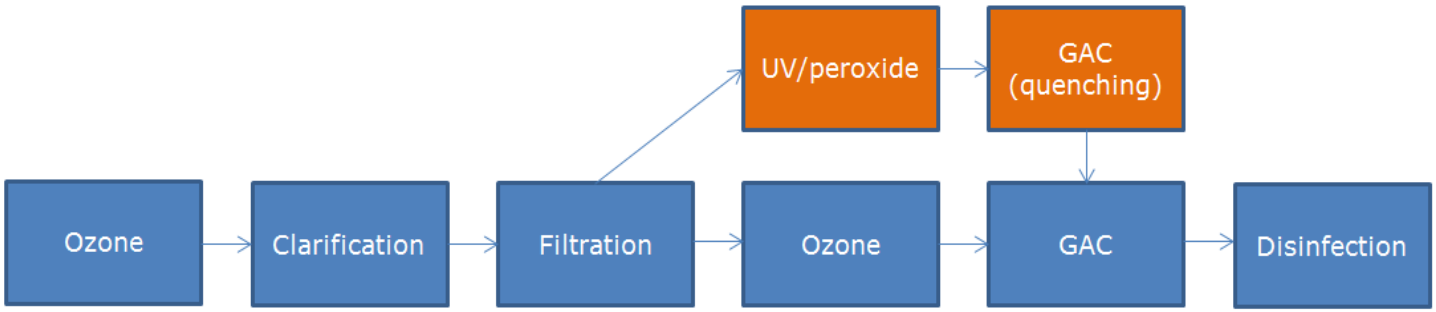
Slug It Out: Metaldehyde

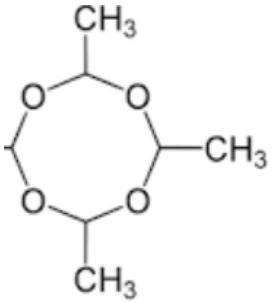


- Active ingredient in slug pellets
- Particular issue in the East : intensive agriculture
- Conventional water treatments cannot remove
- End of pipe solutions very high cost
- Alternative product (ferric) available to farmers
- Ferric does not create same problems for water

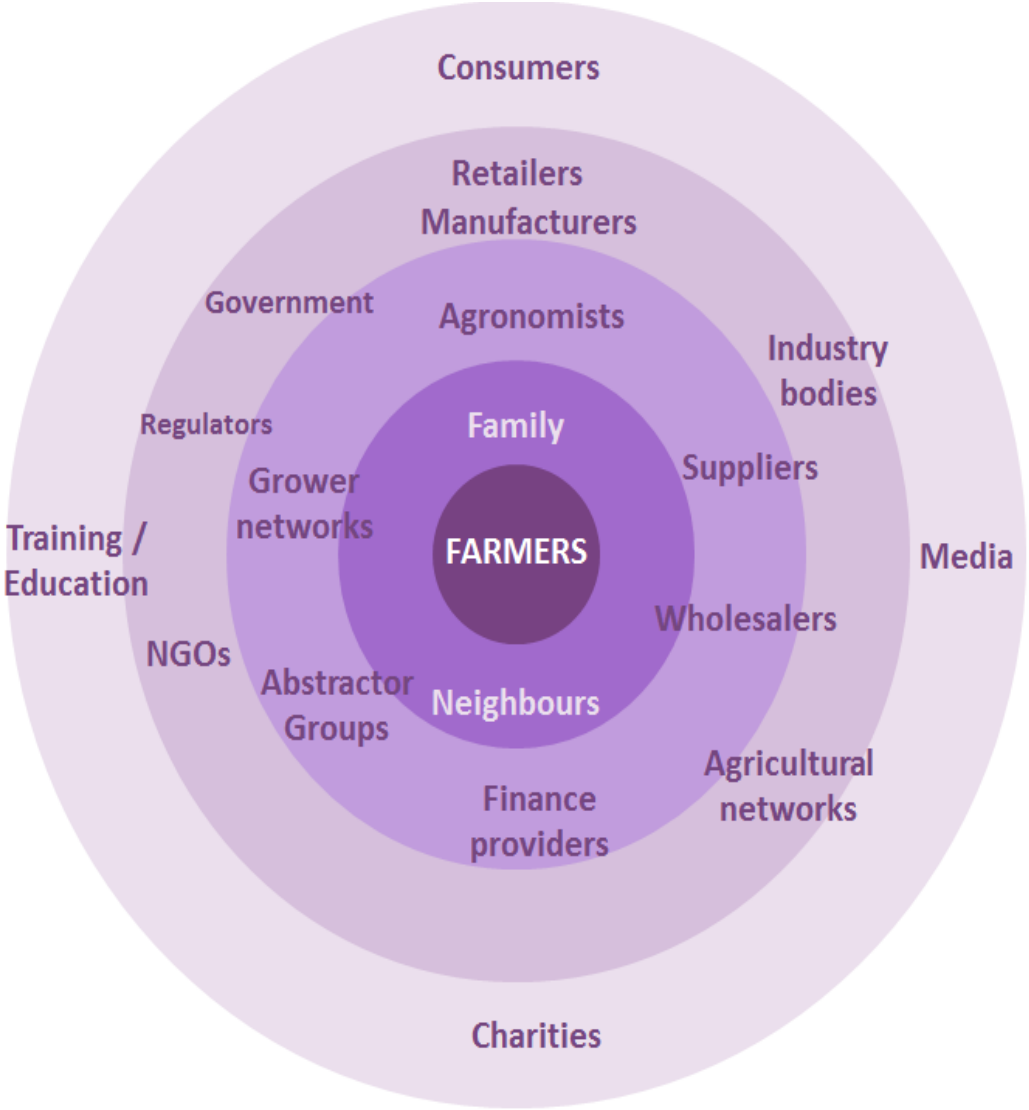
The cost of treatment

Surface water sites	Total costs Unit Costs £/Ml	Power costs Unit Costs £/Ml	Chemicals costs Unit Costs £/Ml
ALTON WTW	100.41	53.38	11.87
GRAFHAM WTW	68.95	45.01	10.85
MORCOTT WTW	80.79	58.32	9.96
PITSFORD WTW	77.32	34.58	8.84
WING WTW	82.98	56.35	8.49
Overall surface water sites	**78.67**	**45.72**	**10.32**
HALL WTW	**277.23**	**101.67**	**16.65 plus 97.33 for new GAC**





Preventing pollution at source
Catchment Management



- People game
- Right people, right place
- Accountability
- Adequate resources critical in AMP 7

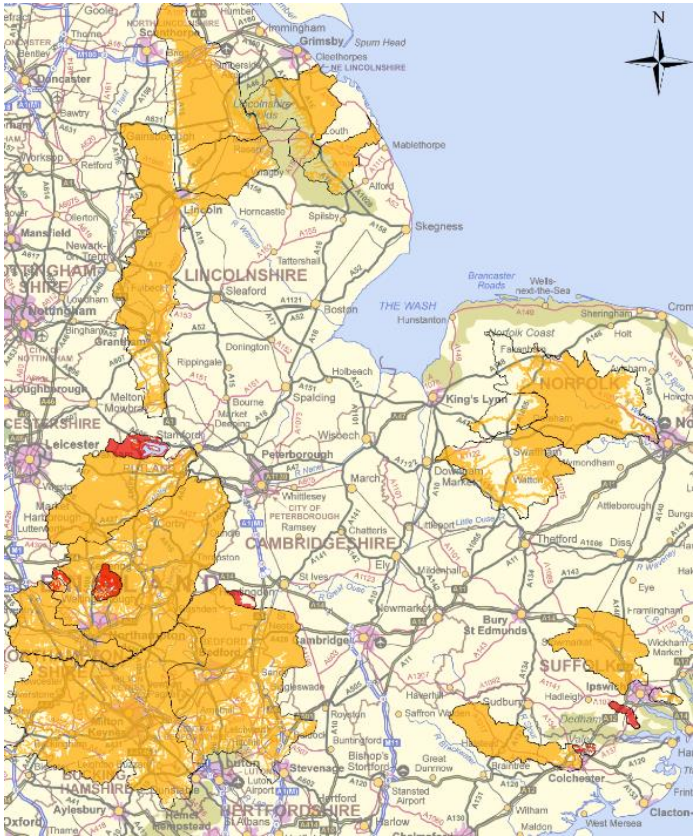
Natural catchments

- Ferric phosphate use survey

Key feedback:

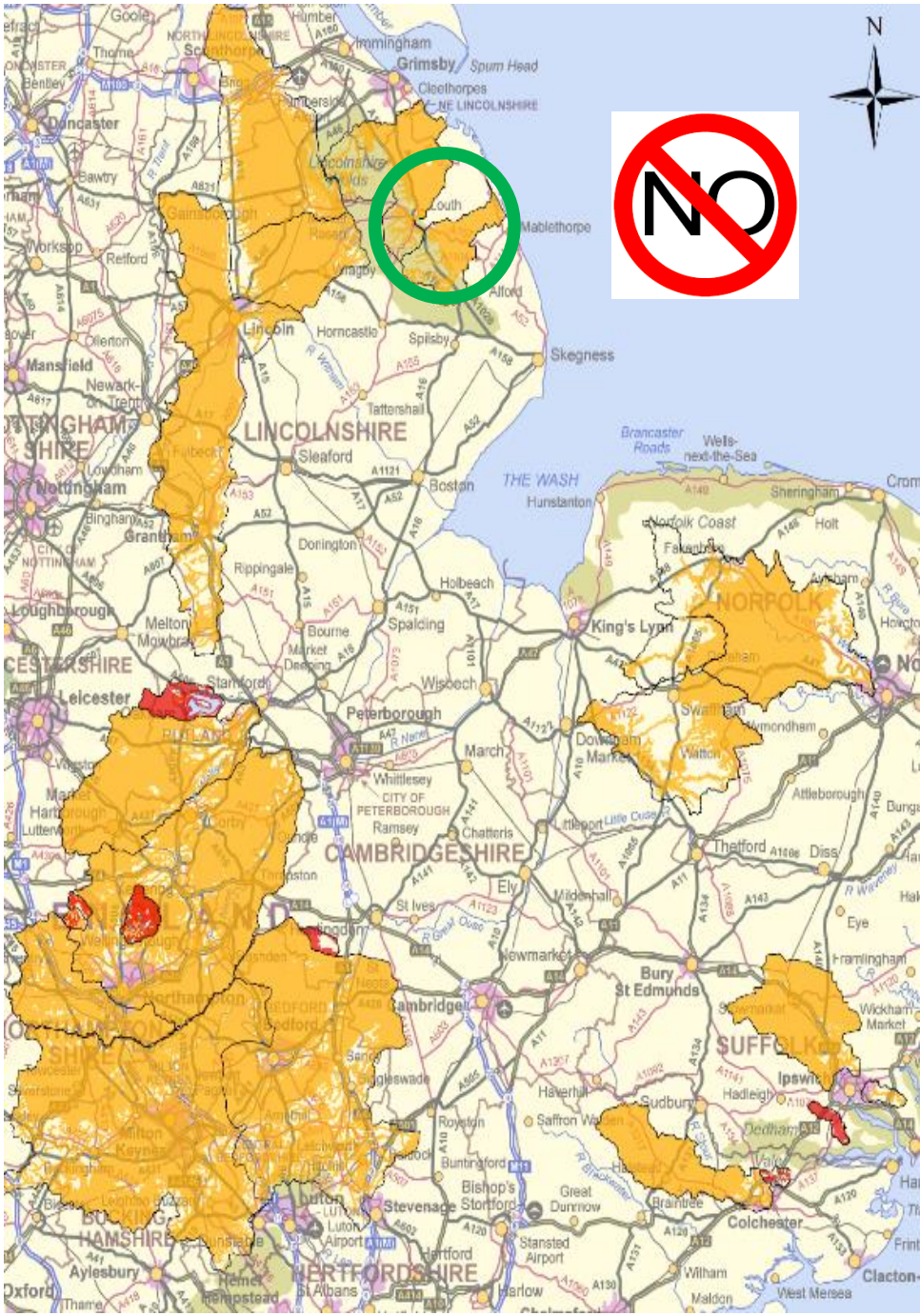
- **Efficacy**
- **Cost**
- Knowledge
- Information
- Habit

- **Pilot trial**
- Product substitution in natural catchments
- Hosting Payment – Cost Difference – Water Quality Bonus



Results

- 100% engagement
- Connect farm to reservoir
- Market influence (new ferric product and more use)
- Issues with pumped catchment scale as visible connectivity lost
- Your problem not ours
- £90M spent in AMP 7
  - Monitoring
  - Advisors
  - Substitution costs
- **Voluntary ≠ success**
  - **£ isn't always a driver**
  - **Paying the polluter?**




DEBT

Using BE to address bad debt

- Discussions with Ofwat CEO led to contact with academics at Oxford University
- This led to taking forward work with those academics and the Behaviouralist to develop new approaches to managing bad debt
- Pilot experiment with the aim to :
  - Test if experimental communications increase compliance rates ;
  - Provide insight into how each letter affects different risk profile groups;
  - Increase potential revenue & reduce customer harm

Conducting the experiment

- AW's domestic debt process assigns customers risk scores based on their likeliness to comply.
- A combination of letters, SMS and telephone communication, dependent upon risk score, are used at each stage to remind customers of late payments/debt level.
- The experiment will test two treatments; **omission bias** and **social norms bias** by changing **five letter designs** at different points in the debt process.

Experiment conditions

- Pilot for 6-8 weeks
- Within-group randomised controlled trial
- Customers in each risk group randomly assigned to either the control group, treatment 1 or treatment 2
- Randomisation based on postcode & debt level
- Letters sent based on randomisation and customer's point in debt process
- Analysis at each stage in the experiment and regression analysis completed after the pilot
- Customer profiling information will be shared to analyse trends in compliance

Interventions

- All treatment letters will test the following:
  - the **messenger effect**, which test the impact of the letter being sent by a person of perceived authority;
  - the **Hawthorne effect**, which tests the effect of being observed, and;
  - the **salience effect**, which tests the effect of drawing attention to the situation the person is in

Treatment communications

- ***Treatment 1 – Omission Bias***
  We will also include an omission bias statement:

  "We are treating your lack of payment as an oversight. If you do not respond, we will treat it as an active choice not to pay your bill".

- ***Treatment 2 – Social Norms Bias***

  And a social norms bias statement:

  "Over 95% of people pay their bills on time. You are in the small minority who have not yet arranged payment".

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Water efficiency

- Climate change & population growth key challenges for the sector with risk to resilience
- Particularly in the East/South East of England where those factors are particularly acute
- AW has good track record of demand management to help water scarcity (we put the same amount of water into supply now as 30 years ago, despite 30% growth)
- But need to do more on demand management as part of multi-pronged approach to resilience

Reducing water use experiments

We carried out three qualitative experiments on financial reward/penalty:

1. **Penalty Charge**
   Incentive upfront : penalty for overuse. We give customers a fixed water allowance of 100L/pp/day and everyday they go over the allowance we penalise them by deducting £5.

2. **The Water Lottery**
   If they stick to their allowance for the duration of the experiment, customers are entered into a raffle. In with a chance to be entered into a raffle to win £100 if they stick to a water allowance of 100L/day.

3. **The Value of Water**
   We translate their water usage into monetary value, showing benefits of savings.
   By translating the water that they save into money we will be educating customers on how they can save and encouraging them to become more water efficient.

Reducing water use experiments

And three qualitative experiments on leadership and competition:

1. **The Rules**

   We provide the customer with short list of areas where they could make savings and clear direction on what they should be doing to successfully complete the experiment. They will have a fixed water allowance of 80L/pp/day and it is their responsibility to stick to it.

2. **The Big Competition**

   We create an imaginary competition between towns and villages in the Newmarket area to find the best water savers. Tell the customer that Newmarket is in with a chance of becoming the champions of saving water. They are representing their community and have to save as much water as they can.

3. **The Super Saver**

   We create an imaginary competition between households in the Newmarket area to find the ultimate water saving champion, who will help us develop a water efficiency programme for the community. Customer told they are in with a chance of becoming the water saving champion in their community and will be hailed as an expert savvy water user. They need to save as much water as possible.

Regulatory incentives

- Some closing thoughts
- Ofgem approach vs Ofwat
- Outcome Delivery Incentives
- Customer Engagement
- Penalty and Reward
- Make it hard to stay still