Communicating Non-Potable Reuse:
Strategies to influence attitudes and risk perceptions

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stream
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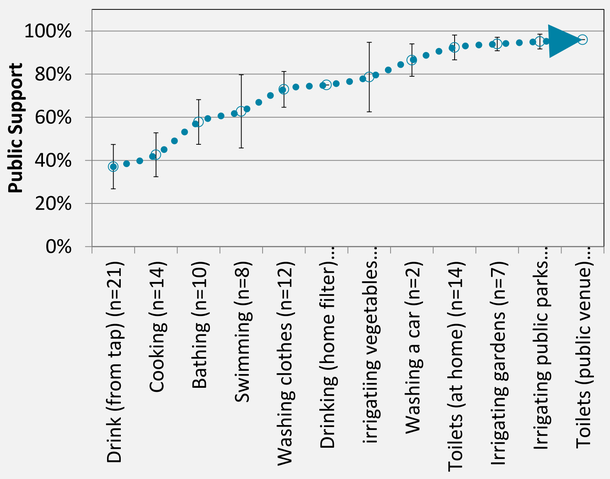
1. What we know

Literature review identifies:

- Public support varies depending on use
- Trust and risk perceptions influence scheme support
- Many other attitude factors, e.g. knowledge, social norms, environmental values, world views, disgust



Public Acceptability of Recycled Water Uses
Data from n=25 international studies 1972-2012. Graph shows mean acceptance and SD.
Note that methods vary across studies.

Qualitative research at the Olympic Park identifies perceived benefits and concerns:

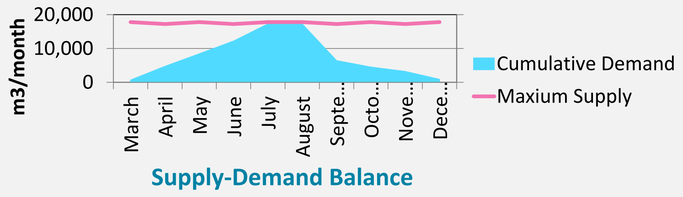
- General public survey, 2012 (n=309)
- Customer survey, 2014 (n=30)
- Stakeholder interviews 2012-15 (n=30)

Research Agenda

How might message framing influence attitudes to and risk perceptions of non-potable reuse within a London context?

Quantitative research at the Olympic Park details some of these challenges:

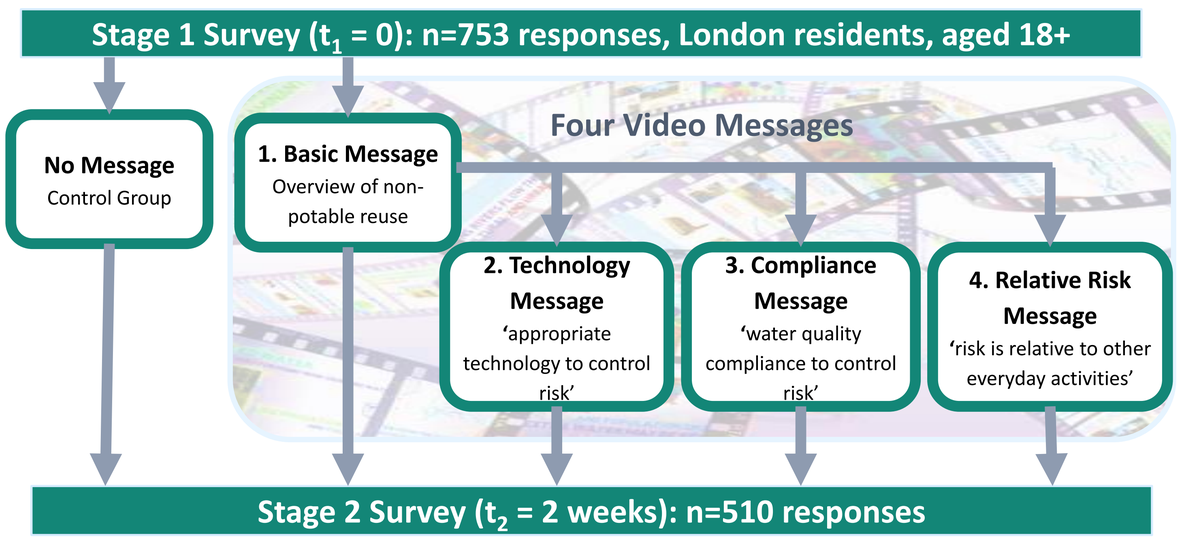
- **Higher support for low contact use**: e.g. flushing toilets (~95%)
- **Operational energy** (~2.5 kWh/m^3) **and cost ➤ existing water supply and sewage treatment** (~1.3 kWh/m^3) but depends: scale, quantified benefits, water quality, future trends etc
- **Difficult to balance supply and demand:** e.g. seasonal variations
- **Health risk estimates vary:** depending on reference pathogen, exposure route, vulnerability etc.



Supply-Demand Balance

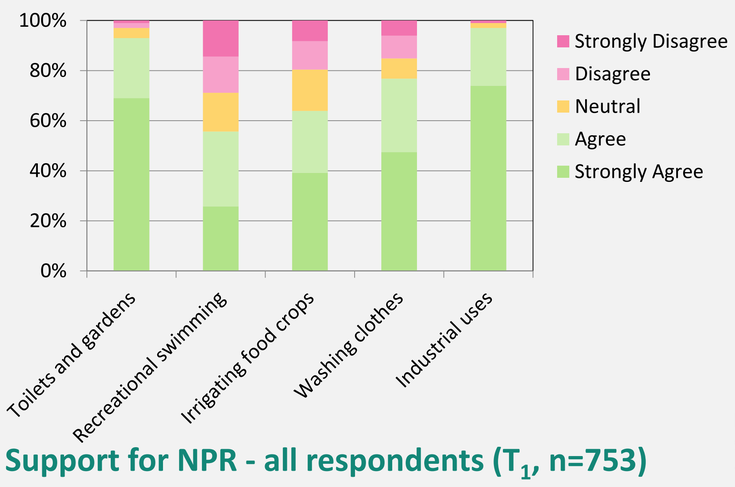
2. Methods

- Two stage online survey
- Four video messages
- Questions on support for non-potable reuse
- Questions on risk perceptions
- Questions on trust



3. Results

High support for lower contact non-potable reuse:
- **91%** support for toilet flushing and garden watering
- **93%** for use in industry
- Most contentions, swimming **56%** support



Support for NPR - all respondents (T_1, n=753)

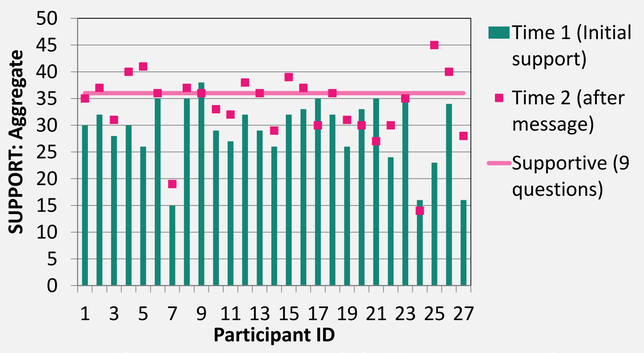
Notes: Survey question scale: 1 = completely disagree, 2 = disagree, 3 = neutral or don't know, 4 = agree, 5 = completely agree

Message effect p-values: (i) Overall change in attitudes and, (ii) based on initial attitude position (swimming)

	Basic Message	Compliance Message	Relative Risk Message	Technology Message	No Message	
Overall	0.474	**0.013***	0.610	0.316	0.531	Risk Perceptions (6 questions)
Initially Opposed	0.865	**0.015***	0.795	0.854	0.464	
Initially Neutral	0.370	0.952	0.363	0.885	0.090	
Initially Supportive	0.594	0.196	0.650	0.191	0.562	
Overall	**0.024****	0.054†	0.840	0.381	0.318	Trust (7 questions)
Initially Opposed	0.408	**0.009****	0.991	0.245	0.509	
Initially Neutral	0.212	0.331	0.554	0.181	0.834	
Initially Supportive	0.121	0.335	0.955	0.355	0.514	
Overall	0.415	0.229	0.829	0.769	**0.022#**	Support (9 questions)
Initially Opposed	**0.011*****	**0.001*****	0.056	0.063	0.535	
Initially Neutral	0.152	0.968	0.242	0.664	0.359	
Initially Supportive	0.145	0.079	**0.034#**	0.151	**0.002#**	

Notes: Results reported for non-parametric paired samples Wilcoxon signed-rank test. Significant at p<0.05
† Significant for t-test (0.041) but not Wilcoxon signed-rank test

- *Significant **improvement** in Risk Perceptions
- **Significant **increase** in Trust
- ***Significant **increase** in Support
- #Significant **decrease** in Support



Compliance Group: Initially Opposed

4. Conclusions

- Ongoing public engagement to maintain and improve support
- Communicating water quality compliance processes may reduce risk perceptions and improve trust, particularly for more contentious uses
- Communicating basic details of non-potable reuse may improve public trust in the science, technology and organisations involved
- Further work to evaluate other communication media and different message themes for both non-potable and potable reuse

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