

BUILDING TRUST IN WATER RECYCLING



City of Anaheim Water Recycling Demonstration Facility.

In this article, Stantec’s Lisa Barrott, Jonathan Greenwell, and Neil Gardener, explore how the water industry can build trust in water recycling schemes by recognising and communicating the multiple benefits that they can bring.

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Water recycling schemes will become increasingly important sources of water in the UK. Although recycling schemes exist all over the world, the UK has only one full-scale plant in operation. Indeed unplanned (or ‘de facto’) reuse is commonplace in rivers where wastewater is discharged only to be abstracted downstream for treatment in a water treatment works. It seems an obvious solution, when drought could be just one dry winter away, that water is used,

treated and then recycled to a natural water body from where it will later be abstracted. So, why are we not recycling more water in the UK?

All the water recycling systems currently planned or proposed by UK water companies are indirect systems. This is where treated effluent from a wastewater treatment works is treated to a high standard and then discharged to a natural water body, like a river or an aquifer for later abstraction and treatment at a water treatment works.

It is true that water recycling schemes require investment in terms of energy, chemicals and can be carbon intensive to operate, but water recycling schemes often meet resistance and barriers for reasons which are not related to costs. Regulators

are wary of water quality and environmental impacts; planners and landowners are concerned about pipelines; and customers can worry that their drinking water is not safe and comes from an unsavoury source. Currently it can feel like the trust between the public and the water industry is at an all-time low, and water companies are in a challenging position needing to win trust from the public to bring about water reuse schemes. Public consultations are a mandatory part of planning for major infrastructure development, so buy-in from local stakeholders and special interest groups is essential. Public support for a scheme requires widespread engagement and education to ensure everyone understands the proposal, its benefits and are assured of its safety.

Building trust around reuse

Excellent customer communication that builds trust starts with basic principles of why the water is needed in the first place, how it is treated and how unplanned reuse happens already. Explaining that water is a finite resource, that demand for it is increasing, and that the situation will only get worse if nothing is done, will help people to understand why the recycling scheme is needed. For many people, leakage remains a significant concern, and they require assurance that both demand and supply issues related to their water supplies are being tackled.

A recent Drinking Water Inspectorate report set out to understand public attitudes and public acceptability towards water recycling as a source of drinking water¹. The study, carried out by Cranfield University, concluded that simple, plain and transparent communication is best, using consistent, accurate and neutral language.

For example, ‘advanced water purification’ is a better term than ‘wastewater treatment’ – it is all water after all – and using this term avoids an unnecessary link with sewage. Other recommendations include being very pro-active in communications with the public in a joined-up approach with regulators and government. This is very sensible but requires a major shift for the water industry which does not always take opportunities to showcase the excellent work that it does, or openly join forces with other stakeholders.

Regulatory approval is a major consideration for the successful and timely implementation of any water recycling scheme, but confidence needs building here too. Water recycling schemes introduce new environmental discharge points which require permits from the environmental regulator. The water entering a water treatment works will change and the drinking water safety plan necessary to manage the new risks will need updating; this is a regulatory obligation. The burden of evidence for environmental permitting and water safety planning is high and needs data. These are big schemes with big consequences if things go wrong.

Engagement and visualisation are key to understanding. In the United States, where indirect reuse systems have been in operation for more than 20 years, the construction of a demonstration facility



Stakeholder engagement at Southern Water's Budds Farm water reuse pilot plant.

has often proved crucial to gaining both regulatory and public acceptance. A demonstration facility, like the one designed by Stantec for the City of Anaheim in California, is among the best tools available to stakeholder managers undertaking public outreach and education campaigns with the objective of securing customer support for a recycling scheme. Visitor centres are commonly co-located with demonstration facilities, with the demonstration facility itself laid out to enable groups of visitors to be safely toured around the process. The opportunity to see the treatment process first hand, ask questions of qualified operators and engineers, and, where possible, taste the recycled water is a very persuasive experience.

In the United Kingdom, Southern Water has plans for a full-scale water recycling plant. To demonstrate the effectiveness of the system in removing a broad spectrum of contaminants the Company set up and operated a water recycling pilot plant at Budds Farm Wastewater Treatment Works. Further value was realised from this investment by its use as an engagement platform for regulators and local special interest groups, with engineers from the design team attending to present and answer questions on the treatment technologies. As Southern Water’s strategic solutions partner for AMP7, Stantec engineers are integrated into the design team for the full-scale water recycling plant and have offered pivotal support in both the operation of the Budds Farm pilot plant and in delivery of the stakeholder engagement sessions.

What about transporting the water to where it needs to go? Any new source of water will need plumbing in. Most recycling schemes need large pipes to reroute the treated wastewater into the environment and these pipes need to go through land belonging to multiple landowners and the land itself may have many different designations. There will be roads, infrastructure, and habitats to consider. How to plan the best route requires a lot of different aspects to be thought through. There are great modelling tools to help planners do this. However, laying pipelines has the potential to be time-consuming and disruptive. Numerous technical surveys are also needed before the scheme can proceed. This can appear like a long list of challenges, but this view overlooks the ways in which water recycling schemes can benefit the environment.

Water recycling schemes are complex and can require significant investments of time and money; they can meet formidable challenges from any of the stakeholder along the way, including regulators and customers. Building trust with customers, regulators and stakeholders through demonstration facilities and the communication of the multiple benefits such schemes can bring is fundamental to the advancement of recycling schemes.

References
¹ <https://www.dwi.gov.uk/research/completed-research/consumer/public-perception-of-water-recycling-for-drinking-water-use/>