

June 2024



**PROJECT
ZERO**
AffinityWater



**LESSONS
LEARNED**

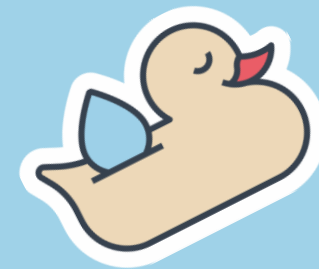
BACKGROUND



In 2021, Affinity Water and its partners successfully applied for the Water Breakthrough Challenge for a program focused on achieving water neutrality at NAV sites. The project promised to deliver the world's first at-scale water neutral new housing development in collaboration with New Appointments and Variations (NAVs). A combination of innovative technologies and customer behavioural change approaches would be trialled.

The approach at Site 1 focuses on technology installation in residential homes. Site 2 emphasises a community-based, behavioural change approach to reducing and offsetting demand. Site 3 will offer a hybrid solution of technology and a community-based approach. Customers across all three sites will be able to monitor their usage via an app, which will also allow for detailed monitoring and analysis of anonymised trial data. The collaborative project will go beyond current 'sustainability' ambitions and ensure homes are measurably water neutral.

The project also promises to facilitate better access to the market for NAVs, strengthen delivery partnerships and water efficient technologies, and share learnings across the water sector.



INTENDED OUTCOMES



SHORT TERM

1

Deliver the world's first water neutral new development in collaboration with a NAV.

- *Prove the technological, commercial, and operational business case for a water neutral new development for both the incumbent water company and the new entrant.*

2

Create an evidenced and scalable plan – the 'Water Neutrality Blueprint'.

- *Share a practical and applicable blueprint for water neutrality with other UK water companies.*

3

Partner with customers to design solutions.

- *Support our customers to reduce water wastage at a community level, which will ensure we can offer better levels of service in the long term.*

LONG TERM

4

Improve delivery of new developments across cross-functional businesses.

- *Facilitate better cooperation between new development stakeholders that are currently working together but not able to facilitate an outcome.*
- *In the longer term our project incentivises UK based manufacturing to serve the developing home market sharing benefits with the wider supply chain.*

5

Open the market to new entrants.

- *Support the removal of barriers to entry for NAVs and promote competition to deliver customer benefits.*

6

Develop water best practice and align with other customer service offerings.

- *Engage with the UK energy sector and globally with water providers to consolidate best practice.*

LESSONS LEARNED



As part of a “fail fast, share early” approach to innovation, the project promised to share findings and lessons learned on a regular basis. The below lessons have been compiled from interviews with several project participants from June 2022, through to May 2024.

The participants interviewed were:

- Gareth Barker (Project Director, Affinity Water)
- Lina Nieto (Water Net Zero Manager, Affinity Water)
- Charlie Thackeray (Water Director, IWNL)
- Jane Bellard (Behaviour Change Specialist, Grapeviners)
- Richard Butler (Business Director, H2OIQ)

LESSON 1:

Site planning, selection and communication with developers

LESSON 2:

Defining the offsetting model

LESSON 3:

Team and stakeholder collaboration

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Opportunities for local promotion and collaboration

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Campaign marketing planning

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LESSON 1



Site planning, selection and communication with developers

- *The construction of new homes was subject to delays in planning applications, due to unforeseen site conditions. When proposing the project timeline, consideration should be given for build delays and allowances made for this.*
- *Liaison with developers was required, to address concerns that homeowners may remove or neglect to maintain water efficiency fittings and fixtures, if the technologies do not provide the right or optimal usage experience. This is a high priority, so assurances have been given to developers that there will be further exploration of devices that are integrated and/or cannot be easily removed.*
- *The project timeline and scale of the development can be impacted by a slow property market and slower builds. Therefore, the number of households that can be included and reached could be reduced.*
- *The number of households available to test grows as more house builds are completed. It's recommended that the properties that are sold during the campaign, and those who have already moved in prior to the campaign, are both included and targeted.*
- *There is a risk that an advantage could be given to a new appointee and variation (NAV), if they are involved in conversations about a site, prior to the developer's appointment. Therefore, sites selected for projects must follow Ofwat's appropriate procedure for NAV's selection, to ensure they abide by competition law.*

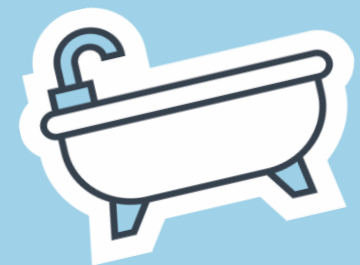


LESSON 1 CONTINUED



Site planning, selection and communication with developers

- *Water efficiency fixtures and fittings that are to be tested and trialled, need to be included as part of the developer's planning application, as amending them later is challenging and most developers will not change them.*
- *To help inform future site selection and to ensure engagement is with reputable developer's, check with Water Quality that no enforcement notices have been issued against the developer. In addition, a questionnaire for interested developers was created and issued, with a key criteria defined to rank each potential site.*
- *A compendium for developers has been created, to provide them with more advice and guidance on reducing initial water demand through fittings or water re-use.*
- *Produce a standard scope outlining requirements for rainwater harvesting, which will be shared upfront with developers to determine the suitability of the proposed site, prior to a detailed study. This should make the process faster and more efficient.*

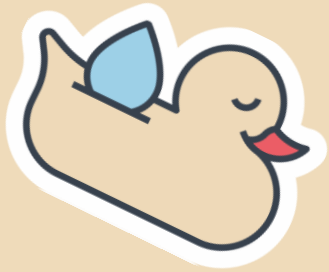


LESSON 2

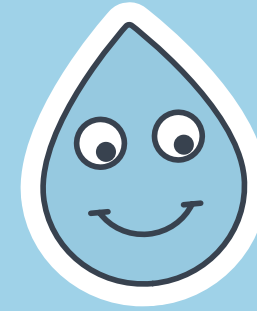


Defining the offsetting model

- *As offsetting is a new concept and the model continues to evolve during trialling and monitoring, allowances should be made for it to adapt and change. Once confirmed, the concept requires stakeholder agreement, and it should be shared with regulators to secure a national position.*



LESSON 3



Team and stakeholder collaboration

- *Regular monthly meetings with partners aided collaboration and allowed others to help and support (where appropriate) with shared actions, challenges and opportunities. A data policy was created to enable sharing of all acquired knowledge and data, and to ensure that stakeholders understand the implications of data sharing, during these meetings.*
- *At the earliest stage possible, agree a behaviour science strategy and tightly define project ownership and stakeholder responsibilities, with a clear hierarchy of involvement and allocated responsibility. This will improve the decision-making process and prevent delays and disagreements.*
- *Create a consistent and core in-house project team for the duration of the project, to provide consistency and stability. This has included a new Technical Water Neutrality lead and an Assistant Project Manager.*
- *Steering committee meetings should be regular, to utilise the extensive committee network. Bi-monthly meetings are being trialled.*



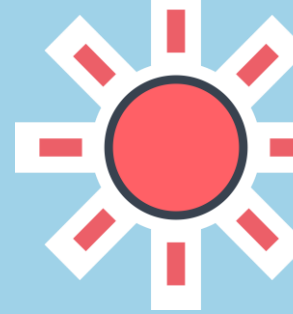
LESSON 4



Opportunities for local promotion and collaboration

- *Local authorities are receptive to the project. Working in partnership from an early planning stage is beneficial to ensure key water conservation messages reach the developer, as typically communication with the water company will only start when the developer applies for a water connection.*
- *The local authority provides access to their local network of contacts and the offsetting workstream. It helps to reinforce and promote water conservation and security, and can help shape their climate change and environment strategies, putting local policies in place. For future sites, ensure a clear stakeholder engagement strategy that includes local authorities.*
- *As there is currently no offsetting framework across the industry, once the scope for offsetting has been defined, partnering with the local planning authority could help to potentially influence the planning process, and will ensure that all legal and policy requirements are fulfilled and correctly followed. This should help prevent complaints from developers.*
- *Community engagement is crucial, and it forms a key element of the toolkit recommendation. Piggybacking on existing local events captures community interest, and face-to-face meetings and events helps to build engagement, and informs the campaign messaging. Ensure that the community are engaged with and listened to at the outset of the project, before acting. If there is not a strong local community, then a grassroots strategy should be implemented to create a sense of community, i.e. a Facebook group.*
- *Local schools are receptive to the project and engagement with schools should continue. School assemblies are well received, and children are engaged with the subject. The install of water efficiency fittings and fixtures should be completed out of term time to avoid disruption.*

LESSON 5

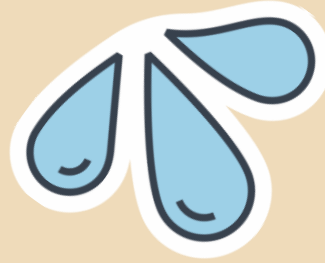


Campaign marketing planning

- *Ensure the campaign is direct, local and positive, with a clear consumer action. Focus groups with residents engage the community, raise awareness and help to inform the campaign. These will form part of the toolkit recommendation when kickstarting new campaigns.*
- *Social media has proved vital for establishing community relations. Because the new appointee and variation (NAV) will be responsible for managing the relationship with their own customers, it is important to understand their capability for complementing social media marketing and engagement on their own platforms, along with digital communications (i.e. email marketing). As NAV's are relatively new to the category, their marketing could be in its infancy or be lacking sophistication. It is key for campaign planning to understand their marketing capabilities and potential reach.*
- *Within the toolkit, guidance and recommendations will be provided on carefully selecting the right person to be the friendly face of the campaign.*
- *During focus groups, campaign engagement ideas were proposed to residents for their input and preference. A launch event in collaboration with the local community association helped to boost attendance and engagement. Free treats and discount offers, helped to incentivise pledge sign ups.*



LESSON 6

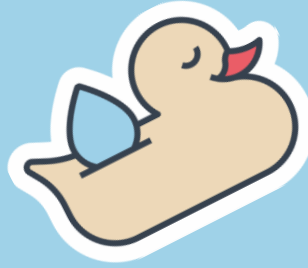


Communication of concept

- Customer communication via the new appointee and variation needs to be carefully considered to ensure that messages are not confusing. Creating a neutral brand which is universally appropriate helped to avoid confusion. Project Zero is the umbrella name for the water offsetting campaigns, but each local area should have their own personalised and locally targeted project name, e.g. Bidwell Water Savers.
- Review campaign timings to ensure that there are no competing water saving campaigns running simultaneously, as this can cause confusion. The timeline was adjusted to avoid the height of the 'SOS: Save our streams' campaign.
- There was an expectation of a higher return than 20% of residents signing up. Therefore, Bidwell West door knocking was commissioned to encourage more sign ups and new pledges. This delivered excellent results. To ensure our team were welcomed (and to prevent distrust), names of door knockers were shared on the community Facebook page.



LESSON 7



Non-household findings

- *Create a selection criteria that will rank commercial sites and businesses depending on three factors: public value, cost and benefit. This 'social approach' will be presented to stakeholders as a targeted shortlist, rather than entire raw data, to prioritise specific venues near or within the Bidwell West development, ensuring a clear link to the campaign.*
- *The intention was that public entities and charities would be fully funded, and businesses that could afford to pay for the installations of water efficiency (WE) measures, should cover the cost of them. The aim was to move towards a Water Trading approach, where all learnings will be taken and improved upon. However, businesses didn't want to match fund. Push back was received that water is cheap, with too small a return on their investment. Therefore, water efficiency measures needed to be fully funded.*
- *Water offsetting is in its infancy with different geographical approaches being trialled to achieve offsetting targets, and buildings of social value are being prioritised. This first, very localised approach, ensured that the water used by new homes and its offsetting, is linked to the same water source. However, in future the area could be expanded, depending on network connectivity, as not all pipes are connected across the supply area. This will vary between each water company.*
- *Private companies were asked to match fund installation costs as part of the offsetting workstream. Most businesses (except for a large pharmaceutical) have been reluctant to pay, because their water cost is low and therefore the investment return may not be worth it. Therefore, different funding approaches and engagement strategies have been trialled, with installation costs offered free of charge.*

LESSON 7 CONTINUED

Non-household findings

- *When liaising with non-households, involve other departments within Affinity Water in sessions to update them on the projects progress, cascade key messages and to enable education. The wholesale team play a vital role in building strong relationships with retailers, which helps to upskill them on water fitting and regulations. It is important that these relationships are put in place early and are constantly nurtured.*
- *Engagement sessions with retailers should take place before making changes to their meters, which could impact their customers. Feedback forms were issued to retailers and further sessions will take place. Retailers would like to learn more about any changes and milestones.*
- *Work with stakeholders to develop the new monitoring and mapping of non-household offsetting. If this becomes part of BAU, a new process should be defined.*
- *Initially, sites of social value (e.g. schools and public entities), were the focus, but this restriction limited the opportunity to reach the water saving target. The area was expanded to identify other large water users (e.g. nursing homes) and this increased the opportunity for savings. These businesses required full funding as the rate of participation was low.*
- *Significant time was spent sourcing contact details for the decision makers at commercial sites. Affinity Water sent letters to potential businesses, offering a free survey to entice their participation. However, there was a poor response to this offer and an assumption that there was a hidden charge for surveying. Communication needs to be clear and accessing large corporations is easier via the retailer.*



LESSON 8



Data gathering, analysis and protection

- *Don't underestimate the time required for data protection compliance and allow approximately 2-3 months. A consent form template was created and approved by Affinity Water's Data and Legal Team and a controller-to-controller agreement was produced for sharing data with retailers.*
- *Accessing a new appointee and variations data takes longer than expected and they have limited capacity to analyse data and create a water report. Ensure open communication with partners, to understand what they can and can't do and then resource plan accordingly.*
- *Produce a post campaign survey for residents of Bidwell West to complete, to determine whether residents have changed their knowledge or appreciation of how much water they save, the behaviours they've changed and how they felt about the campaign.*
- *OptoHead reads allow for smart level analysis without behavioural skew, which can occur when residents know they have a smart meter. OptoHead reads were completed retrospectively in 30-minute intervals for ~6 months. Manual reads add time and cost to the analysis phase of the project.*
- *For the schools who participated in offsetting, we require specific contact details to arrange and conduct water efficiency surveys. The best approach for establishing connections with schools was by door-knocking. Going via generic emails delays the process.*



LESSON 8 CONTINUED

Data gathering, analysis and protection

- *GDPR forms were sent a posteriori via email to organisations and individuals, to allow for publication and sharing of findings. However, these forms received a slow response and only a small number were returned, which can limit marketing communications. Therefore, the forms should be completed prior to installations, with signed agreement to participate.*



LESSON 9

Legislative and regulative considerations

- *Currently water undertakers are unable to install, monitor or maintain a water reuse system, which doesn't treat water to wholesale standards. This means that while the private sector can install water reuse systems, water companies cannot. The government is consulting on legislative changes to address this, with the aim of water companies owning the asset and maintaining it.*



LESSON 10



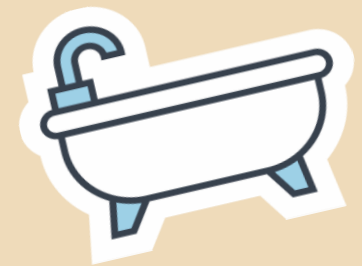
Metering

- *While costly, installing smart meters has proved worth the outlay, as taking manual readings is time consuming and costs money. The data quality of smart meters is more reliable with a granular level of data, which supports the understanding of the impact of the campaign. For future sites, smart meter deployment will be considered at the outset of the project, before undertaking any other activity.*
- *The meter data shared by the new appointee and variation had some gaps, which has meant that the overall usable data does not cover the full data set for Bidwell West. This has made analysis of the data more challenging. Continuous data capture is required to support the understanding of impacts on site, and this highlights the importance of smart meters.*
- *As over 90% of non-household meters did not deliver an Automatic Meter Reading (AMR) output, there was an increased cost to exchange and replace all non-household meters that participated in the project, to ensure they were compatible with new technology. The budget was updated to reflect this, and it will be important to understand the benefit of these meter exchanges, following full data analysis.*
- *There were unknown variables with non-household meter exchanges, e.g. very few are screw in meters and the majority are in line meters, which present varying challenges to exchange. Therefore, it is important to understand the full impact of work required to undertake meter exchanges, by completing a full survey. Prior to exchanging meters, the last meter read should be noted.*
- *Once new meters have been installed, pay close attention to variances in data, as meter replacements can change the consumption and savings data. The newer the meter the more accurate the data. Older meters lose effectiveness over time.*

LESSON 10 CONTINUED

Metering

- *Average daily consumption (ADC) can be difficult to determine when a non-household property only has one meter, but it feeds multiple properties. Therefore, a change of policy is necessary, and 1-2 years of previous meter reads will be required to enable accurate analysis of savings.*
- *During non-household surveys, there has been instances where water efficiency audits have identified issues with existing meters. This information is passed on and managed by the wholesale team. These meters have needed rectification or replacement by the retailers, before a final read could be taken, which has delayed the data being read.*



LESSON 11

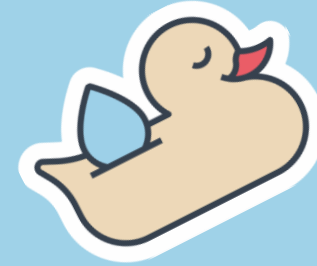


Campaign response

- *When speaking to residents face-to-face, they had little resistance to the idea of making one small voluntary change. More challenging pledges are required for those residents who are already good water savers.*
- *A local pond dipping event in collaboration with University of Hertfordshire was a great success, with over 60 young people in attendance and thoroughly engaged. They stayed for over three hours and remarked that this was much better than playing video games at home!*
- *The website should be amended to make it easier for residents to choose multiple water saving pledges, instead of just one. This increases the potential water saving in each household. Residents likely took more than one pledge but the website in its current form, has been unable to monitor and track these additional pledges.*
- *Research found that residents believe they do not waste water and only use it when it's necessary. This hindered the perceived importance of participating in the campaign, since they were unsure of the potential gains to be made. The finding is supported by the pre and post-campaign survey results, with over 80% of respondents stating that they are not concerned about their water use because they believe they use a reasonable amount. This misconception could exist due to difficulty interpreting the units of water use on bills, or unwillingness to learn that they are more wasteful than they perhaps imagined. Water saving education and simple facts helped residents to comprehend their water usage.*



LESSON 11 CONTINUED



Campaign response

- *During research, many residents admitted that they didn't really know how much water they used, but they still believed they were doing an adequate job of saving water. This was corroborated with the pre-campaign survey results, in which 12% believed they used more water than the national average and 50% thought they used less than the national average. In the post-campaign survey, even fewer respondents (8%) believed they used more water than average. This highlights the importance of providing residents with their water use data, so they can better understand how their consumption compares to what is 'normal'.*
- *The research shows that pledges were viewed positively by most residents as a behaviour change strategy. The community-based, in-person events were successful because residents valued being given the chance to speak with representatives of their water company. They appreciated the location of the Bidwell Water Savers in a local cafe – and the cake treat for taking a pledge. Being provided with a list of pledges raised awareness of some water saving actions that they were not currently taking.*
- *Bathing and showering routines are highly valued by residents, and they are resilient to influence. This is perceived as time to relax and find an escape from busy lives. Even though residents are aware that bathing routines use hot water, which has implications on not just water consumption, but also energy use and financial outlay, they are generally unwilling to make any changes. Care should be given not to encourage residents to reduce their water use at the expense of mental health, as it could lead them to reject the campaign.*



LESSON 12



Reporting to Ofwat

- *Early reporting to Ofwat prevents delays in receiving funding. As there was no early communication with Ofwat, the deadline for the campaign had to be extended. This has been highlighted as a risk in the risk register.*



LESSON 13



Post campaign findings

- *Subject to final calculations, it has been determined that water neutrality can be achieved without technological interventions.*
- *Behaviour change alone can reduce PCC to 105 and reduce the water use by an average of 24.9 litres per household – double that for the most engaged households.*
- *The overall concept of Bidwell Water Savers was a success. The main builds to take forward for future campaigns are:*
 - *Door knocking at the beginning and middle/end of the campaign.*
 - *Use an eCRM system to send more nudge emails and newsletters.*
 - *Attend and create as many community engagement events and opportunities as possible.*
 - *Use the smart meter data to personalise communication and talk to residents in detail about their usage changes over the campaign period.*
- *Water reduction is more noticeable in areas that are water stressed. When a network has a limited supply, savings can be identified more easily.*
- *In commercial properties, water savings can be significant. A large pharmaceutical was delighted with their 43% saving. Explore new commercial property lists to identify further businesses to target.*
- *In schools, water saving is significant. All Saints Academy were delighted with their 6,559 litres saved per day. Continue to work with schools, as they are more likely to be engaged with the campaign.*



**PROJECT
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AffinityWater

**LESSONS
LEARNED**

Further information:

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