Social Science in Water Efficiency Engagement

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1. Executive Summary

The UK faces an escalating water scarcity challenge driven by climate change, population growth, and rising environmental expectations. Forecasts indicate a shortfall of approximately 5 billion litres of water per day by 2055, with an additional 1 billion litres required for non-public water supply. To address this, the Government's Environmental Improvement Plan 2023 sets ambitious targets to reduce per capita consumption from 146 to 110 litres per day, halve leakage, and cut non-household water use by 15%, by 2050. These measures must be implemented urgently, as demand management solutions are needed long before large-scale water resource schemes become operational.

Home visit retrofit programmes - delivered by water companies and contractors - are central to achieving these goals. While effective in delivering technical savings, evidence shows varied levels of success in driving sustained behavioural change. Research highlights a risk of skills gaps among home visitors, particularly in applying behavioural science and environmental psychology to influence water use habits. Without addressing this gap, the potential impact of AMP8's large-scale home water efficiency retrofit programmes, some of which are linked to smart metering programmes, will remain constrained. There is an opportunity to both upskill and enhance the behavioural science skills of those already delivering effectively, whilst also providing the foundations for those starting from scratch.

The Social Science in Water Efficiency Engagement (SWEE) project, funded by the Water Efficiency Collaborative Fund and delivered by Glasgow Caledonian University (GCU) and Artesia Consulting, was established to tackle this challenge. Its objectives were to identify behavioural engagement skill gaps among home visitors and develop a practical, evidence-based toolkit to support more effective household engagement. The project combined literature review, stakeholder input, and social research through a survey of 44 home visitors. Findings revealed that while basic tactics such as knowledge transfer and financial framing are widely used, advanced techniques - such as nudging, priming, emotional appeals, and social norming - are rarely applied. Barriers to engagement include behavioural inertia, mistrust of water companies, and difficulties tailoring advice to diverse household contexts.

In response, the SWEE project developed a non-technical, visually engaging toolkit designed for plumbers, technicians, and advisors. The toolkit introduces Behavioural Influence Tactics, practical examples, and scenario-based guidance to help visitors build rapport, tailor advice, and motivate lasting change. Stakeholder engagement and user testing confirmed its value while highlighting opportunities for refinement, including clearer navigation, quick-reference materials, and integration of real-world scenarios.

The report concludes that embedding behavioural science into water efficiency delivery is essential for meeting national demand reduction targets. Key recommendations include:

- Conducting a full user testing phase to evaluate real-world impact.
- Implementing an evaluation framework to measure outcomes and inform improvements.
- Developing an enhanced, interactive version of the toolkit based on user feedback.
- Extending application to non-household settings to broaden impact.

By equipping home visitors with the skills and tools to influence behaviour, the SWEE project provides a foundation to help unlock the full potential of demand management measures and supporting a more resilient water future.

2. Setting the scene

2.1 The UK's water demand challenge

The UK faces increasing pressure on water resources due to climate change, population growth, and rising environmental expectations. Forecasts suggest a 7% reduction in total water supply by 2045. By 2055, we are looking at a shortfall of around 5 billion litres of water per day between supplies available and expected demand[1]. A further 1 billion litres per day is also needed for water use other than public water supply.

To address this, the Government's Environmental Improvement Plan 2023[2] sets ambitious targets to reduce per capita consumption from 146 to 110 litres/day, to halve leakage, and to cut non-household water use by 15% by 2050. This delivery is required urgently as demand management measures need to meet increasing demand, many years before large strategic resource solutions become operational.

A variety of interventions are being implemented to support these targets, with home visit retrofit programmes - delivered by water companies - forming a core component of national demand reduction strategies. These visits, carried out by professionals such as plumbers, technicians, and advisors, involve installing water-saving devices and educating households on efficient water use. While these programmes have successfully reduced water demand through technical retrofitting, companies report varied success in achieving further savings beyond the initial impact of the devices. Whilst there are examples of home visit programmes effectively delivering sustained behaviour change, research (Ajia, 2020)[3] highlights the risk of a skills gap among home visitors, particularly in their ability to engage residents in ways that foster lasting behavioural change in how water is perceived and used.

AMP8 (Asset Management Plan 2025–2030) will see all water companies implement large-scale water efficiency programmes. Home retrofits are likely to be integrated into the smart metering strategies, with delivery models varying - some relying on water company employees, while others engage contractors such as plumbers, technicians, or installers. The beginning of AMP8 therefore presents a timely opportunity to embed behavioural science into the design and delivery of home retrofit programmes.

2.2 Responding to water scarcity - the role of behavioural change and retrofit programmes

Water is central to thriving communities, but its scarcity is prevalent and a growing concern in many water company areas. In turn, water companies have been deploying home visitors to retrofit water-using appliances and educate residents about water efficiency. However, reported water savings from these visits have plateaued, and post-visit rebounds in water use have been observed in some programmes. In collaboration with Ofwat, Artesia Consulting (2018[4]) identified behavioural change as a critical factor for achieving long-term water efficiency. Yet, Ajia's (2020) study found that none of the home visitors were familiar with environmental psychology or knew how to apply its techniques to encourage water-efficient behaviours.

Further research by Ajia in 2023 revealed that 87% of households (in the study group) that received a visit were not engaged in any meaningful conversation about water efficiency. Whilst there are several examples of programmes that demonstrate meaningful engagement, there are **gaps in the knowledge and skills of some home visitors, which undermines the potential for sustained behavioural change.** More recently, a 2024 insight study[5] - also funded by the Water Efficiency Collaborative Fund and conducted by Artesia Consulting - identified support for improving behaviour change through home visits as one of the top priorities among water efficiency stakeholders.

Ofwat has allocated around £258 million for water efficiency initiatives during AMP8, with large-scale home retrofit programmes set to expand significantly throughout 2025–2030. This coincides with the launch of a £100 million Water Efficiency Fund (WEF), aimed at delivering transformative and sustainable reductions in water demand

[1] Environment Agency, 2025, *The National Framework For Water Resources 2025*, Summary Document.

[2] Department for Environment, Food & Rural Affairs, 2023, *Environmental Improvement plan 2023*.

[3] Ajia, F. O., 2020. *Water efficiency engagement in the UK: barriers and opportunities* (Doctoral dissertation, University of Sheffield).

[4] Artesia, 2018, The long term potential for deep reductions in household water demand, AR1206

[5] Artesia, 2024, Water Efficiency Home Visit Enhancement Framework – Database WW, 2677

across England and Wales. However, the success of these programmes depends not just on scale, but on the quality of delivery. Water companies typically focus on the competency of project managers in home visit programmes, overlooking home visitors - plumbers, technicians, and advisors - who are often contractors and excluded from internal operations. Without addressing the limitations of current home visits, there is the risk that water will remain undervalued and that behaviour change interventions will not maximise their value.

2.3 Social science in water efficiency engagement

The Social Science in Water Efficiency Engagement (SWEE) project, funded by the Water Efficiency Collaborative Fund and delivered by Glasgow Caledonian University and Artesia Consulting, is a behaviour change initiative designed to tackle a key challenge in domestic water efficiency.

> ***Its primary objective was to support home visitors by identifying gaps in their knowledge, skills, and experience related to behaviour change during household visits. These insights then informed the development of an adaptive toolkit, grounded in environmental psychology and behavioural influence strategies.***

Through this approach, the SWEE project sought to address a critical barrier to sustained water-saving behaviours and provide practical, evidence-based support to enable home visitors to drive deeper and longer-lasting reductions in household water use by:

- Taking a practical, non-theoretical approach to equipping home visitors with behavioural influencing techniques to promote water efficiency,
- Building the understanding and skills needed to motivate lasting behavioural change in water use,
- Providing a usable, hands-on toolkit that explores environmental psychology and behavioural techniques, such as knowledge transfer, self-efficacy, social norming, framing, tailoring, emotional cues, priming, and nudging.

The project also directly supports Objective 3 of the UK's Water Efficiency Strategy[6], which aims to raise public awareness and improve the effectiveness of water-saving campaigns. A 2024 Waterwise review[7] found only 'moderate progress' toward this goal. By equipping home visitors with behavioural tools and training, the SWEE project helps bridge this gap and empowers households to make lasting changes in water use.

Delivering this project at the beginning of AMP8 will enable the proactive integration of behaviour change principles into water efficiency initiatives. It is specifically aimed at supporting the plumbers, technicians, and advisors - collectively referred to as 'home visitors' - who will visit over 100,000 homes annually in water-scarce regions to retrofit water systems and educate residents. While technically skilled, **the outputs of this project will provide home visitors with the additional support and tools needed to effectively influence long-term behavioural change in water use**.

[6] Waterwise, 2024, UK Water Efficiency Strategy to 2030

[7] Waterwise, 2024, Uk Water Efficiency Strategy to 2030 – Progress report

3. Project plan

3.1 Project plan and timeline

The project was delivered between March and November 2025, and consisted of 12 actions across the following four key workstreams:

Figure 1: Overview of project plan including work packages

The project plan ensured a smooth transition through the various tasks and activities, which each building on the outcomes of those that preceded.

3.2 Project Steering Group

To ensure robust and effective governance, a Project Steering Group (PSG) was established to convene at key project milestones, providing strategic direction, critical review, and subject matter expertise. The PSG was designed to bring together a diverse range of stakeholders, including water efficiency project managers from wholesale water companies, internal water company delivery teams, contractors, and external experts in water efficiency. It was also important that the PSG brought diversity of thought around the variety of delivery routes (i.e. bespoke retrofit programmes vs smart meter rollout), and varying approaches to the types of home visitors deployed (i.e. plumbers, technicians and engagement advisors). This multidisciplinary composition was intended to support informed decision-making and ensure the project remained aligned with industry needs and best practices.

The PSG consisted of representatives from the following organisations:

Table 1: Organisations that formed the Project Steering Group

	Organisation
Contractors / delivery partners	Cenergist
	Groundwork London
	P N Daly
Water companies	Affinity Water
	Northumbrian Water
	Thames Water
Water company internal delivery teams	South East Water

Non-water company	Waterwise
Governance	Collaborative Fund Project Board

Glasgow Caledonian University and Artesia Consulting are grateful to the PSG for its time, energy and commitment. The PSG has contributed to the delivery of the peer-reviewed project that explored how home visitors deliver behaviour change and created a practical, on-the-job resource to support everyday conversations with households.

4. Insights from the home visitors survey

The key objective of work package 2 was to conduct social research, the outputs of which would provide clear direction for development of an adaptive industry-wide upskilling toolkit to address gaps in home visitors' knowledge, skills, and practice.

> ***This section provides a high-level summary of the social research. The full report (Home Visitors Survey Insights Report, Artesia Consulting and Glasgow Caledonian University, report reference AR1676, 2025) provides detail on the methodology, survey design, analytical approach, findings and recommendations for toolkit development.***

4.1 Summary of methodology

The project conducted a survey of 44 home visitors, including plumbers, technicians, and advisors, who actively deliver water efficiency visits. The survey explored their knowledge, skills, and training needs related to behaviour change. It was delivered online using Microsoft Forms and included both closed and open-ended questions. A purposive sampling approach ensured relevance to the research objectives, and responses were anonymised and analysed using a three-tiered framework: thematic analysis via NVivo, correlation analysis of key variables, and narrative analysis to provide contextual depth.

While limitations such as response bias and interpretive subjectivity were acknowledged, methodological safeguards were applied to ensure reliability. To minimise risks in survey design, the team applied industry best practices, including iterative testing and refinement, clear non-technical language, and a balanced mix of closed and open-ended questions, while limiting personal data collection. For data collection, potential biases such as recall bias, social desirability bias, and technological access limitations were acknowledged and mitigated through purposive sampling, analytical adjustments, and practical constraints.

4.2 Summary of findings

The findings revealed that **home visitors commonly employed basic behavioural influence tactics**, particularly knowledge transfer and financial framing. These approaches were often linked to the installation of water-saving devices and focused on economic benefits such as reduced bills. Some visitors demonstrated strong rapport-building and personalisation skills, tailoring advice to household contexts. However, **more advanced behavioural techniques - such as nudging, priming, emotional appeals, and social norming - were rarely used**. Environmental messaging was present, but lacked local relevance and was generally less effective unless paired with financial incentives.

Visitors also reported a range of barriers to influencing lasting behaviour change. These included difficulties engaging affluent households, behavioural inertia among older demographics, and mistrust of water companies. Misconceptions about water use and situational challenges during visits, such as household distractions, further complicated engagement.

While many visitors expressed confidence in discussing water efficiency, their strategies for engaging resistant or indifferent households were inconsistent. Notably, plumbers reported lower confidence and less exposure to behaviour change training compared to other roles (technicians and advisors), highlighting a need for targeted support. It could be argued that plumbing skills are less critical than engagement skills for water efficiency home visits, as most retrofit devices require minimal plumbing expertise (the exception being where leak repairs are considered necessary in the same visit). The effectiveness of these visits depends on their purpose; whether the primary purpose is water efficiency, or if water efficiency is added to a meter install visit, for example. When added to routine plumbing tasks, they add value, but as a standalone engagement mechanism, they are less effective. This raises the need to clarify the primary approach for water efficiency visits.

Correlation analysis showed some differentiation in behaviour change delivery across job roles. Advisors and technicians were more likely to consistently provide water-saving advice, while plumbers were less likely to do so and had received less relevant training. Despite high self-reported confidence in delivering behavioural tactics, visitors were less certain about their actual impact, suggesting a disconnect between perceived and real effectiveness.

The report concluded that while foundational behavioural tactics are in use, there is potential to enhance their application and expand the variety of techniques used by home visitors. The findings underscore the need for structured, practical support to build visitor capability and confidence. These insights directly informed the development of the behaviour change toolkit (see Section 5), which was delivered ion the following phase of the project. Based on this research, the toolkit was scoped to support flexible, scenario-based engagement, tailored to diverse household contexts and varying levels of visitor experience. It also sought to promote peer-to-peer learning, offer bite-sized training resources, and include guidance on applying behavioural science principles in real-world settings.

4.3 Toolkit development recommendations

The social research phases concluded with a series of recommendations for development of the toolkit. The was to be **designed to meet the practical needs of home visitors while enabling effective, scalable, and sustained learning in behaviour change delivery**. It needed to be both accessible and adaptable, ensuring that users across different roles and experience levels could engage with the material meaningfully.

Table 2 outlines a summary of key recommendations that informed development of the toolkit.

Table 2: Recommendations for toolkit development

Recommendation Area	Details
Bite-sized, accessible learning	Toolkit resources should be quick to digest, non-technical, and suitable for 'on-the-go' use. This format reduces time barriers and supports practical, scalable learning.
Peer-to-peer knowledge sharing	Materials should encourage both informal and formal exchanges between colleagues to embed new skills and strategies through shared experience.
Tailored support for plumbers	Specific resources should be developed for plumbers, who were identified as needing additional behavioural training to build confidence and improve engagement practices.
Confidence building	Toolkit content should aim to enhance both knowledge and confidence. Visual aids such as infographics and conversation prompts can support in-visit engagement and reinforce behavioural tactics.
Alignment with delivery models	Content should integrate with existing home visit structures and practices, ensuring Behavioural Influence Tactics (BITs) are presented in ways that fit real-world delivery.
Structured use guidance	Clear instructions should be provided on when and how to use the toolkit (for example, during induction, refreshers, or pre-visit preparation) to support long-term, meaningful use.
Flexibility for experience levels	Toolkit should cater to both new and experienced professionals. While core content may be standardised, dissemination should allow adaptation to different levels of familiarity with behaviour change.
Digital-first, offline-friendly	Resources should be optimised for mobile/tablet use and also printable. Editable formats (e.g., flashcards) should be supported, with appropriate design rights secured.
Suggested formats	Effective formats include flashcards, checklists, FAQs, scenario-based role plays, guide scripts, quizzes, and myth-busting factsheets.
Evaluation and feedback	A dissemination plan should include mechanisms to monitor toolkit usage and effectiveness, enabling continuous improvement based on user feedback and impact assessment.

This task also made recommendations on the proposed structure, to ensure the toolkit was practical, delivered an audience-specific application of behavioural science, and combined foundational knowledge with scenario-based guidance.

Part 1: Introduction to behaviour change

- Overview of behavioural change principles relevant to water use.
- Common water usage practices and where behaviour change can have impact.
- Introduction to customer segmentation and diversity in household contexts.

Part 2: Behavioural influencing

- Overview of reflective, semi-reflective, and automatic tactics.
- Practical examples of BITs linked to specific behaviours and household contexts.
- Scenario-based guidance with tips, dos and don'ts, and frequently asked questions.

Part 3: Engagement support

- Techniques for building rapport and engaging different audiences.
- Guidance on motivating commitment to change and reinforcing positive behaviours.
- Support for handling common challenges, such as debunking myths, addressing scepticism, or working with hard-to-reach or disengaged customers.
- Application of BITs to overcome specific engagement barriers (e.g., customer apathy, affluence, distrust, or resistance).
- Real-world examples and prompts to support reflection and skill-building.

In summary, the social research produced findings that highlighted a clear need for targeted support to build visitor capability and confidence in delivering behaviour change. It showed that there is an opportunity to build on existing strengths and equip visitors with flexible, practical tools to engage a broader range of households, respond to in-the-moment challenges, and apply a wider set of behavioural influence tactics. These findings were utilised to inform the development of a high-level toolkit plan, as documented in Section 5.

5. Development of the toolkit

Following guidance from the Project Steering Group (PSG), it was agreed that a creative agency would be commissioned to lead the development and design of the toolkit. This decision was driven by the need to ensure that the final product would not only meet its functional objectives, but also be engaging, visually compelling, and practically usable by home visitors. The toolkit is intended to support the upskilling of home visitors by addressing gaps in their behavioural engagement knowledge, skills, and practices. To achieve this, it was essential that the content be presented in a way that resonates with a professional, yet largely non-technical (in the context of behavioural science) audience.

Involving a creative agency brings specialist expertise in visual communication, user experience, and instructional design. These skills are crucial for transforming technical and behavioural science content into accessible, intuitive, and appealing resources. Weir the Agency (Weir) was commissioned, with their role being to help bring the toolkit to life, both structurally and aesthetically, ensuring that it is easy to navigate, adaptable to different learning styles, and suitable for use in real-world visit scenarios.

By investing in professional design, the project sought to maximise the toolkit's impact, uptake, and long-term value by ensuring it is not only informative but also engaging and empowering for those who use it.

5.1 Toolkit design brief

Weir was provided with a full design brief as presented at a design kick-off meeting.

The design brief outlined the following key requirements:

- The design required the **creation of a non-technical, practical toolkit** aimed at upskilling home visitors such as plumbers, technicians, and advisors. Its purpose was to bridge the gap between hands-on experience and theoretical understanding by introducing concepts of behaviour change and environmental psychology in a way that feels approachable and actionable.

- The toolkit was to be **static, printable, and optimised for mobile and tablet use, ensuring offline accessibility through PDF formats**. It should also consist of **engaging, easy-to-digest resources that avoid dense text and technical jargon**. Instead of traditional training formats, the design should favour practical, on-the-go learning experiences that are quick, fun, and visually appealing.

- The content was to be brought to life through **creative design that makes it accessible and attractive for a professional audience**. Visual structure and layout should support usability, clarity, and engagement, using simple visual aids and intuitive navigation to encourage frequent use.

- The ultimate goal was to produce a toolkit that feels practical, motivating, and adaptable, enabling home visitors to confidently apply behaviour change techniques during real-world interactions.

5.2 Stakeholder engagement and user testing

To ensure the toolkit was both practical and user-focused, stakeholders were engaged through the PSG and a phase of user testing.

Following the creation of an initial draft by Weir, the toolkit was shared with the PSG for review. A dedicated PSG meeting was convened to provide members with an opportunity to share reflections, critique the content, and suggest amendments. This collaborative approach ensured that the toolkit aligned with industry needs and addressed the practical realities of home visits.

A user testing phase was also delivered to test and validate the toolkit's usability and effectiveness in real-world contexts. Appropriate organisations on the PSG were asked to facilitate this phase by distributing the draft toolkit to a small group of home visitors selected from their organisations. To ensure meaningful insights, the selection criteria recommended including visitors with varying levels of experience (from new entrants to seasoned

professionals) reflecting the diversity of the intended user base. Each participating visitor was asked to review the toolkit and respond to three key questions designed to capture learning outcomes, practical applicability, and opportunities for improvement:

1. What did you learn about behaviour change?
2. Practically speaking, do you think this toolkit could help you improve your visit outcomes? Please explain your answer.
3. If you could improve the toolkit, what would you do?

Responses were collected via a Microsoft Form, ensuring anonymity to encourage honest and constructive feedback.

This structured approach aimed to generate actionable insights that would inform the final design and content refinements, ensuring the toolkit was not only theoretically sound but also practical, engaging, and effective for its end users.

5.3 Summary of stakeholder engagement feedback

The **PSG** provided detailed comments on the draft toolkit, focusing on clarity, usability, and alignment with project objectives. Several stakeholders highlighted the need for stronger contextual framing in the introduction, suggesting additional content on why water efficiency matters, the scale of the challenge, and the urgency of behaviour change. Suggestions included the need to include headline statistics and references to authoritative sources, such as the Environment Agency, to reinforce credibility.

Navigation and accessibility was also highlighted, with the suggestions including clickable links to return to the contents page, ensuring compliance with accessibility standards, and refining section headings to make them more intuitive. Stakeholders also recommended breaking down Behavioural Influence Tactics (BITs) into beginner and advanced sections to avoid overwhelming new users, and adding clear signposting for examples within the BIT section.

Other feedback focused on tone and audience. Some felt the toolkit currently read as a guide for experienced home visitors and should include framing for those new to behaviour change. There were also requests to make the content more practical by integrating real-world scenarios and expanding on how visitors can use household water consumption data during visits, particularly with the rollout of smart meters.

Additional comments included minor design and editorial changes, such as font adjustments and improving consistency in headings. Stakeholders also asked for clearer attribution in the credits section, including author names, peer-review acknowledgment, and citation guidance.

User testing was conducted with home visitors of varying experience levels to assess the toolkit's practicality and relevance. Overall, participants found the toolkit informative and appreciated its emphasis on tailoring conversations to household values and motivations. Many noted that the content reinforced existing practices while introducing new techniques, such as using social norms alongside financial incentives to influence behaviour.

Respondents agreed that the toolkit could help improve visit outcomes, particularly by providing structured approaches for engaging disinterested customers and offering practical tips for behaviour change. Several highlighted the importance of framing advice appropriately, avoiding a preachy tone and focusing on what matters most to each household, whether cost savings or environmental responsibility.

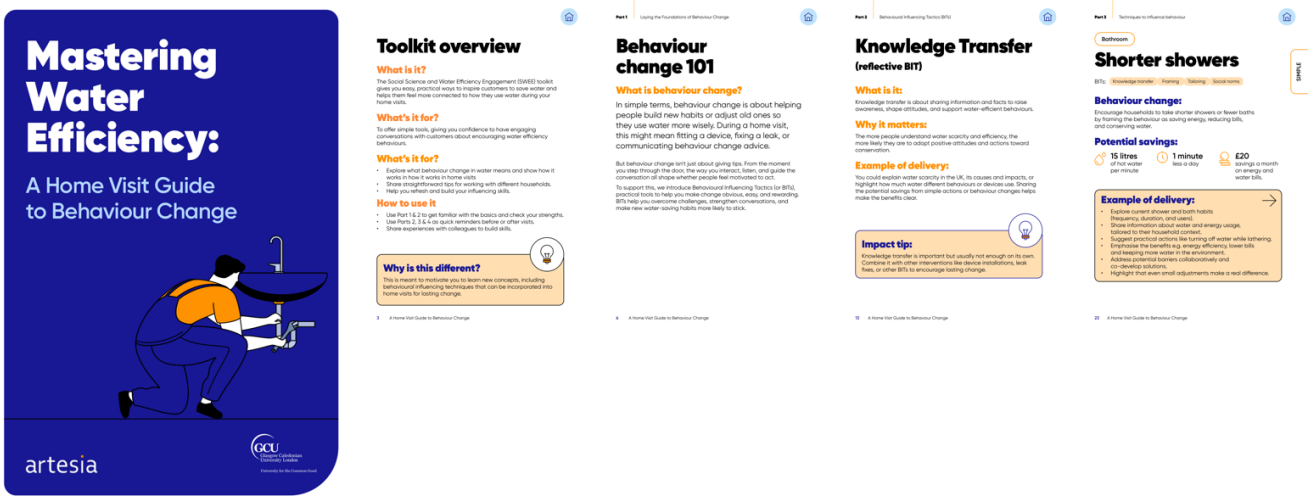
Suggestions for improvement included adding quick-reference materials, such as printable handouts or app-based flashcards, to support in-the-moment conversations. Participants also recommended integrating Q&A content directly into the toolkit rather than linking externally, expanding data on water savings for specific behaviours, and simplifying certain questions in the garden section to make them easier for customers to answer.

Overall, feedback from both elements of stakeholder engagement confirmed that the toolkit is a useful resource, but could be strengthened by making it more interactive, adding visual aids, and ensuring content is concise and easy to navigate. Whilst some suggested amendments were deemed out of scope, the majority of insights informed the final design and content refinements to ensure the final toolkit is engaging, practical, and effective for its intended audience.

5.4 Final design

The final version of the toolkit - 'Mastering Water Efficiency: A Home Visit Guide to Behaviour Change' – was created, incorporating the feedback and recommendations from the PSG and user testing. Figure 2 shows a collage of selected pages from the final version.

Figure 2: Collage of selected pages from the final toolkit



6. Implementation strategy

The successful adoption of the SWEE toolkit requires a structured approach that accommodates a variety of delivery models and operational contexts within the water-sector delivery of home water efficiency visits. Project managers have several options for integrating the toolkit into home visit programmes, ensuring it becomes a practical and sustainable resource for driving behaviour change.

To gain the greatest possible impact, use of the toolkit will depend on adjusted implementation approaches that account for the diverse experience levels of home visitors. While some visitors have extensive experience delivering water efficiency advice, others are new to the role and may lack confidence in applying behavioural science principles. The way in which project managers encourage use of the toolkit should therefore be adapted to ensure all users can engage effectively with the toolkit, and that it gives most value.

The toolkit could be introduced through a **phased rollout**, beginning with induction sessions for new home visitors and refresher workshops for experienced staff. Below we set out various considerations for different applications based on the experience of the home visitors. Whilst we distinguish between approaches that could be adopted for home visitors with varying levels of experience, it should be acknowledged that there are also opportunities and benefits to be realised through enabling engagement across the cohorts.

- For **new home visitors**, training should focus on foundational concepts, such as understanding behavioural change, building rapport, and applying simple BITs. This could be supported by the use of the practical exercises and scenario-based learning provided. The emphasis should be on confidence-building, structured conversation guides, and quick-reference materials to support early visits. This will allow newer team members to test and learn, with iterative support provided where needed. Interactive role-play and peer mentoring should be incorporated to accelerate skill development.

- For **experienced visitors,** training could be delivered through more advanced modules that deepen their understanding of complex tactics like priming, nudging, and emotional framing. Taking this approach would assist the need to apply more challenging BITs, or to apply the tactics in scenarios which may have previously been avoided. The training should also explore strategies for overcoming entrenched behaviours, and focus on enhancing adaptability and expanding their behavioural toolkit. Advanced workshops could encourage reflection on past practices, the introduction of innovative engagement techniques, and provide opportunities to share best practices with peers.

The successful rollout of the SWEE toolkit also requires a structured approach that accounts for the varied roles, including plumbers, technicians, and engagement advisors. Each group interacts with households differently, and the strategies adopted by project managers should reflect these differences to ensure effective engagement and adoption.

- **Plumbers** typically focus on technical tasks such as device installation and leak repairs, with limited time for extended conversations. The strategy for this group should promote the bite-sized nature of the resources and prioritise use of the flashcards, which could be printed and laminated. Any use of the toolkit in training should focus on the use of simple scripts and prompts for introducing behaviour change messages without disrupting technical work, which is where the plumbers will most like feel comfortable. Project managers should offer short, practical examples of how to integrate BITs into routine tasks (e.g. framing advice while explaining device benefits), and should emphasise techniques like nudging and priming that can be applied subtly during technical interactions.

- **Technicians** often have a broader remit, combining technical work with customer engagement. For this group, a strategy might involve embedding toolkit use into existing workflows, ensuring BITs are linked to common tasks such as meter installations or efficiency checks. The toolkit has been designed to be mobile-friendly, which will allow for quick look-ups before or after visits. Project managers should encourage technicians to share experiences and tips through team meetings, reinforcing practical application. The focus could be on semi-reflective tactics like framing and tailoring, which technicians might be able to use to personalise advice based on household data (especially in relation to smart meter install visits).

- **Advisors** typically have more time for conversation and education, making them key drivers for behaviour change. Project managers could adopt a strategy that equips advisors withy the full suite of resources, including details guidance on BITs and engagement techniques. There might be scope to provide deeper learning on environmental psychology and behaviour change principles to strengthen advisory skills. Advisors may be more open to the incorporation of role-play exercises and scenario-based activities to build confidence in handling challenging conversations.

Finally, it is beneficial to think about how the toolkit could be applied in practice. Figure 3 summarises things to think about in relation to implementation of the toolkit in practice.

Figure 3: Toolkit implementation considerations

The implementation strategy focuses on tailoring the SWEE toolkit to the distinct needs of plumbers, technicians, and engagement advisors, ensuring practical integration into their daily practices through role-specific training and adoption.

7. Dissemination

To maximise reach and adoption of the SWEE toolkit, a multi-channel dissemination strategy was designed, to be implemented following completion of the project. This included the following activities:

- Presentation of the toolkit at the Water Efficiency Forum to engage industry stakeholders,
- Creation of project webpage, to host the SWEE toolkit and final reports,
- Adding the SWEE toolkit and final reports to the Waterwise evidence database to ensure long-term accessibility,
- Targeted emails to contractors and water companies, providing an overview and links to the toolkit and implementation strategy,
- Broader outreach through emails to key external stakeholders to promote awareness and encourage sector-wide engagement.

8. Conclusions

The Social Science in Water Efficiency Engagement (SWEE) project has demonstrated the critical role of behavioural science in achieving long-term water efficiency outcomes. While technical interventions such as device retrofits remain essential, the evidence gathered through this project confirms that their impact is limited without complementary strategies to influence household behaviours. The survey of home visitors revealed that current engagement practices rely heavily on basic techniques such as knowledge sharing and financial framing, with limited application of more advanced behavioural influence tactics. This gap underscores the need for structured, practical support to build capability and confidence among those delivering home visits.

The development of the SWEE toolkit represents a significant step toward addressing this challenge. Designed to be accessible, engaging, and adaptable, the toolkit provides home visitors with actionable guidance rooted in environmental psychology and behavioural science. By incorporating techniques such as social norming, priming, nudging, and emotional framing, alongside practical tips for tailoring conversations to household contexts, the toolkit equips practitioners to move beyond transactional interactions and foster lasting behavioural change.

Stakeholder engagement and user testing confirmed the value of this resource while highlighting opportunities for refinement. Feedback emphasised the importance of clear navigation, concise content, and visual aids to support on-the-go learning. It also reinforced the need for flexibility to accommodate varying levels of experience and for alignment with real-world delivery models. These insights have informed the final design, ensuring the toolkit is not only theoretically robust but also practical and user-friendly.

Looking ahead, the successful implementation of this toolkit will depend on continued collaboration across the sector. Future priorities include embedding the toolkit within large-scale retrofit programmes during AMP8, extending its application to non-household settings, and developing interactive formats to enhance engagement and learning. Evaluation mechanisms should be established to measure its impact on visit outcomes and water savings, enabling iterative improvements over time.

By integrating behavioural science into water efficiency delivery, the SWEE project provides a foundation for transformative change. Equipping home visitors with the skills and tools to influence behaviour will help unlock the full potential of demand management measures, supporting the UK's ambition to reduce per capita consumption and build a more resilient water future.

8.1 Key recommendations

Building on the insights from stakeholder engagement, user testing, and the development of the SWEE toolkit, the following recommendations are proposed to ensure the toolkit delivers maximum impact and continues to evolve as a practical resource for the water industry:

Deliver a Full User Testing Phase

Conduct a comprehensive user testing programme to evaluate how the toolkit performs in real-world settings. This phase should involve a diverse group of home visitors across different roles and experience levels, enabling the project team to capture detailed feedback on usability, relevance, and effectiveness in improving visit outcomes.

Implement a Robust Evaluation Framework

Develop and apply an evaluation approach that measures the toolkit's impact on behaviour change and visit outcomes over time. This should include both qualitative and quantitative metrics, such as changes in household water use, visitor confidence, and customer engagement quality. Findings should inform iterative improvements to the toolkit.

Enhance and Digitise the Toolkit

Work collaboratively with contractors and home visitors to create an enhanced, interactive version of the toolkit. This should build on insights from user testing and incorporate features such as digital navigation, embedded

multimedia, and scenario-based exercises. The process should be user-led, ensuring that the design reflects the practical needs and preferences of those delivering home visits.

Extend Application to Non-Household (NHH) Settings

Adapt the toolkit for use in non-household contexts, revising content to reflect the unique challenges and opportunities of engaging businesses and organisations. This should include guidance on applying Behavioural Influence Tactics (BITs) in commercial settings and strategies for influencing organisational water use behaviours.

Thank you

Our Purpose

At Artesia, we combine deep industry knowledge with advanced analytics to help the UK water sector forecast demand, reduce waste, and cut carbon. Since 2008, our mission has been to make the sector more progressive, inclusive, and resilient, building a sustainable future for generations to come.

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