waterwise

# Evaluation Guide For Water Efficiency Initiatives

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# 1. Introduction

This Evaluation Guide for Water Efficiency Initiatives has been developed specifically for water efficiency practitioners, those responsible for planning and carrying out water efficiency projects and programmes of work. The evaluation tools covered and the level of detail included has been tailored specifically for this audience.

This guide has been developed under the Waterwise Evidence Base for Large-scale Water Efficiency, an on-going stream of work which brings together information and experiences from across the water industry in order to better understand and make the case for water efficiency initiatives. Previous Evidence Base projects have identified that a major barrier to the continued development of the evidence base is a lack of robust quantitative and qualitative data from water efficiency initiatives, as well as the lack of standardisation of evaluation approaches to such initiatives. It has also been made clear through the Evidence Base consultation process that water companies want support to understand the impact and effectiveness of their water efficiency work. As well as providing water efficiency practitioners with an improved understanding of evaluation, this guide and the accompanying documents will help to unify the work being conducted across the industry. Industry-wide agreement on evaluation approaches will begin to enable the development of a more sophisticated evidence base, through which direct comparisons can be made between similar initiatives led by different companies.

The information included within this guide draws upon a range of sources, including the experience of Waterwise staff, and literature on evaluation and research methods. A range of experts specialising in specific areas have also been consulted, and their valuable contributions are noted against the relevant section.

This Evaluation Guide for Water Efficiency Initiatives is intended to act as a reference document for water efficiency practitioners, who can use it to understand what evaluation is, why it is important, key aspects to consider when planning an evaluation, some of the different evaluation tools available and when they are useful. The aim is to leave the reader confident in their understanding, and comfortable with different aspects of evaluation – this guide is by no means exhaustive, with the level aimed for to be able to knowledgeably commission contractors, not necessarily to conduct the evaluation themselves.

# 2. What is evaluation?

Evaluation is an 'objective process of understanding how an intervention was implemented, what effects it had, for whom, how and why'. [1] By evaluating a water efficiency initiative, you are looking to examine whether you achieved what you set out to, what impact you have had, why that impact occurred, and how well you went about it.

Although often thought of as an activity that takes place at the end of an initiative, evaluation is in fact a process that takes place before, during and after an initiative – this is discussed further in Chapter 3.

The results of an evaluation can be used not only to demonstrate and understand the achievements of an initiative, but also to drive improvements to future work both within individual organisations and if shared, across the wider industry.

## 2.1 Different evaluation types

Although a wide range of terms are used, broadly speaking there are three different evaluation types relevant to water efficiency initiatives; summative evaluation, formative evaluation, and evaluation of processes. You may use only one or all three depending on what you wish to understand with your evaluation activities.

### Summative evaluation

The best understood and most well used for water efficiency initiatives, summative evaluation examines the outcomes of an initiative, examining whether aims have been met and the extent to which an initiative has had an impact.

The focus in this guide will be upon 'goal-based' evaluations, where measurable aims and objectives are set at the beginning of an initiative (for more information see Chapter 3), and the evaluation activities seek to assess if these have been met. However it is important to be aware that evaluations can also be 'goal-free', where aims and objectives are not pre-determined and the focus is on learning through emerging results and unintended consequences. In practice, it will often be beneficial to allow room in your evaluation activities for 'goal-free' elements, as this will help to ensure that unexpected, but still important, outcomes are considered and recorded.

The types of questions asked within a summative evaluation include:

- Did the initiative result in a reduction in water consumption in the home / at the school / within the organisation?
- Has the initiative resulted in a change in peoples' understanding and knowledge of water efficiency?
- Did the initiative influence peoples' behaviour when using water / showering / gardening?

In most cases, the majority of analysis for summative evaluations will take place at the end of an initiative. However the process will usually start before the initiative is even off the ground, as in order to understand what change has been achieved, a baseline must be established or an appropriate comparison group identified. Summative evaluation activities will often focus on quantitative data such as changes in water consumption data



1. HM Treasury (2011). The Magenta Book guidance for Evaluation.

or statistical changes observed through survey data, this does not however exclude qualitative tools such as focus groups or interviews from being used to gain a deeper understanding of the 'whys'.

### Formative evaluation

Formative evaluation helps shape decisions during the development of an initiative. When developing an initiative, particularly one that is completely new or involves elements that have not been tried before, it may be useful to test out or pilot certain elements to ensure they will work in the manner intended.

For example, if you are developing a website, watching people interact with a working prototype could provide useful information when finalising the design. Or you may want to try out key messages from a campaign you are planning, to make sure people understand them and that they convey the meaning intended. It could be that you wish to test out the appeal of an offer, for example if you are offering water efficiency retrofits, will people sign up for them?

Typically used prior to the start of an initiative, this type of evaluation is not restricted to the beginning as there may be need to test out new elements throughout the life of an initiative. Formative evaluation activities tend to be qualitative in nature, with an emphasis on discussion-based methods such as focus groups or interviews.

### Evaluation of processes

Evaluating the management and delivery of your initiative allows lessons to be learnt and recorded, meaning that improvements can be made both within the current programme as well as in future work. It is important to understand what has worked well and what has worked less well so that effort and resources are used in the most effective way.

For example, an initiative is piggybacking water efficiency retrofitting onto water meter installations. A month into the initiative it becomes clear that not many water efficiency retrofits have been carried out. A discussion with the meter installers reveals that they feel uncomfortable bringing up the retrofit offer 'cold' with the householder. It is agreed that in future a flyer will be sent to the household a week prior to the visit offering the water efficiency retrofit, meaning the householder may take the initiative or allowing the meter installer to use a flyer as a prompt. This approach works well, and so will be considered from the outset in future initiatives.

Whilst it will always be useful to reflect back upon the management and delivery of an initiative once it is completed, most use will be gained where these processes are assessed and evaluated throughout the duration of an initiative. Evaluating the processes of an initiative can be as simple as scheduling in times to talk through progress with key staff members, allowing issues to be identified, recorded and resolved where possible.

# 3. Planning your evaluation

Evaluation is a process that takes place before, during and after an initiative and as such it is important to start making your evaluation plan in the early stages of developing an initiative. Below are some of the key elements to consider when planning your evaluation.

## 3.1 Setting aims and objectives

It may sound obvious, but the first step towards developing your evaluation plan is to clarify your aim(s). At this point you need to be thinking about the big picture – what are you hoping to achieve, what is the point of your initiative? It is here that the findings of previous evaluations may be usefully fed-in to the planning of the current work. Having clear aims is crucial not only for evaluation purposes, but will also help to focus the development of the initiative. Typical aims for a water efficiency initiative may be to:

- Increase awareness of why water efficiency is important,
- Reduce water consumption,
- Make a positive change for local rivers and streams.

Once the aims of an initiative are clear, objectives can be developed. Objectives are the things that need to happen in order to achieve your aims – where aims can be quite fuzzy, objectives are tangible, specific, concrete, and measurable.

SMART is an often used acronym that can be useful when setting out your objectives. The table below outlines the principles of SMART and can act as a starting point, however there is a great deal of literature available around this subject should you wish to know further details.

| | |
|---|---|
| Specific | Make your objective specific – what exactly do you wish to accomplish, where and with or for who? |
| Measurable | Is your objective measurable - how will you know when it has been achieved? |
| Achievable | Is it possible to achieve the objective within the constraints of the initiative? Your objective must be realistic. |
| Relevant | Achieving your objective must contribute towards the initiative aim(s). |
| Time-bound | By when must the objective be achieved? Setting a time frame will ensure you are able to assess if an objective has been reached. |

Using an example initiative, it is possible to see how to move from a broad aim to specific measurable objectives. Our example will be a home visit retrofit initiative targeting households within the town of Woking, the aim of the initiative is 'to reduce water consumption'. When developing your objectives the first step is to think about how you will know that water consumption has been reduced. For this one aim it may be that there are a number of objectives that will support it, for example the following three objectives could all do so:

Once the objectives for your initiative have been set, these can then be used to help you decide on the appropriate evaluation tools required in order to measure if an objective has been met.

| Aim: | To reduce water consumption |
|---|---|
| Objective A: | Install water efficient devices (during a home visit retrofit) in 4000 households in Woking within a year of the initiative kick-off |
| Objective B: | To reduce household water consumption by 15% on average within participating households (at the end of the one year initiative) |
| Objective C: | That 35% of residents who receive a home visit retrofit report positive changes in their water using behaviour (at the end of the one year initiative) |

## 3.2 Choosing evaluation tools

A range of evaluation tools (data collection methods) are described in Chapter 4, and it may be that you will employ one or a range of these in order to assess your initiative. Using multiple evaluation tools to triangulate findings and gain a fuller picture of both what works and why can be very valuable. A commonly used approach is to first collect quantitative data, via water meter readings or surveys for example, and use this to guide where to investigate further with qualitative methods, such as interviews or focus groups, in order to understand not just what worked but why, where and for whom.

Choosing what tools to use is an important part of evaluation planning, and your objectives will form the base from which to decide which may be most appropriate.

Using Objective B from the example initiative above 'To reduce household water consumption by 15% on average within participating households (at the end of the one year initiative)', the first step is to consider how you could potentially measure performance against this objective. Measures may be a reduction in metered water consumption at the household level, or the proportion of residents reporting making specific changes to their water consumption patterns could potentially be used to calculate an overall change at household level. In the first instance, measuring water consumption data would be the evaluation tool employed to identify any reduction. Examining reported changes to water consumption patterns could utilise a number of tools, including surveys, interviews or water diaries, dependant upon the specific situation.

It will often be clear which evaluation tool to choose, however it is always worth taking a step back in order to assess if there may be a more appropriate option than that which appears the obvious choice, or whether indeed multiple tools should be used.

## 3.3 Further considerations

There are some further considerations to take into account when planning to evaluate your initiative, such as:

### Who will carry out the evaluation?

Deciding who will carry out the evaluation of an initiative is often decided by the level of in-house expertise as well as the budget available. Water efficiency practitioners, by the very nature of their role, are not usually expected to be experts in evaluation. With this in mind it is often more straight forward to outsource evaluation activities, hence why the level aimed for within this guide is to enable practitioners to knowledgeably commission contractors, not necessarily to conduct the evaluation themselves. That is not to say it is not possible to conduct evaluation activities in-house, and with budget constraints this may often be the only realistic way in which any evaluation activities will be carried out.

### Data protection and anonymity

Many evaluation activities involve handling and using personal data – therefore an important factor to keep in mind when carrying out any evaluation activity is the constraints of data protection and your duties under the Data Protection Act. Full details can be found on the Information Commissioner's Office website (www.ico.org.uk), and it is also worth checking data protection procedures within your own organisation. Some key points when data protection rules come into play include:

- Contacting individuals to take part in evaluation activities – If your organisation already holds contact details, for what purpose are they held? In the case of a water company, if contact details are held solely for billing purposes, then it may not be acceptable to use them for research and evaluation.

- Collecting data - If you are requesting personal details, consider what level of detail you actually require – do not ask for a phone number and email address when all you require is the name and address of the person in question – you cannot collect data just on the off-chance it will become useful.
- When collecting data, you will need to use a 'privacy notice' - This explains who you are, what you are going to do with the data and who it will be shared with. Why you are collecting personal information must be transparent.
- You must keep personal data secure - You must have appropriate security to prevent the personal data being compromised. For example, you will need the right physical and technical security i.e. only authorised people should be able to access the data.
- Re-contacting individuals - If you know why you would need to re-contact individuals then you must state this in your original privacy notice, if you do not get permission at the time of collecting the original data then you will not be able to use this information for further purposes.
- Retaining personal data - You should securely delete data that you no longer need once your initiative and evaluation is complete. It's not acceptable to hold onto it on the off chance that it might become useful again in the future.

# 4. Evaluation tools

A range of evaluation tools can be used to inform the design of an initiative, judge its success, or examine its processes. The focus here is upon those tools that will be most useful within water efficiency initiatives, however the list is by no means exhaustive. The table[2] below summarises the evaluation tools covered within this guide and broadly touches upon when they may be best used.

| Tool | Who to use it with and when to use it | Strengths | Weaknesses |
|---|---|---|---|
| Water consumption data | Can be used for all initiative/ project participants, but is normally aggregated at local or household scale, depending on the granularity of metering. If water efficiency interventions are being made, consumption data is a fairly robust way to evaluate impact. | Can give absolute data values against which to measure success. Enables inter-comparison of interventions between initiatives/projects. Can provide information on spatial and temporal variations in impacts. Can provide discrete data points to assess statistical variability. | Can be costly and time consuming depending on the level of data collection and the level of automation. Requires collection of detailed either baseline data prior to roll-out of interventions, or normalisation of data. Whilst it is very useful for assessing physical interventions, it is poor at evaluating behavioural and attitudinal aspects water efficiency. |
| Surveys | Can be used with everyone who is involved in your initiative. Can be used at a range of points, before, during and after an initiative. Surveys are often used when there is a need to quantify public opinions, behaviours or characteristics. | Potentially big data sets. Multiple choice questions are better for providing statistics, but you do need enough people to complete them for the statistics to be meaningful. | Questionnaires do not tend to access the underlying reasons for responses. Unless considerable effort is put into encouraging response, only those interested will respond. Answers will be limited to pre-chosen questions (unlike interviews). |
| Focus groups | Can be used with a selection of the audience.<br>Can be used at a range of points, before, during and after an initiative. | Useful for organised discussion with a group of individuals to understand their views and experiences of an initiative/project. More qualitative information than a questionnaire will provide, and will take less time than administering several individual interviews. | Focus groups require good mediation. As it is an open-ended process, you may not get the precise answers that you would expect from a questionnaire or interview. The size and composition of the group are important considerations. |
| Interviews | Any person that you require more in-depth and qualitative answers from. Can be used at a range of points, although useful to use after an initiative has finished. | Great to understand different people's experiences of being involved. Allows you to explore in-depth reflections, and can uncover surprising findings. | Interviews can be staff intensive. There is a limit to how many interviews you can conduct, so you might end up with small numbers. |
| Water diaries | These work best with participants directly involved in the initiative. Ideally, throughout the life of the initiative/project, but particularly around the point of intervention. | Diaries that are kept throughout a course of an initiative/project can provide evidence of personal development, behaviour, thoughts and feelings. | The value of the information collected depends on how truthful it is. They are unpredictable, some will provide lots of information; others will be brief and uninformative. |

## 4.1 Water Consumption Data

With thanks to WRc, and Sam Ledgar and Suzanne Dunn of Yorkshire Water for their input into this section.

### Water consumption data – what is it good for?

Water consumption data provides information about the volume of water used, and in terms of evaluating water efficiency initiatives, any change in the volume of water used – with a reduction in water consumption often being a key measure of success. Water consumption data is often collected at household level (as per the example below), but can also be collected at a greater (e.g. district metering areas) or smaller (e.g. individual household appliances) scale, as well as in other situations such as for businesses and schools.

Water consumption data can be used for two main evaluation methods: a simple before-after study and a before-after study with a comparison group:

In a simple before-after study, water consumption data would be collected from participating households both before and after (and likely during) the initiative. Any change in water consumption over time can then be attributed to the initiative, as long as all other possible causes of change (such as seasonal change, short-term weather change, other initiatives) have been ruled out. In practice the difficulty of ruling out other possible causes makes this design somewhat problematic, and normalising assumptions are made based on observed data from the other potential causes of change.

A much stronger design is a before-after measurement of participating households alongside a before-after measurement of a suitable comparison or control group. By monitoring the water consumption of the comparison group it is possible to assess how much of the change in water consumption over time can be attributed to other causes (other than your initiative). Subtracting the change over time attributed to other causes from the change over time for the households participating in your initiative gives an estimate of the impact of the initiative on household water consumption. Care has to be taken in picking a suitable comparison group – the comparison group must, for instance, experience the same seasonal weather patterns as the participating group, and should have a similar age and socio-economic profile. The ideal way to generate such a comparison group is through random allocation, but even with a hand-picked comparison group this can be a very strong evaluation design.

### Timing – when to use water consumption data

In order to successfully examine the impact of an initiative on water consumption, data should be collected before, during and after the initiative is complete.

Creating a baseline is an essential element of evaluation, in order to understand what was happening prior to an initiative being implemented and subsequently capture exactly what happens as a result [3]. Plenty of time needs to be allowed to collect baseline water consumption data before the start of the initiative, as there are many factors that can influence the results.

Ideally baseline data is needed to cover a full year, particularly where a simple before-after approach is being used, as this will allow seasonal variations to be taken into account to some degree. However this is not always practical, and so often a baseline is established over a 3 month period, with a control group used to account for seasonal variation. The exact monitoring period will depend upon the resolution of the data being collected and the aims and objectives of the initiative.

[2] UCL (2010). Evaluation Methods for Public Engagement Projects

[3] HM Treasury, (2011). The Magenta Book Guidance for Evaluation.

Water consumption data should continue to be collected after the household has been involved in the initiative, ideally for as long as possible because water savings can change with time, or outcomes from information or educational intervention may take time to have an impact. After the formal end date of the initiative, the frequency of meter readings can be relaxed but it is recommended that water consumption is monitored for up to two years post intervention.

Across the water industry there is very little data on the longevity of savings following water efficiency initiatives. Therefore it would be good to monitor water consumption data over a number of years post initiative completion. However meter data alone is not sufficient as there will be changes in ownership, occupancy and appliances and even the removal of water efficient devices, which will mean that additional data must be collected in order to interpret the water consumption data over time. This could be obtained by sending questionnaires at perhaps annual intervals, however it is challenging to engage individuals over a long timeframe.

### Sample size and selection

Samples should either be representative of the population or housing stock you are assessing, or the non-representative nature of the sample should be taken into account in the interpretation of the results. For example, when gathering information to be used at a water company level the sample should be representative of the population served. To select a representative sample the composition of the company's customer base should be understood and used as guidance. Characteristics such as geographical location, property type and age, socio economic classification and occupancy rates should be considered as a minimum.

Where such characteristics are not taken into account, it can mean that the participants are very different to the general population, and assuming that the results would apply to the general population would be wrong. For example different socio demographic groups might have different attitudes to water, with data dependent on area and types of households recruited.

Once the basic design has been decided on (i.e. simple before-after approach or before-after with a comparison group), the next step is to decide on the sample size required. There are formal ways of determining sample size, but the crucial issue is the effect size that the initiative is expected to have. If the effect size is expected to be large, such as in the case of a full home retrofit programme, a small sample size will suffice; but if the effect size is expected to be small within the initiative timeframe (such as in the case of a single targeted behaviour change programme) a larger sample size will be needed. In general, whatever the required sample size, additional households will need to be approached, on the grounds that not all will agree to take part in the study and that some will take part but will drop out or need to be excluded because for example they have moved home.

There is a formal method of determining the sample size required based upon the level of precision required, the level of confidence required and the degree of variability of water use in the sample population. Standard statistical formulae are then used to combine these elements in order to derive sample size subject to various assumptions (normal distribution of data etc). It is best to consult with statistical experts within your organisation or refer to standard statistical textbooks when defining the sample size required for your specific initiative.

The sampling regime is closely related to what is to be determined, e.g. based on estimating mean water saving per day, following the installation of water saving devices.  This can be estimated regionally, using a stratified regime and proportional allocation. However, to compare these results from groups of households (e.g. savings between housing types) there is a need to sample the same number of cases from each group.

More households or customers than required should be included to allow for data collection on a) a control sample and b) a reserve group, should some of the original participants not wish to take part. The control group should be given the least possible information about the study and efforts should be taken not to influence their behaviour.

### Collecting water consumption data

Water consumption data is most commonly collected via water meters or data loggers. Approximately a third of domestic properties are currently metered in the UK, however there are different types of 'existing' meters in use by different water companies. The majority of these are 'dumb' meters which require manual collection of readings in regular intervals (most often quarterly or biannually). These readings are subsequently used to calculate volumes of water used since the previous meter reading was taken. More modern types of meters (sometimes referred to as 'smart' or 'semi smart') are being introduced and trialled by water companies. These meters have functionalities that allow an enhanced or more automated collection of meter readings. Meters with automatic meter reading (AMR) technology can increase the frequency and volume of readings. The data is often transferred to a central database, allowing monthly baseline reads and consumption analysis from billing. All types of 'existing' meters can be used to collect water consumption data, however it must be considered how often the readings will need to be collected to meet the objectives of the study and what method will be utilised to collect the meter readings.

Data loggers are often required if alternative specialised technologies are employed for water consumption data collection. Data loggers are electronic devices that record data over time, or in relation to location, either with a built in instrument or sensor via external instruments and sensors. These systems are often used to collect high resolution data more frequently than traditional systems (for example at one second intervals or when access to meter chambers is difficult or impossible).

On a practical note, getting an accurate meter reading can be problematic, e.g. difficulties in locating meters, condensation obscuring the readings and obstruction to the meter chambers. For long term studies it should be considered whether sites will be visited regularly to avoid any data loss if it is not remotely transferred.

### Preparing water consumption data for analysis

The preparation of water consumption data requires a single spread sheet detailing the time series of readings per household, together with date of intervention and supplementary information from other evaluation activities you may be carrying out, such as water diaries or a survey.

When preparing data for analysis, some may need to be removed. This can be due to having missing data, insufficient or inconsistent readings, or for example lack of information concerning retrofit devices installed.

Any erroneous readings have to be excluded from the analysis which may result in too few readings to enable an assessment of usage, particularly pre intervention. In which case that particular household would be excluded from the analysis because it would not be possible to compare pre and post initiative water usage.

Consecutive meter readings should be compared to highlight zero or negative water consumption over a given period. Zero water consumption can indicate a faulty meter or genuine no water consumption due to absence of occupants, therefore zero values should be excluded from subsequent analysis. Any 'negative' cases of water consumption should be carefully analysed as in order to make sure that the total water consumption is recorded over the period when a meter was replaced the meter readings must be taken from both (old and new) meters and added together. If this is not possible, this data should be excluded from subsequent analysis.

### Analysing water consumption data

Before and after intervention water consumption should be calculated. Any change in water consumption should be calculated and expressed in absolute values.

Any outliers and / or extremes in water usage (litres/property/day) should be checked for both pre and post intervention. The methodology for determining outliers will be based on the distribution of water usage over the sampled households. If water usage is normally distributed (symmetrical around the mean) the outliers can be taken to be those cases whose water usage falls within the top and bottom 2.5% of usage.

A comparison can be made of water savings from the participating sample of households and those of any control groups. For this an 'estimated' date of intervention is required for the control group so that analysis of 'pre' and 'post' intervention can be made. One suggestion is to use the last day of the month within which the highest percentage of households in the participating sample took part in the initiative.

Once the changes in consumption data have been established, statistical tests should be carried out to determine whether the values are statistically significant before conclusions are drawn.

When reporting the results of water consumption data analysis, it is good practice to report at a minimum (for an initiative involving households);

- mean water consumption before the intervention of the initiative (expressed as litres/property/day),
- mean water consumption after the intervention of the initiative (expressed as litres/property/day),
- change in mean water consumption resulting from the initiative (expressed as litres/property/day, with any calculations involving control groups detailed),
- the number of households included in the final analysis,
- the number of households excluded and why,
- the limits set in order to identify erroneous data and outliers,
- the average time period and range for 'before' readings across the sample,
- the average time period and range for 'after' readings across the sample,
- the 'estimated' date of intervention used for control group if required,
- average household occupancy (where known).

### Possible pitfalls

Water consumption data can only tell you so much - on its own it does not provide any information on the socio economic and behavioural composition of households, nor does it provide information relating to property age, type, geographical location and time of year or season. If water consumption data is collected at appliance level it does not directly provide information about the appliance type, design and nominal water consumption, unless additional information is obtained through household surveys. Water consumption data is unable to tell you how or why a customer is using their water, only how much water is used and when. It is therefore important to consider the benefits of using additional evaluation tools (such as surveys, interviews, water diaries etc.) alongside water consumption data in order gain an understanding of the full picture.

Water consumption data can be influenced by a range of factors, with actual usage being influenced by seasonal variations, extreme weather or other initiatives, and measured

usage sometimes being affected by issues such as leakage. Keeping this in mind, caution must be exercised when considering changes in water consumption data. As outlined above, a comparison or control group can be used to assess the impact of these 'additional' factors, giving a clearer idea of the impact your initiative has had. Supplementary data can also be collected (for example using surveys or water diaries) to help understand how water is being used.

Where individuals know that their water consumption is being monitored for the purposes of evaluating an initiative, simply the act of being monitored may influence their use (and not the initiative itself), and so influencing results. Collecting water consumption data over an extended period of time can help to alleviate this issue, as can having a comparison or control group.

## 4.2 Surveys

With thanks to Gavin Ellison, YouGov for his input into this section.

### What are surveys good for?

Surveys can be used at various points of an initiative to collect a set of standard information from an often large number of people. Surveys can be used before and after an initiative to assess any changes in response across the duration of an initiative, alternatively they can be utilised after an initiative has been completed to collect attitudes to the initiative, or they can be employed during delivery, for example collecting information during a home visit retrofit.

Surveys can be used to collect before-after data on initiative participants only, or additionally with a comparison or control group in order to ascertain that any changes are in fact the result of your water efficiency initiative (see section 4.1 for further explanation of the benefits of using a control group). They can also be used just with initiative participants as a way of collecting statistical information on how participants reacted to the initiative after completion (for example, why did they decide to get involved?; what were the barriers to change?).

Whilst surveys can be limiting in the specific information they provide, with less opportunity than methods such as interviews to obtain the reasoning behind the answers given at the time of the survey, they can still provide an opportunity to gather both qualitative and quantitative data through using a mixture of open and closed questions.

### Different survey approaches

It is possible to conduct surveys via a range of different mediums, all of which have their own strengths and weaknesses summarised below.

**Postal surveys** are relatively cheap to conduct, however a lot of money can be spent on printing and postage. They can also be slow in terms of the length of time it takes to complete the survey cycle and gather data. Conducting a survey in this way requires a mailing list of the desired participant base to be compiled. Specific geographical areas can be easily targeted using postal surveys.

Postal surveys typically achieve low response rates – around 10% on average – resulting in a high level of wastage. However much higher response rates can be achieved when using repeated mailings and reminder postcards, with some initiatives achieving up to 50%. Where only a low response rate is achieved non-response bias (where those people that do not respond to your survey differ from those that do in an important way) can be an issue. Furthermore, with postal surveys there tends to be higher levels of response from older people, therefore they are not an effective way of engaging young people.

A postal survey allows for self-completion at the participant's own pace, giving greater flexibility over when the survey is completed. As there is no pressure of another presence there is less chance of a 'socially desirable' response in terms of their attitudes, past behaviour or capabilities. However, there is no definite way of knowing who completed the survey and whether the answers are fully accurate. Further to this, questions are commonly missed out [4] which can cause complications in the data set.



[4] Powell, E. and Herman, C. (2010). Collecting Evaluation Data: Surveys. University of Wisconsin – Extension.

**On-line surveys** are become increasingly popular with the rise of households owning a computer, and subsequently using the internet. This approach can be very quick and highly cost effective. With internet usage increasing (now over 80%), on-line surveys are an effective method for engaging a range of people, particularly young people, however they can be less representative for older people and those on lower incomes (unless quota sampling is applied). These types of surveys can be distributed through email customer databases or via on-line panels. The current levels of coverage for on-line panels means that it may be difficult to get sufficient sample size within a specific study area, but coverage is increasing rapidly.

Sending an on-line survey link to an email customer database can get a varying response rate, typically between 5-20%. Like postal surveys, there is a degree of flexibility for the participant over when the survey is completed and at what pace. There is also a level of anonymity which helps to reduce the pressure to give 'socially desirable' responses in terms of their attitudes, past behaviour or capabilities. Sending an on-line survey via a customer database can be relatively inexpensive, as most costs are fixed therefore the number of responses are irrelevant.

An alternative on-line method for surveys is to target well managed and engaged panels or communities, which tends to result in a higher response rate of around 40 – 60%. This is the approach often taken by large survey companies. Using panels is more expensive than using an existing database of customers, but significantly less than postal, telephone and face-to-face. This will not be applicable for surveying specific initiative participants but could be useful for establishing baseline data.

Similarly to postal surveys, on-line surveys can also result in missing data. Often, participants deliberately miss out questions due to being unsure what to answer or not fully understanding the question. This highlights the importance of ensuring that the survey is piloted to minimise errors. On-line questionnaire design tools do allow selected questions to be made mandatory; therefore the respondent would not be able to miss questions out, however this should be used with caution as it runs the risk of the survey not being completed at all.

**Telephone surveys** offer an opportunity to obtain instant answers to the survey. Directly talking to the participant allows for more control to ensure the survey is fullycomplete [5.] and may even allow for unforeseen qualitative data to come through. Telephone surveys can be poor at including young people, working professionals and those without a landline, a percentage that is steadily rising. There can be problems with non response bias, as those not answering the survey may well be significantly different from those answering it. Telephone surveys typically have a low response rate of 10%.

Telephone surveys can lead to 'satisfacting' this is when a respondent gives the first answer they hear without waiting for the options - a particular problem when surveying busy households. There can be some issues with 'honesty' and providing socially desirable answers because the presence of an interviewer reduces the social distance making reporting of sensitive data more threatening. As a result of the resources required, telephone surveys are one of the more expensive survey approaches, though, less so than face-to-face.

**Face-to-face surveys** are a widely used method due to the quality of results that can be gained.  High response rates can be achieved using face-to-face surveys dependent on the number of visits the interviewer makes. However, they are labour intensive and obtaining results can take a long time compared to other methods. There has been a trend of the response rates falling consistently over the last ten years. If only conducting surveys during working hours, then this approach can be poor at including working professionals and young people.

Face-to-face surveys can suffer from interviewer error and satisfacting. In the same way as telephone surveys there can be issues with 'honesty' because of the presence of an interviewer leading to socially desirable answers.. Using a face-to-face is a very expensive and person intensive survey method.

### Timing – when to use a survey

If using a survey as part of your evaluation activities, the timing is dependant upon the purpose. For example, if a survey is being used to gather information in order to set a baseline, then it must have been completed prior to the start of the initiative – even just an awareness of an upcoming initiative could have an affect upon participants' answers and therefore not give a true baseline. If a survey is being used to assess change after an initiative, or after specific elements of an initiative, it is important to decide what length of interval to leave – answers may be very different one week after an initiative intervention compared to three months after. Alternatively timing may be decided by delivery of certain elements, a questionnaire to be completed by a resident during a home visit retrofit would not sensibly be conducted at any other time than during the home visit.

### Sample size and selection

There are a number of factors that will affect the size and selection of the sample of people you wish to survey. For smaller initiatives it may be that the entire target audience can be surveyed (although particularly small sample sizes will limit the statistical tests appropriate for use), while larger initiatives will need to survey only a portion of their audience. A larger sample size provides more opportunities for in-depth analysis and an increased certainty in the results.

The certainty of answering has an influence on the sample size needed. There is an 'indicative margin of error' which can be used to help decision making. For example, a 1000



[5.] Powell, E and Herman, C. (2010) Collecting Evaluation Data: Surveys. University of Wisconsin – Extension

person survey delivers +/-3% margin of error at the 95% confidence level. This means if 50% of people answered a question in a particular way we could be 95% certain that if the entire population answered the result it would be between 47% - 53%. If the answer is more definitive, 10% or 90%, then the margin of error is smaller.

The requirements for sub group analysis also play a role in determining sample size. In addition to analysing the results as a whole there can be a focus on regions, ethnicity, or age groups for example. This might require a higher overall sample size to ensure that there are enough responses from each sub group for multi-variate analysis. At the analysis stage you can test for statistically significant differences between sub groups or between a sub group and the total sample. Sometimes the need for significant samples of sub groups can be met by 'boosting' the number of responses artificially higher than would be representative. This allows the sub group analysis to be more robust than if the sample was left to fall out naturally.

Where initiatives are being used to inform large scale water company strategy or to feed into policy debates, there is a need for the initiative population to be representative. In these cases, quota sampling and weighting schemes can be used to ensure that the final pool of respondents is a representative match for the total population. The Office for National Statistics (ONS) and Census statistics can be used to provide the population breakdown, depending on the nature of the survey or the subject matter, a decision can be made about which demographics need to be controlled for. These can include: age, gender, social grade, regions, urban/ rural splits, ethnicity, housing, tenure, marital status etc. It is advisable to consult with statistical experts within your organisation or refer to standard statistical textbooks when defining the sample target and size required for your specific initiative.

Incentives to take part can often help to increase the sample size. In panel or communities based research, members often receive a number of points or a small cash value for taking part. More widely, entry into a prize draw other similar incentive can be offered, although it is important to consider the appeal of any incentive offered.

## Analysing survey data

Surveys can be analysed using a variety of methods, varying as a result of the type of question used within the survey (open or closed) and the level of analysis required for your evaluation.

A standard survey dataset is presented with one row per response and a column for each question. Datasets can be analysed in Excel, or there are more advanced packages such as SPSS and SAS which make analysis easier and allow for more complex investigation.

The most simple method of presenting survey results is as percentages and frequencies (see example opposite), and it is good practice to include this information somewhere within your evaluation or project report even if you go on to conduct more complex analysis.

Open questions result in qualitative data, and so the analysis will be explorative. Answers can be explored thematically and discussed within your write-up. Alternatively you may simply want to count how often certain themes or elements are mentioned by participants, this can be presented numerically or visually in a 'word cloud', an image of words or themes most commonly used, with a larger sized font dependent on the frequency of the word.

## Possible Pitfalls

The type of survey approach used can impact upon the response rate as well as the type of people who are likely to respond. For example, on-line surveys are good for targeting younger groups whereas postal surveys will be more successful for older groups. It is also important to be aware of the possible influence of non-response bias, where those people that do not respond to your survey differ from those that do in an important way.

You should also consider the sensitivity of the subject matter – face-to-face and telephone surveys are administered by an interviewer, whilst postal and on-line surveys are self-completion. When an interviewer is present, respondents are more likely to respond with what they feel they are 'supposed' to say (the socially desirable response [6].) or to exaggerate their financial circumstances and capabilities. Examples of subjects where social desirability may have an impact include: willingness to pay for a social tariff, staying within the laws of a hosepipe ban or taking steps to become more water efficient, all of which will elicit a higher level of socially positive responses through telephone and face-to-face methods than through online or postal. In terms of financial capability or other personally sensitive issues, respondents tend to exaggerate their circumstances for an interviewer. This might apply to research on indebtedness or their experiences of living with a disability for example.

You may find that for the survey approaches that do not require a researcher to be present result in not all questions being fully answered, leaving holes in your dataset that may impact on the analysis that can be carried out.



6. Duffy et al. (2005) Comparing data from online and face-to-face surveys, International Journal of Market Research 47(6), pp. 615-639

| How much water do you think you personally use on an average day? (Tick one box only) | | |
|---|---|---|
| Frequency | | Percentage |
| Under 50 litres (under 88 pints) | 176 | 24.8 |
| 50 to 100 litres (88 to 175 pints) | 104 | 14.6 |
| 100 to 150 litres (175 to 265 pints) | 18 | 2.5 |
| 150 to 200 litres (265 to 350 pints) | 8 | 1.1 |
| Over 200 litres (over 350 pints) | 6 | 0.8 |
| Don't know | 398 | 56.1 |
| Base | 710 | |

## 4.3 Focus Groups

With thanks to Kathryn Rathouse, KR Social Research, and Ewan King, OPM, for their input into this section.

### What are focus groups good for?

Focus groups, like interviews, are useful for exploring peoples' attitudes, feelings, beliefs, experiences and reactions to a topic in significant depth. Unlike surveys which tend to ask rigid 'fixed choice' questions to generate quantitative data, focus groups and interviews can enable the exploration of topics in some detail to get underneath the issues and feelings that drive what people think. The advantage of focus groups over interviews is that they can encourage interaction between participants, which can lead them to re-evaluate and reconsider their own understandings of their specific experience. They also provide a dynamic context in which discussion can lead to the generation of new ideas and insights. In evaluating water efficiency initiatives, focus groups can help the researcher explore why people feel the way they feel, what inhibits and facilitates their involvement in the initiative and what could make the initiative work better from their perspective.

### Timing – when to use focus groups

Focus groups can be used at all times of an initiative as there are a number of points within any evaluation that focus groups can add value. They can be used before an initiative to understand whether there is value to the initiative/project and move towards understanding exactly what the initiative should look like. They can also provide useful information during an initiative to understand how delivery is going and what improvements, if any, should be made. After the initiative, focus groups can evaluate how effective the initiative was and move to develop a plan for what could be changed next time.

### Sample Size and Selection

When conducting focus groups you are aiming to hear the full range of views and experiences, so the number of groups depends how varied the audience is. Therefore if it is practical, it may make sense to hold focus groups in small batches until it is felt 'saturation' has been reached and you are not hearing anything new. Within the focus groups about 6 – 8 people should be involved at a time (any more than 8 makes it difficult to hear from everyone and they can get frustrated).

The recruitment process must be proactive in order to get a good mix of people, it should not just be an open invite. Before recruitment begins, it is important to set quotas to ensure that you hear from all types of people who are likely to have a different response to the initiative. This might mean hearing from, for instance, people of different ages; singles, couples and families; people who did and did not take part in the initiative; and people who responded well or less well to the initiative.

### Running focus groups

Focus groups should be held in a central location to the participants and must be easy to get to. The transport links should be easily accessible, or there should be an option for transport being provided for participants so as not to prevent anyone coming if they have an interest to do so. The venue needs to be comfortable for people, with refreshments throughout the focus group. To ensure that you do not only hear from people with strong views, attendance should be incentivised. This is usually done by providing cash on the day, typical an incentive would be £30 or £40 for 90 – 120 minutes.

The facilitator needs to have the skills to manage group processes, keeping the session focused, and to ensure everyone participates and gets a chance to speak. The facilitator also needs to be skilled at asking questions and encouraging participants to express their views fully and openly. It is important that the facilitator states that they want to hear the views of the participants.

It is fine to have observers when carrying out a focus group (it is common for water companies or other interested parties to want to be present). There should ideally be only one observer in the room. They should be seated somewhere the participants will not notice them too much. The facilitator should introduce the observer at the beginning and explain that the observer's role is to listen, rather than taking questions during the focus group. Ideally allow some time at the end of the focus groups for the participants to ask the observer any questions they have and vice versa.

It is important that the focus group should be recorded and transcribed as details can be missed. The transcription can then be thematically analysed to draw out areas of particular importance and interest. The participants should be made aware that the session will be recorded at the start. Provided that the purpose of recording is explained clearly and participants are assured that what they say is confidential, they almost always consent. There could also be a note taker at the session.

It is important to have a tactical structure towards the questions asked. Initially an around the table introductory session should begin, this is then followed by the first few 'easy' or non-sensitive questions, following this the questions can then begin to delve deeper. There should be time allowed at the end to finish on a positive note and for open questions to be asked. There is not necessarily a need to follow an order of the questions to be asked, the questions can be based on what they have said.

### Analysing focus groups

Analysing focus groups involves organising what you have heard and interpreting it, often considering what has been said under different themes. This can be through analysing the transcript from the focus groups to see how responses to the questions differed across the focus groups and to understand why this pattern arose. Quotes can be taken to exemplify points. It is important to remember that focus groups provide details not numbers.

When reporting focus group findings, as well as detailing the results, it is also useful to include particulars of how the focus groups were carried out. For example, how many focus groups were conducted, when the focus groups were conducted, how many participants were included in total, if a strategy was employed to ensure different types of people were involved and so on.

### Possible Pitfalls

Focus groups are not as good as in-depth interviews at providing details about individuals e.g. their decision making process, water use over a big period of time and how it has changed (their own journey/ story), and so must be used in the right context. Focus groups are not always practical - this can be where there are not enough people of a certain type in a certain area to participate e.g. non-metered to get a good sample. The focus groups might not provide the right sort of information, a lot depends on the facilitator to keep the focus of the group and draw out the right sort of information, instead of the focus group going off on a tangent. Group dynamics can also hinder a focus group e.g. where people know about each other or if you are talking about a sensitive issue.

## 4.4 Interviews

### Interviews – what are they good for?

Interviews are ideal for when you plan to collect information that is very individual, such as understanding the history of a behaviour or examining in detail thoughts and feelings around a particular issue. They can be used alone, or can be a valuable method to build on information that might have been acquired from a survey - providing rich information about attitudes, opinions and experiences[7.], rather than simply yes or no answers.

Interviews are a particularly useful tool for evaluating the views of project partners or key stakeholders, where in depth and often sensitive issues need to be assessed. They are also good for formative evaluation where insights can be used to inform and guide the development of an initiative.

### Timing – when to use interviews

For understanding the impact of an initiative, interviews are best used at the end of a project, in order to allow reflection to take place following completion[8.]. It can be useful to explore what people remember and how they remember it after a project has finished[9.]. However interviews can also be used during the project or at the point of key decisions to influence project implementation or evaluate performance at specific milestones.

Timing in its broadest sense should be considered and noted when conducting interviews as external factors can have an influence upon results. These external factors can be seasonal or discrete, for example the Easter holidays or if there is a temporary use ban in place during the interview, or if there have been high-profile news stories on water such as price increases. These and other factors such as changes in weather should be recorded in the interview notes.

Where possible unusual external factors should be avoided (if they can be foreseen), for instance interviews should not normally be conducted in the run-up to Christmas. Due to the potential impact interviews should have a clear timestamp. Also the effect of interviewing people a week or month apart should be taken into account when assessing and analysing interviews due to the potential effects of external variables (including changes in the weather).

### Different interview approaches

Interviews can be conducted over the telephone or face-to-face. Telephone interviews are often relatively short, as there is a fine balance between getting the information needed and ensuring people do not feel imposed upon[10], although conducting telephone interviews may be more convenient as they alleviate the need for the involved parties to travel.

In the same vein as focus groups, if conducting face-to-face interviews these should be held at a location and time that is convenient for the participants, often this will be in their own home or workplace. It can be useful to ask participants to prepare in advance of the interview, ensuring they are prepped to discuss the topic - this could be through conducting a short survey beforehand.

### Interview Structure

The structure of an interview is dependent upon what it already known, for example other evaluation tools may have previously highlighted interesting points that the interviewer wishes to specifically discuss. A structured interview will have a set list of questions that is to be used with all interviewees, a semi-structured interview also has a list of questions but allows for flexibility

[7.& 11.] HM Treasury (2011). The Magenta Book Guidance for Evaluation.

[8. 9. & 10.] UCL (2010). Evaluation Methods for Public Engagement Projects

to probe further should an interesting topic crop up, while an unstructured interview is one that has no set list of questions [11]. A semi-structured approach may be best when used in the context of water efficiency initiatives, ensuring certain topics are covered within the interview but not preventing the interviewer delving deeper should interesting information arise, this may be particularly useful in formative evaluation.

### Recording and transcription

Recording and transcription are often expensive, however they are essential to ensure maximum value is derived from the interviews and bias is reduced. The interview should be recorded electronically to ensure a perfect record of the questions and answers.

### Sample size and selection

Recruitment for interviews should aim to be as unbiased and representative as possible, unless you are specifically interviewing project partners and stakeholders. This means that different approaches to conducting interviews may be required so that they are effective in engaging a diverse audience (for example face-to-face interviews, if only conducted during work hours, are unlikely to engage professionals).

Sample sizes for interviews are normally constrained by cost, but the sample size must reflect the diversity of the initiative community and be appropriate to the scale and aims of the initiative. If this is not possible then the potential impact of sample size constraints should be discussed and noted so that any potential bias can be taken into account during analysis of the results.

Sample size and selection may be an issue in areas where there are wide socio-demographic and cultural differences as these may also reflect large differences in water use patterns and consumption. Often this issue may also be further complicated by language barriers. Therefore the project should consider how interviews will be structured to cover socio-demographic and cultural diversity and this may include the need for translation services. If cost or time constraints prevent this approach then this should be taken into account in any subsequent analysis, to prevent bias from influencing initiative outcomes that are then extrapolated to a wider customer base.

### Analysing interviews

The recorded interviews should be transcribed using a set format or template for all interviews. These transcriptions can then be individually assessed and/or mapped onto a summary table or an analysis of key words / themes and findings. During transcription and analysis pertinent quotes can be identified that encapsulate specific aspects of the project or commonalities or points of difference within the interviews.

Similarly to focus groups, when reporting interview findings, as well as detailing the results, it is also useful to include particulars of how the interviews were carried out. For example, how many interviews were conducted, when the interviews were conducted, any external factors that should be taken into account (e.g. temporary use ban, unusual weather conditions), if a strategy was employed to ensure different types of people were interviewed and so on.

### Possible Pitfalls

Interviews are very resource intensive and therefore expensive. In a situation where budget restricts the number of interviews to the point where a full range of views have not been heard, it may be better to consider an alternative evaluation tool. The interview approach may engage or exclude certain groups, with face-to-face and telephone interviews being more or less effective with different audiences. It is important to take into account the impact of external factors, particularly where interviews are carried out over a number of weeks, it is possible that changes in the weather of a high-profile news story may impact upon results.

## 4.5 Water diaries

With thanks to Edward Langley, Ipsos MORI, for his input into this section.

### Water diaries – what are they good for?

A water diary can be used to collect both qualitative and quantitative information. In their simplest form they can be used by participants to record the frequency of various activities, such as showering or using the washing machine. They can however also provide powerful stories or narratives of certain activities [12.], being a useful and insightful method to obtain rich qualitative and quantitative data over time. Diaries are an effective tool for evaluating the impacts of the initiative; they focus on individual and personal development and change. They provide an opportunity for the respondent to reflect upon the initiative in which they are keeping the diary for, and can encourage participants to think about their water use more deeply and the opportunities and barriers to change.

### Timing – when to use a water diary

The point at which a diary is used will depend upon the purpose. In terms of evaluating the impact of an initiative intervention, a water diary will ideally be administered before the intervention and run for a time period covering the intervention itself, continuing afterwards in order to capture any changes. It is important not to ask participants to complete a water diary for too long a period of time as interest in doing so may well drop off.

### Different diary approaches

Diaries can be kept in a range of formats, with paper or on-line approaches the most frequently used. In a similar manner to surveys, different formats will appeal to different types of people and it is important to be aware that an on-line water diary may exclude those who do not have access to, or are not adept at using, the internet. Where using on-line water diaries it is a good idea to provide participants with a paper form they can print off and fill in as they go, transferring their responses to the on-line diary once a day.

### Topics to cover with a water diary

The level of structure within the diary can vary through using open, closed or a mixture of open and closed questions. Closed questions could be in the format of a tick box in a grid, the participant might fill in the grid on a daily basis. A more open, unstructured water diary allows the respondents to write their reflections about the initiative in their own words. A mix of methods can also be used to gather both quantitative and qualitative data. The amount of time and effort required from participants needs to be established through guidelines making the requirements clear.

The purpose of a water diary in this context would likely be to understand individual water consumption and to establish if there is a change in use as a result of the initiative's intervention. Questions that could be included within the diary would enquire about day-to-day activities, recording the frequency and manner of certain behaviours i.e. was the washing machine used? Was it a full load? While reflective, more open elements of the diary could examine the participants' thoughts and attitudes towards water efficiency, covering key topics such as whether they are finding it easy to become more water efficient, have they taken water efficient behaviours beyond the home, did they notice anything water related in the news? For this a once weekly reflective section could be filled in. The process of filling in a personal log should not be too onerous and time consuming on the participants (to increase responses and consistency).



12. UCL (2010). Evaluation Methods for Public Engagement Projects

## Sample size and selection

Participants completing the water diary will need to be taking part in the initiative, or be in the comparison group - recruiting participants could be aided with background information, especially if specific user groups are to be targeted i.e. metered and non metered to examine any difference between the two user groups. The number of participants needed will depend upon the type of data being collected; in the case of qualitative data it is important to ensure that you have covered the full range of views, whilst with quantitative data sample size will be influenced by the need to conduct statistical tests.

## Analysing water diaries

The method of analysis is dependent on the medium through which the diary is distributed, as well as the types of questions used within the diary. For diaries that are based in a paper or electronic word document format, the analysis involves analysing the written text, drawing out themes and using quotes to exemplify points. Tick box answers, and those that are focussed more upon frequencies (the closed questions) can be input directly into a database such as Excel or SPSS for further analysis.

When reporting findings from water diaries, it is useful include details of how the water diaries were conducted. For example, how many individuals or households completed diaries, how many individuals or households dropped out during the process, criteria set for exclusion if relevant (e.g. because of missing data), for what period of time were they asked to complete the diary (including how long before and after the initiative intervention if appropriate) and any external factors that should be taken into account (e.g. temporary use ban, unusual weather conditions).

## Possible Pitfalls

The amount of data can vary from each participant, as well as the regularity of data being input. Some participants may provide too much data, whereas others may provide very little. This might create difficulties when drawing direct comparisons between the participants. It is also important to keep in mind that certain approaches to water diaries may be more or less accessible to different groups, affecting who you will hear from. A further consideration is that the act of completing a diary may in itself have an impact upon participants, for example because they are recording their washing behaviour every day they are likely to be thinking about it more than usual and so this may influence what they think and do in this area.

# 5. Reporting

Reporting your evaluation findings is a crucial step in ensuring that not only are the achievements of an initiative recognised and recorded, but also that any learnings can be documented and carried forward for future initiatives.

As well as the final results of your activities it is important to include the background to your evaluation. You may wish to include the finer details within appendices rather than the main body of a document, however even here they act as an important reference tool for readers to understand the work undertaken and even to replicate elements if wished. The methodology used to evaluate your initiative needs to be described, including key points such as:

- aims and objectives,
- a description of the evaluation tools used (including relevant materials used such as questionnaires or focus group topic guides),
- recruitment and sampling strategy where relevant,
- approach to analysis.

As well as providing headline results, it is also good practice to include 'full' results where relevant as well as details relating to the quality of the data you gathered. Examples of what this may include are given within each evaluation tool section. Depending on the tools used this can include:

- response rates,
- drop put rates,
- frequency tables.

The level of detail you wish to report may well differ internally and externally, however it is important to consider that future readers (both internal and external) may be coming to any report with little or no background knowledge of the initiative so including a reasonable level of detail in accessible non-technical language is always advised.

# 6. Further Reading

To find out more about evaluation, the following are useful sources of information:

- The Magenta Book Guidance for Evaluation. HM Treasury.
  Available at: http://www.hm-treasury.gov.uk/magentabook
- Evaluation Methods for Public Engagement Projects. UCL.
  Available at: http://www.ucl.ac.uk/public-engagement/evaluation/toolkits/methods

For specific examples of how the evaluation techniques described in this guide can be applied to water efficiency initiatives, see the two accompanying documents:

- Evaluating Water Efficiency Retrofit Projects: An Example
- Evaluating Water Efficiency Education Activities in Schools: An Example

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