

# Understanding water usage in the garden

Final debrief  
November 2021



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# Objectives and methodology



5 companies funded this research:



**Key objectives:**

**Observe, through ethnographic filming, garden water usage behaviour – exploring:**

- Everyday garden behaviours, such as plant-watering and hot tub use
- Hot weather garden behaviours (times of peak water demand), such as paddling pool use or water fights – specifically exploring why demand rises in these periods
- How usage varies across households

**Assess dissonance between recalled and actual (filmed) behaviour**

**Provide insight to support communications and behaviour change activities about “good” or “bad” garden water usage**

**Explore whether garden water usage is thought to have changed as a result of the COVID-19 pandemic**

## Methodology

We recruited 15 households to take part in our research

For each household we conducted the following :

- **Initial online interview** to get to know participants and ensure cameras were set up
- **6-week garden observation period** using motion sensitive cameras
- **Water logger task** at week 4 asking participants to carry out a typical garden water behaviour and record logger before and after
- **Short questionnaire** at week 4
- **Follow up online interview** to understand recall vs. actual behaviour

## Sample

**Specification overview**

- Mix of household composition and life stage
- Mix of Socioeconomic grade
- Mix of working status
- Mix of home-owners and renters
- 3 households per water company area
- Mix of urban and rural locations
- All to have a garden with outdoor tap
- Moderate-heavy water users



## Customer context

# A note on weather

Over the 6 week period over mid-August-September we saw some **dry, warm but overcast weather**, with limited prolonged periods of sunshine



**According to the Met Office, September 2021 was the second warmest on record for the UK\***

## However...

...most recall experiencing a **'bad summer'**. The main association with summer days is hot, dry and sunny weather spent outdoors

Though this doesn't happen regularly in the UK it is still the main frame of reference for 'summer'

*"The past 6 weeks haven't been very summery – weather has been colder and greyer."*

*"I feel like the summer has been a bit uneven in terms of dryness."*

**Dry, warm weather ≠ summer weather**

# Customers consider themselves lucky to have their own private outdoor space

## Gardens are very much considered a privilege

- People take as much pride in their gardens as they do their homes
- Even those who aren't keen gardeners will make an effort to create a nice outside space for them and their family to use

## Generally, activities involving the garden are considered 'wholesome'

- Being outdoors is good for your health, physically and mentally, and many associate the garden with these benefits
- The garden is believed to be a good space for nurturing your mental wellbeing
- This in turn affects perceptions of water usage in the garden, which we'll see later in this report


*"We like to relax in the garden and read and chat to people. Now that we've retired we want to have this space for some peace and somewhere to do nothing."*


*"The garden has been essential to our happiness, especially during COVID. I love the wildlife that comes in."*

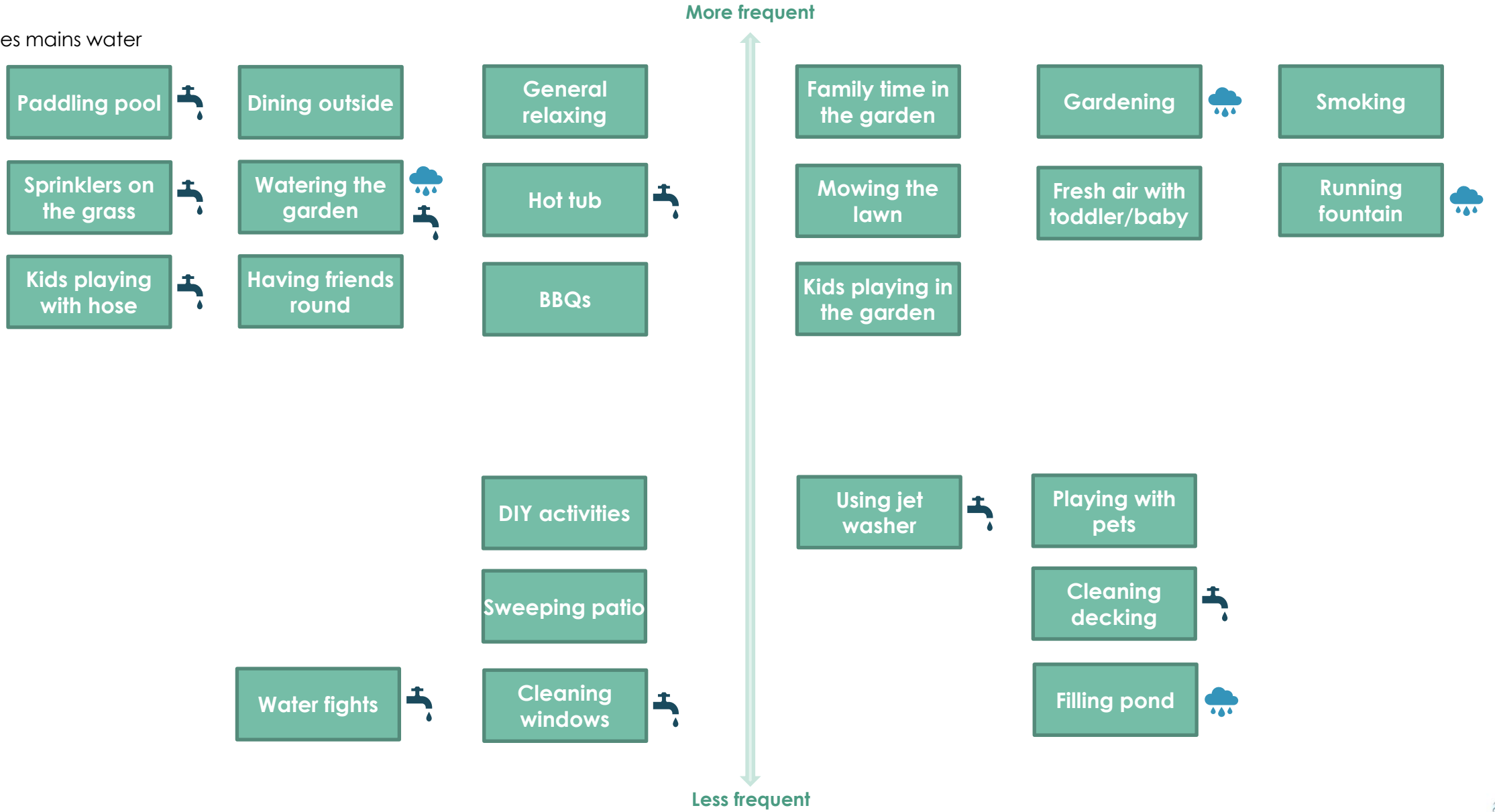
Especially true in light of COVID... emphasis on taking care of **mental health** during this period has resonated and time in the garden is considered beneficial for **relaxation, reflection** and **stress relief**




# People claim to do many activities in the garden during the summertime

 = uses natural water

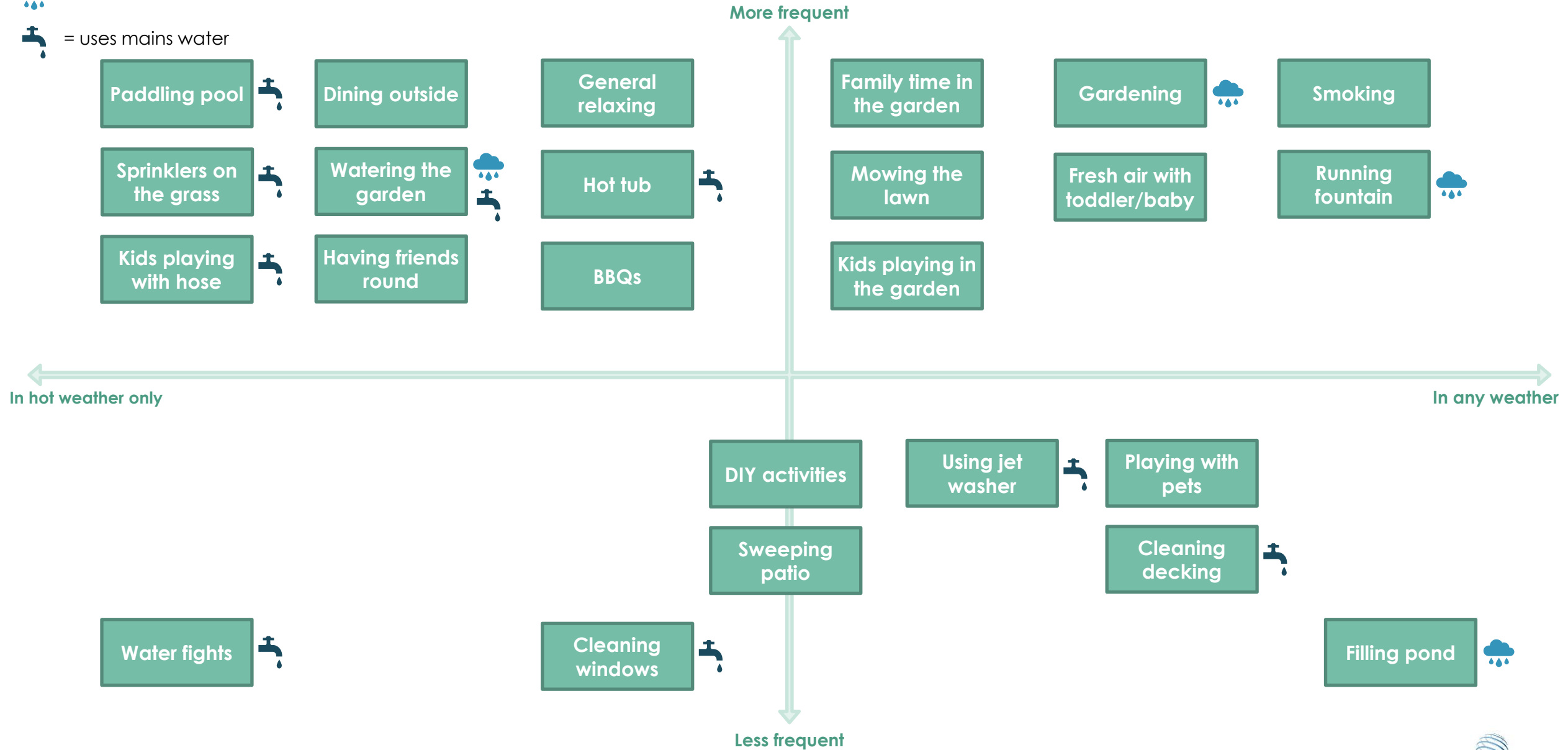
 = uses mains water



# But in reality, the weather dictates whether or not they actually do it

 = uses natural water

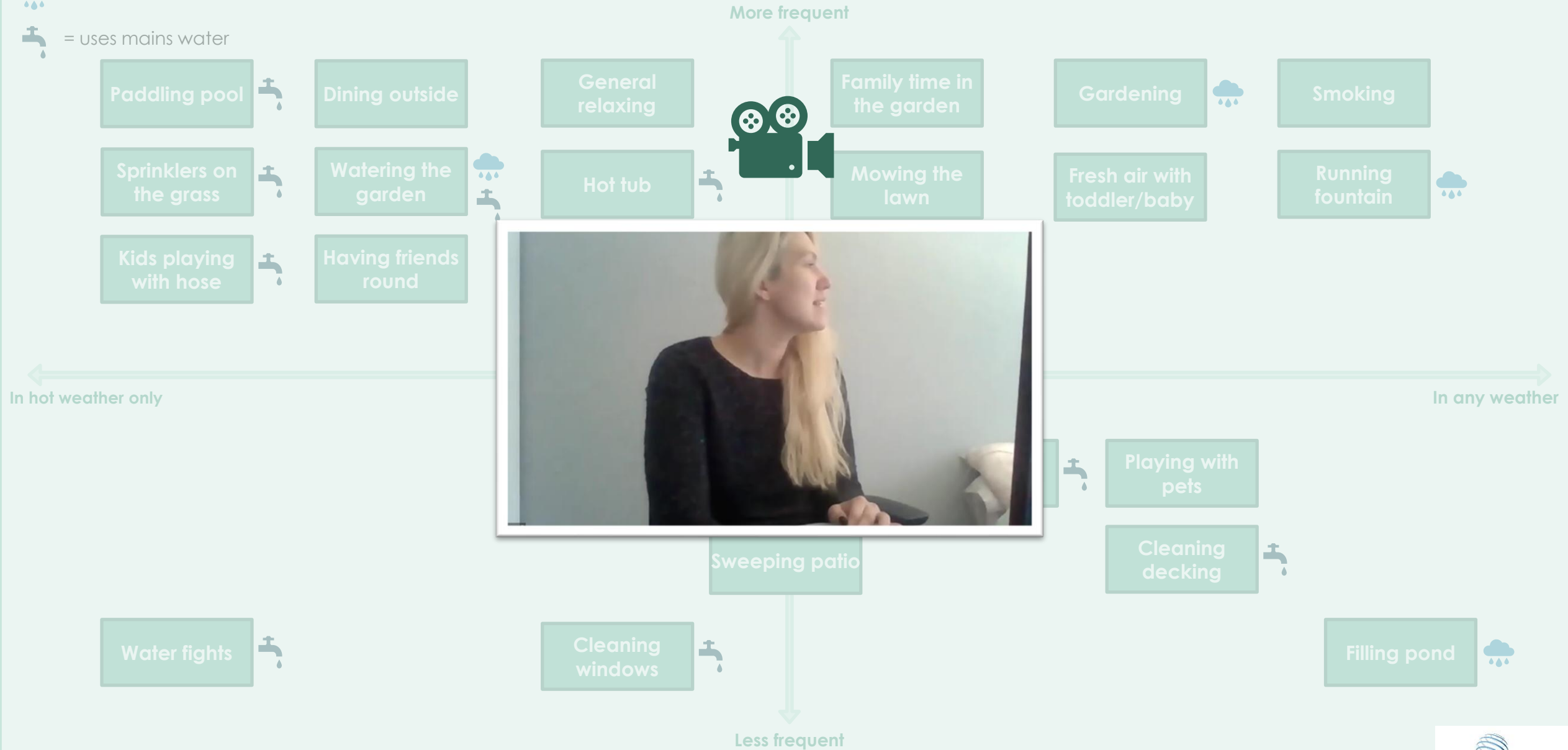
 = uses mains water



# But in reality, the weather dictates whether or not they actually do it

 = uses natural water

 = uses mains water



# Some behaviours we observed...

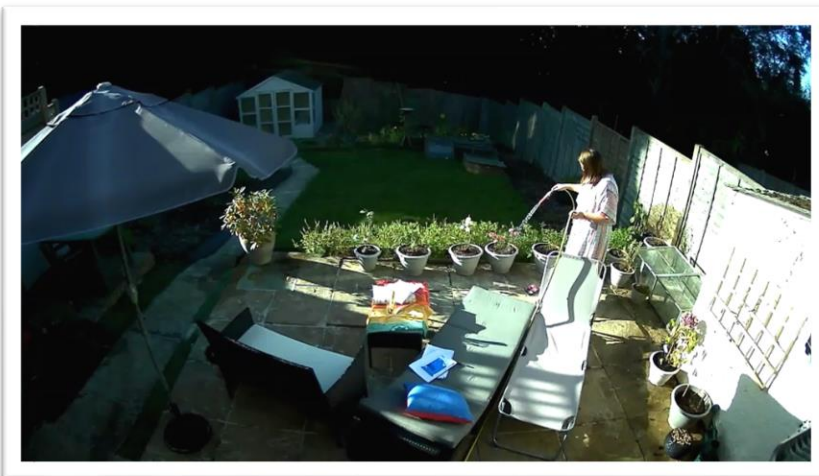
**Cleaning...**



**Watering with bucket/can/vessel**



**Watering plants with hose**



**Soaking lawn or flowerbeds**



# Associations with using water in the garden lean towards 'wholesome' activity

Associations with using water in the garden tie in broader associations with spending time in the garden more generally:



If the water doesn't disappear down a plughole, e.g. it's used for feeding plants and sinks into soil, it's not considered 'wasted'

*"Bees love my garden, so I water for the bees!"*



**Water from the outside tap seems to hold a different value to water indoors**

**Tending to your garden is deemed an important and worthwhile use of water, especially when linked to nurturing plants/nature**

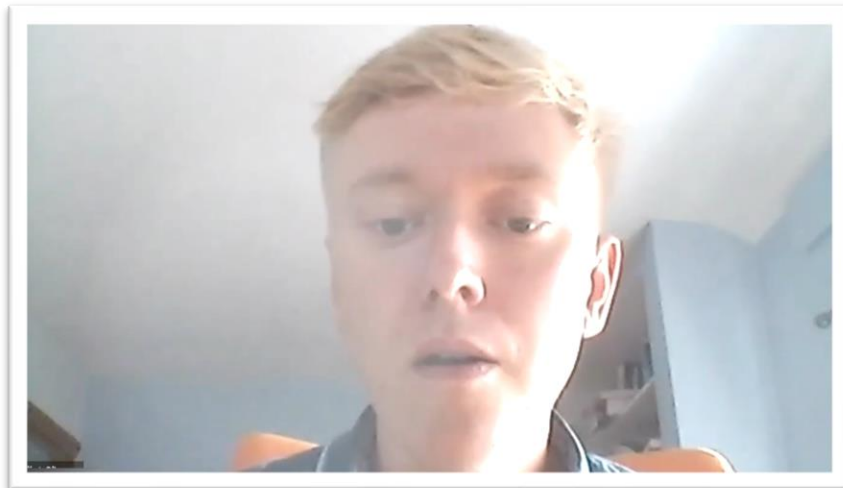
**Subconsciously water from the outside tap is considered less precious, perhaps as it isn't seen directly as drinking water**

*It's worth noting that in many households, there is often one 'lead' gardener who did most activities in the garden e.g. watering plants or cleaning decking*

# Behaviour changes due to COVID-19 are relatively minimal

For those who are key workers, **COVID hasn't had a huge impact** on routine

Older, retired couples are in a similar position. But though they're still using their gardens for personal use, they have **had fewer people round** to visit – friends, family, grandkids – as they're remaining cautious



For others, having the garden available when they were stuck at home and unable to socialise was **invaluable**

Most developed an **appreciation** for their garden over the 18-month period and felt they were spending much more time there than they were before

But now that things are opening up again, schools are back and many are going back to the office, there is **less time to use the garden** than before



Among our participants who garden, all told us that they **garden now a similar amount to pre-pandemic**, suggesting that current garden water usage patterns ought to be similar to pre-pandemic behaviours



# Environmental context

# Based on reported behaviour we see a spectrum of environmental consciousness

All of our participants are environmentally conscious to some extent, but we've identified 3 typologies to demonstrate some of the differences

## Busy Basics

- These represent the bulk of our sample
- They do **basic day to day environmental actions** such as recycling their waste packaging
- But they have **busy lives** and are juggling lots of other things; **being environmental is not top of mind** and it ends up low on the priority list

## Waste Warriors

- These are consumers who have been brought up to **not be wasteful** often from a young age
- This stretches across a variety of things in the home, from food to electricity to water
- Often, their **behaviour is linked to frugality** and saving money

## Eco Enthusiasts

- For these people, being environmentally friendly is a **high priority**
- It is important that they feel they are doing their bit in their day to day lives to help the bigger cause
- They work hard to **shape their behaviours** to do things that are better for the environment

Least environmentally conscious

Most environmentally conscious



# Each typology will focus on different environmental actions

Whilst the busy basics are less strict on fulfilling these actions, Eco Enthusiasts and Waste Warriors try hard to ensure they follow them



# Water usage isn't generally considered an important environmental concern

Across all typologies, most don't often think about their water usage and put it to the back of their minds

Busy Basics

Waste Warriors

Eco Enthusiasts

The need to preserve water is not totally unfamiliar territory

But people are generally **unaware that water stress is an urgent problem** and feel they haven't been educated on the topic

When confronted with the issue, for many **it doesn't add up** – how can we face water shortages when it rains so often?

*“Subconsciously you hear it in the media about water shortage and drought, it's in your mind etc. But when you think about how much rain we get - contradicts itself a lot... it's just not a major concern.”*



Eco Enthusiasts

For a few Eco Enthusiasts, the issue is somewhat on their radar, but they consider **other environmental issues** to be **more pressing**

Libby

## Busy Basic



### Introduction:

- Libby lives in Farnborough with her husband and baby
- She loves the outdoors and likes to take her baby out for fresh air in the garden every day

### Environmental consciousness:

- When it comes to the environment, Libby deals with household recycling but doesn't do much else
- She's aware that water shortages happen but doesn't really worry as it is always raining in England!
- She has considered getting a water butt as her mum has one but with everything going on it's just not at the top of the priority list

*"I can see the value of a water butt, I do want to do it... it's on the agenda amongst a million other things."*

Florence

## Waste Warrior



### Introduction:

- Florence lives on the outskirts of London with her 4 kids
- Her household is busy with everyone running around doing various activities

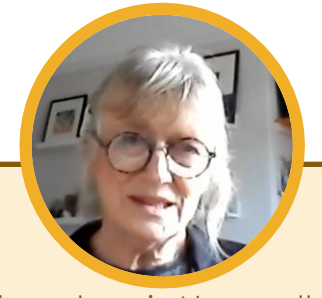
### Environmental consciousness:

- Florence partakes in many eco-friendly actions, from reusing clothes and avoiding using the car, to making sure that things aren't wasted – from food, to clothes, to energy to water
- The motivation for doing these things is largely cost-driven. She is the sole wage-earner in a busy household, so it's important that they're careful with resources and don't waste anything

*"I think about water every day – I pay for it and I'm the only one working and paying the bills."*

Val

## Eco Enthusiast



### Introduction:

- Val is an artist who lives alone in Newcastle
- She loves her garden and is passionate about the space where she grows many plants, flowers and vegetables

### Environmental consciousness:

- Val is conscious of her impact on the environment and tries to her bit – she eats plant-based as much as possible, she composts her food waste, she shops with reusable bags and is never wasteful
- When it comes to water, she doesn't water her lawn as it seems excessive
- However, she does like to keep her garden and veg watered as they are important to her and she considers them to be worth the water use

*"I use my garden a lot more than a lot of people, I grow veg. A lot of people don't use their gardens much. But they waste a lot of water washing their cars for example."*

# Water companies will face some challenges when educating people

Not only do people need to be educated on depleted water resources but there is work to be done to **reframe the dialogue around water use** to ensure that it is valued

**Waste Warriors** are most likely to observe water saving behaviours as they like to avoid any kind of waste

But for **Busy Basics** and even some **Eco Enthusiasts**, there is room to educate on why we need to preserve water and how best to do it

*“Everyone is aware of climate change and the environment, and it’s constantly there...feels like the small changes won’t make a difference. I hope [water] is not just another one added to the list.”*

## Numerous factors make educating the public on this topic challenging:

People are **sick of being berated** for their behaviours

Don’t want water to be **another one on the list** of things they need to worry about

People feel they’re **constantly being told to use less** of everything and it can feel tiresome

**People seek more positivity** – praise for good behaviour, support, education and help to make changes

A young girl with blonde hair, wearing a black and white patterned swimsuit, is running barefoot through a sprinkler in a lush green backyard. She is smiling and looking to her left. The background features a wooden fence and a dense line of trees under a bright sky. A green garden hose is connected to the sprinkler head on the grass.

# Key differences in recalled vs. actual behaviour

# There is a difference between how people envisage summer and the reality

## Visions of summer

Prolonged period of sunny, hot weather

Gardening and regular watering  
(multiple times a week and every day when especially hot)

Quality time with family outside

Sitting out and relaxing, reading books, having drinks etc.

Having friends round for meals, BBQs or social occasions

- Filling the paddling pool regularly for the kids
- Eating dinner outside in the evenings
- Using hot tub in the evenings
- Washing decking or patios regularly
- Having friends round for meals, BBQs or social occasions
- Kids playing games, football, water fights, having friends over

## Reality of summer 2021

Relatively dry and warm, but overcast

Some gardening and watering when necessary  
(once every week or two)

Spending more time inside

Popping out briefly for fresh air esp. those with babies

Not socialising or having friends round as much

- Finding that they don't have much time to do activities in the garden
- Finding the weather isn't sunny or hot enough to do many activities

# During the fieldwork period many used their gardens much less than anticipated

People **overestimated** how much time they were going to spend in their gardens

There is a **romantic notion to spending time in the garden** and when thinking about garden usage it's framed around warm summer days and evenings

In reality, we found **people used their gardens much less** than they had anticipated

## **This could be for a variety of reasons:**

- Weather hasn't been as good as they'd have liked
- Life is busy and they didn't find time – work, school drop offs, trips away etc.
- Felt too lazy or tired to do the activities that require more effort

*"Normally we'd be out in the garden a bit more but we've been doing bits in the house."*

*"It has been a bit hit and miss with the weather – if it were hotter we'd have used the garden much more."*

# It's difficult to recall water usage in the garden accurately

## Respondents found it tricky to remember exactly how many times they used water in the garden over the 6 week period

This was especially true for **watering the garden**, where most over-estimated the frequency that they did so

Many **claimed to have a more strict and regular watering routine** than they carried out in reality



Those with plants or trees in their garden anticipated that over summer they'd water the garden every **2-3 days or daily** if it had been particularly hot



In reality, a lot of these people were only **watering less than once a week**

When weather is dry and warm, but **grey**, watering behaviours become a lot more infrequent

**NB: those who are particularly green-fingered are much more aware of their usage – they anticipated watering once or twice a week and had done so despite the grey weather**

**Few follow a strict routine in reality** and watering the garden is a sporadic behaviour during the fieldwork that we observed

It's often done when:

- You find yourself at home with time on your hands
- When the weather is particularly hot, and crucially, sunny
- When you happen to notice your plants looking dry or unhealthy



# Many overestimated how much they typically use their outdoor tap

As part of the research we asked participants to complete a short questionnaire telling us about their water usage

? Roughly **how many times** does your household turn on the garden tap during an average weekday in the summer (June-September)?

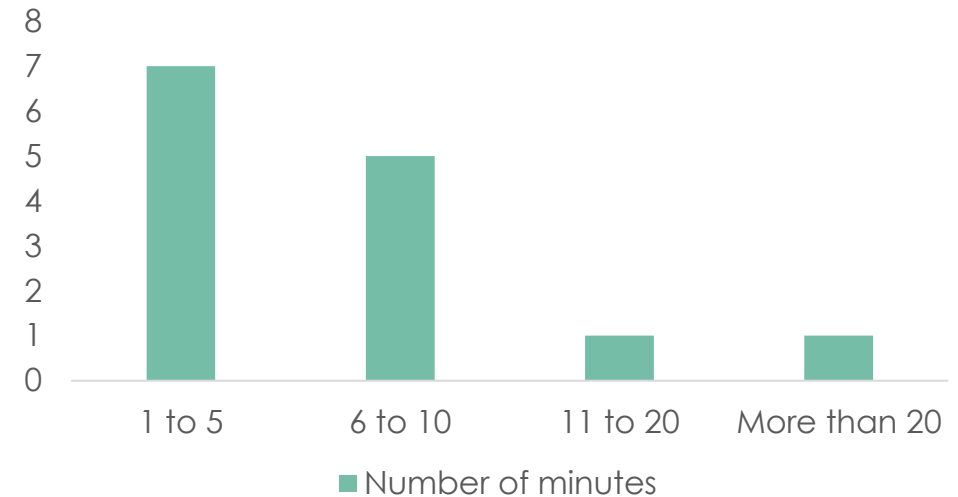
Most found it **difficult to estimate** how much water they were using

When asked for a typical day between June and September, people immediately thought of hot, sunny days

**50%** Estimated they turned on their tap more than once per day

In reality, only **one participant** was observed to be using her garden tap every day

? Roughly **how long, in minutes**, do you think your garden tap runs for during an average weekday in the summer (June-September)?

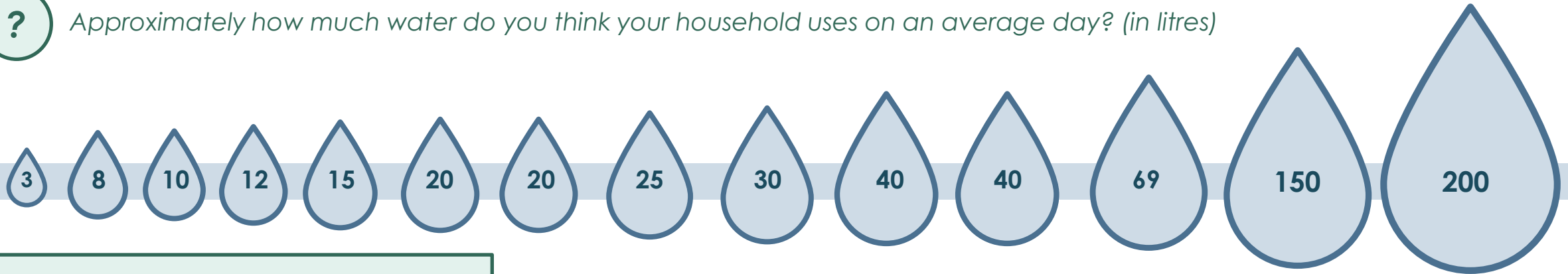


From what we observed, we found this estimation to be largely accurate

# Estimating household water usage proved difficult for respondents

When asked for overall household usage (inside and outside), people really struggled to estimate how much they might be using

? *Approximately how much water do you think your household uses on an average day? (in litres)*



Responses ranged from **3 litres** to **200 litres**

Most struggled to even make an estimation as people don't really consider what volume of water they might be using day to day

*(We know that on average people use 142 litres per day)*

*"I found this difficult to answer as I have no idea how much water my household uses per day."*

*"It's difficult to know how much water we use as we're not able to see it."*

*"Yeah I've realised I was way out with my household, I obviously use so much more than 3 litres. Truthfully, I was just thinking I have no idea...!"*



## Charlotte

### Introduction:

- Charlotte is a **25 year old mum** who lives with her baby in a bungalow in Norwich.
- The baby keeps her busy and at home a fair bit. She tends to only **use the garden in summer**. She's got a **hot tub** in the garden that she fills once a year for summer use.

### Garden usage

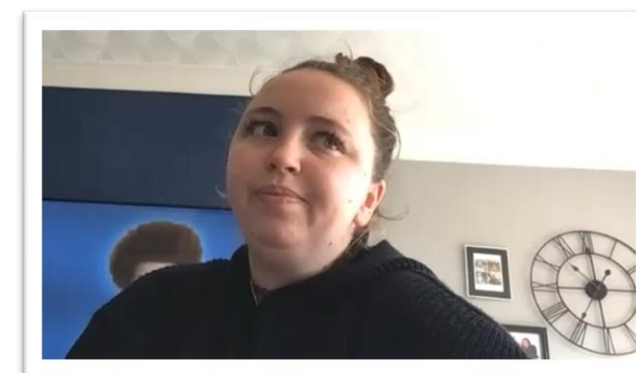
- Over the 6 week period she anticipated using the garden a fair bit, making use of the hot tub and having drinks or BBQs with family/friends.
- In reality **she found she had hardly used the garden at all**. Things were busy between doing DIY bits inside the house and taking care of the baby. She also felt **the weather wasn't hot enough** to tempt her outside.

### Water usage

- When it comes to water, **she hadn't really thought much about it being an environmental issue** and saving water wasn't on her mind at all. She feels she isn't that wasteful with water anyway.
- When asked about household water usage, she **estimated her household used approximately 3 litres a day**. She had never given it much thought. Charlotte finds **volumes of water difficult to wrap her head around** – it's hard to envisage how much X litres of water is.
- The water logger task showed that she used almost **150 litres of water to clean the fence**. This helped put into perspective how much they might use in the house on an average day.

### Moving forward

- Charlotte is unlikely to change her water usage behaviour unless she has some **helpful tips on how she can cut down**. It would help if companies could **explain water volumes in a way that's relatable** e.g. give examples of average usage and compare to 'full bathtubs' or 'buckets'.



A close-up, high-speed photograph of water splashing into a glass. The water is captured mid-air, forming a crown-like shape with many small droplets. The background is blurred with warm, golden light. A semi-transparent teal banner is overlaid across the middle of the image.

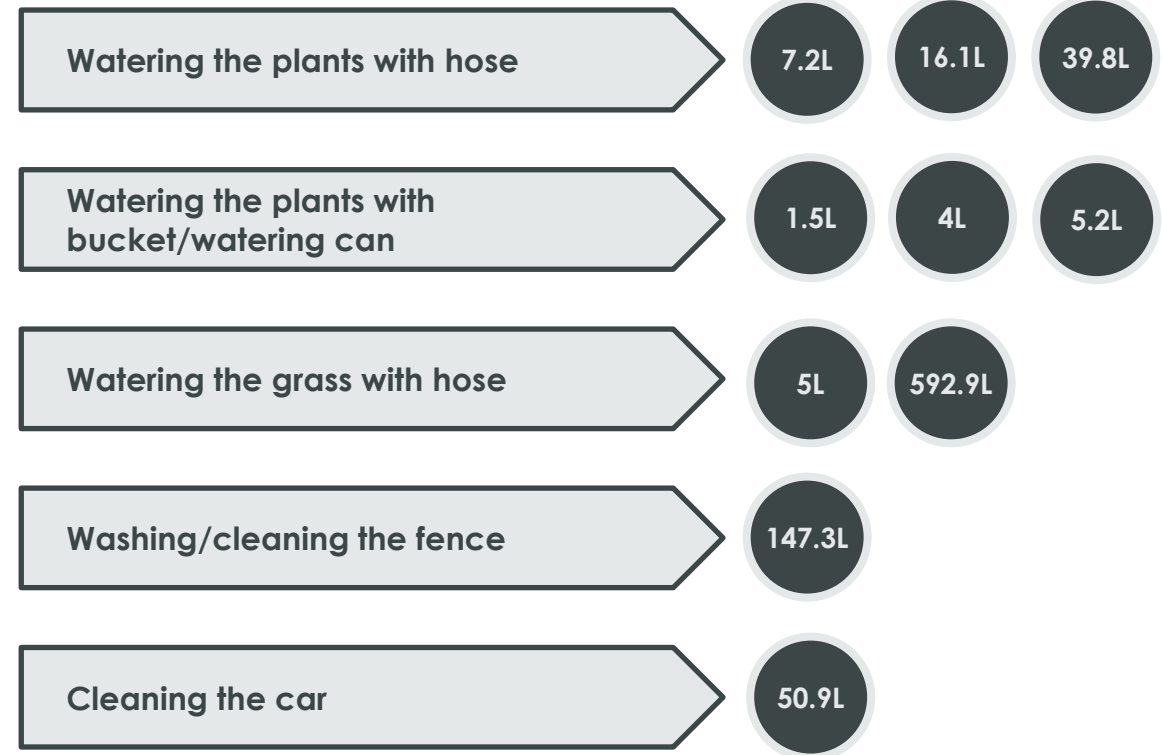
# Water logger task

# We set a task 4 weeks into the fieldwork period



- We sent all respondents a water logger attachment for their outdoor taps and asked them to set it up
- We then asked them to carry out one typical garden activity that uses water (from a list we provided)
- We asked them to read the logger before and after they carried out the activity and note down the number of litres they used
- We then discussed their reactions in our final interview with them to see what they thought about their water usage

## Some examples of water usage readings...



# Overall we found that people were shocked by how much water they had used

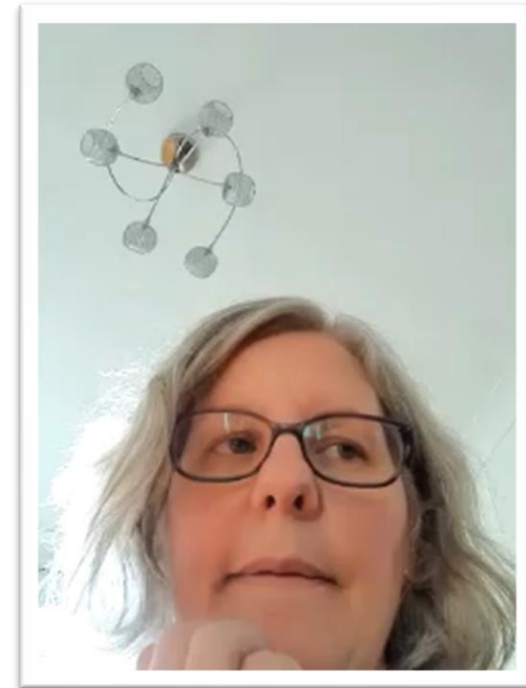
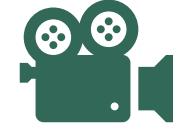
Generally people were **surprised** by how much water they used when completing a typical garden activity

Very **few consciously think about how much water they use** in the garden when carrying out various activities

As mentioned previously, **gardens are considered a wholesome** and almost sacred environment that **require care and attention**

Water is part of this, and the majority of usage is considered necessary and therefore the usage is **'guilt-free'**

Some activities are considered more **'indulgent'** such as paddling pools or hot tubs, **but they remain guilt-free** as they're not used often and they provide fun, relaxation and other key benefits



# Consumers are unlikely to change behaviour without some help or information

In future, many said they'd be interested in monitoring the water logger and seeing how much they use doing different tasks

**But this is fuelled by curiosity over anything else, as reading results alone won't help them alter behaviour**

Generally most **people aren't that bothered** by the amount of water they're using in the garden and are **unlikely to change their behaviour** just by being made aware of how many litres they're using

The method by which they do things e.g. water the garden is considered 'set', and many feel **they don't know an alternative way to get the task done**

On top of this, there is **limited motivation** to preserve water, so self-fuelled behaviour changes are unlikely

*"I don't think I will change my usage in future. I use what I need to use."*

*"I think [water loggers] are a good idea for someone who is conscious of their water usage. I'd like to think it would change my behaviour...but I don't think I technically waste water, I just use it for the essentials."*



## Jennifer

### Introduction:

- Jennifer is a retired student host who lives in Ilford. She lives on her own, but still occasionally hosts students and is visited by her children and grandchildren

### Garden Usage:

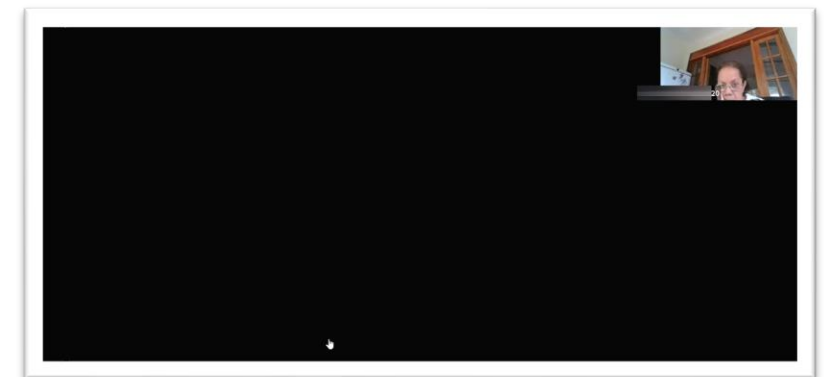
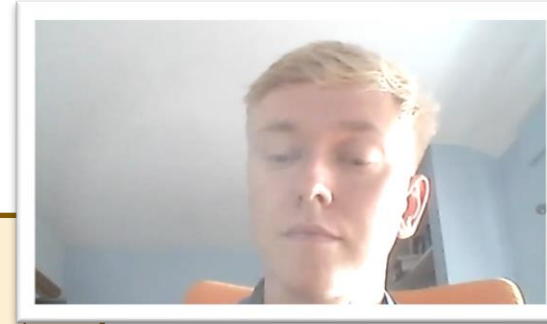
- Jennifer really values her garden and it **plays an important role in her life**
- Since Covid she has been very cautious about people coming round, so has had fewer visitors round to spend time in the garden than she might normally

### Water usage:

- Throughout the summer months she regularly waters the entire lawn including the grass, flowers and bushes. Notably, **she uses sprinklers from her garden tap and runs them for multiple hours in one go**
- When presented with footage of her using the sprinklers, she was surprised by how long she used it for. She was also taken aback after using the water logger and finding out **she used 600 litres in one sprinkler session**
- She mentioned that **occasionally she gets distracted and forgets to turn off the tap**

### Moving forward:

- Though surprised and shocked by amount of water used – **Jennifer is not too fussed about making changes to her routine**, particularly as she is not on a water meter. She still deems her garden water usage to be necessary and thus she won't/can't change. She does mention she would consider getting a water butt for other watering, but wouldn't want to reduce the amount of time using the sprinklers.



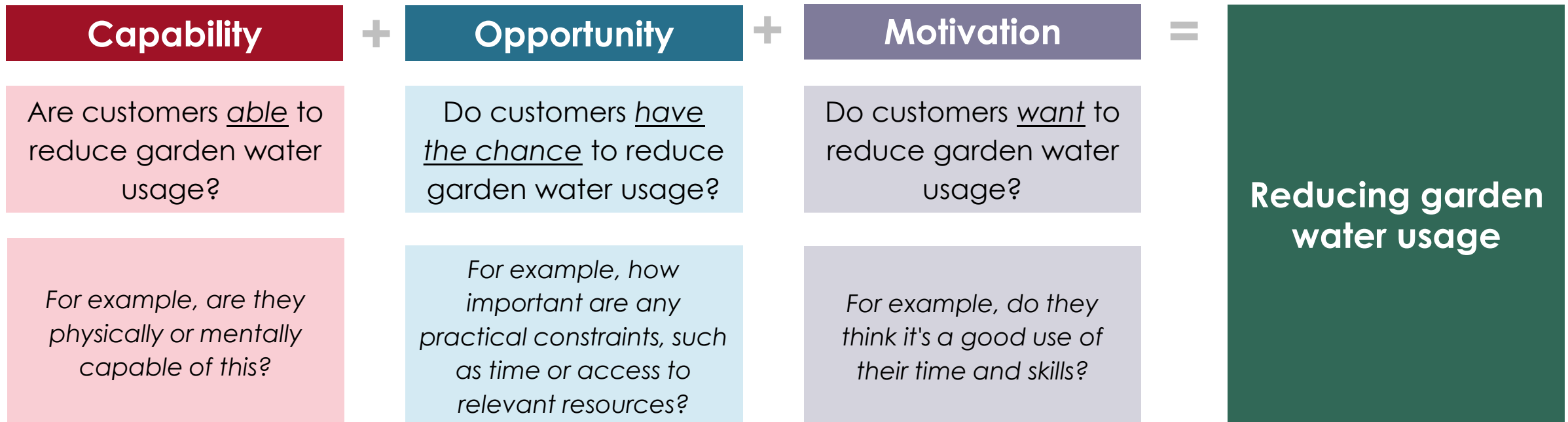


A young child with blonde hair, wearing a dark patterned long-sleeved shirt and blue pants, is watering plants in a wooden garden bed. The child is holding a silver watering can with a black handle and a black spout. The garden bed contains several green plants, including a large clump of chives in the foreground. In the background, there is a stone wall and a wire fence. The scene is outdoors with trees and a clear sky.

## Recommendations: how to change behaviour

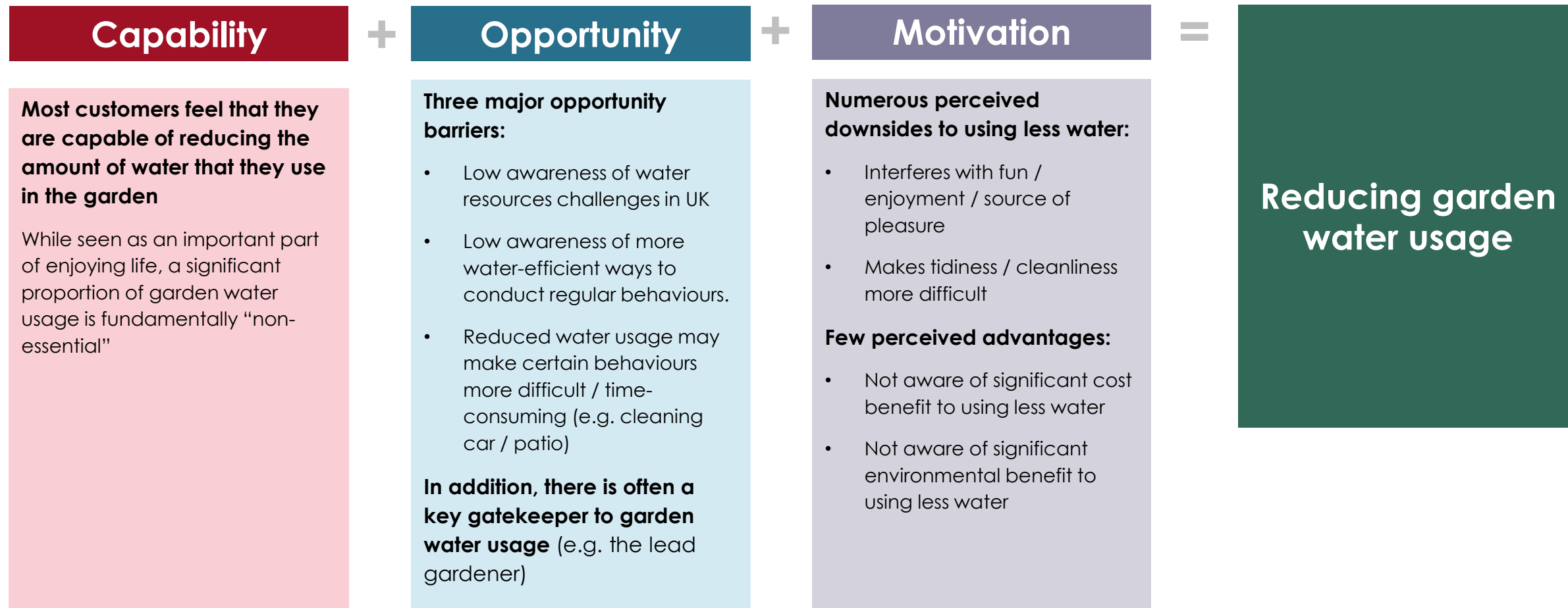
# Applying the COM-B model of behaviour change to garden water usage

We have used the COM-B model of behaviour change to summarise the barriers to reducing water usage in the garden. The COM-B model is based on the theory that, for an individual to carry out any behaviour (incl. reducing garden water consumption), they must have **capability, opportunity and motivation**:



# Key findings: barriers to reducing water usage in the garden

Based on what we heard during this research, we have summarised our COM-B analysis for reducing garden water usage below



Improved communications efforts are likely to be essential to overcome the **motivation** and **opportunity** barriers

# Recommendations: explain the need for change

Barrier addressed:

**Opportunity**

**Low awareness of water resources challenges in the UK**

## 1 Explain the need for change

### Customers have very low awareness of:

- The concept of water stress
- That water stress is an issue in many parts of the England
- The impact of their behaviours on water resources

The facts can even seem counterintuitive, given UK's status as a major developed nation and due to perception that the UK has a "wet" climate

### Communications must explain:

- ✓ The reality of the current situation, and how this will change in the coming years
- ✓ How urgent the issue is
- ✓ The likely consequences of inaction / insufficient action
- ✓ The work that is already being done
- ✓ How customers can help, and what the impact of this will be

# Recommendations: shout about the need for change

Barrier addressed:

**Opportunity**

**Low awareness of water resources challenges in the UK**

## 2 Raise the alarm about the need for change

Recent CCW research showed that **2 in 5 people living in water stressed regions think that water is plentiful**

Repeatedly low awareness across numerous research studies (incl. this one) suggest that current channels and approaches are not working

### We recommend:

- ✓ Continuing with sector-wide collaboration to develop customer awareness of water resources challenges in the UK using mainstream media channels

# Recommendations: provide simple suggestions that are easy to adopt

Barrier addressed:

**Opportunity**

**Low awareness of more water efficient ways to conduct behaviours**

## 3 Provide simple suggestions that are easy for customers to adopt

With few external reference points, **many are unaware of what they can be doing to reduce their water usage** in key outdoor behaviours

They are **also reluctant to make trade-offs** which will negatively impact their enjoyment of their protected space

### We suggest:

- ✓ Providing simple tips which help customers to modify (rather than radically overhaul) their behaviours
- ✓ Prioritising behaviour changes which will be easy for individuals to adopt
- ✓ Highlighting the likely impact of such behaviour changes, both financially (for customers) and environmentally (for society)



*Given customers' limited understanding of volumes, impacts need to be explained in terms that customers can understand  
Use measures of volume that are relevant to customers' own lives and worlds – such as buckets of water / bathtubs*

# Recommendations: incentivize behaviour change

Barrier addressed:

Motivation

Limited perceived advantages to saving water in the garden.

## 4 Make behaviour change attractive through tangible incentives

With limited current understanding of the upsides and numerous perceived downsides, only a small minority will change their behaviour

### We suggest:

- ✓ Explaining how much money metered customers could save through simple behaviour changes
- ✓ Explaining how watering with rain water is better for some plants than with tap water
- ✓ Where possible, offering discounts on water butts and other water-saving devices – as well as providing clear guidance / help with installation

A photograph of a telescope on a tripod in a field at night. The telescope is pointed towards a bright star in a starry sky. The foreground shows a field with hay bales and some buildings in the distance. A green horizontal bar is overlaid on the image, containing the text "Looking forward".

# Looking forward



## To build on this project, future research could:

### **Incorporate larger sample sizes**

- Running similar studies with larger samples and different groups of customers will provide a deeper understanding of demographic differences

### **Spread fieldwork over the year**

- Conducting fieldwork over longer periods and at different times of the year

### **Consider a variety of technology options**

- Develop technical solutions that enable us to film not only participants gardens but also have a direct and close up view of their outdoor tap



**Blue Marble Research Ltd**

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# Appendix: addressing Ofwat's research principles

Standards for high-quality research:	How addressed in this project:
Useful and contextualised	This project was used to understand water usage in the garden and provide a set of recommendations to aid water companies with advising consumers on how to change their behaviours in the garden in order to conserve water. This understanding will also feed into creating communications that are more relevant to consumers.
Fit for purpose	We used an ethnographic approach for this piece of research involving both online interviews and video observation. We sent all respondents security cameras to set up in their garden for 6 weeks so that we could observe their day to day behaviour over a long time period. The online video calls enabled us to get to know participants and contextualise the behaviours we observed. We also asked participants to attach a water logger to their outdoor tap and carry out typical behaviours to explore their understanding of water volumes.
Neutrally designed	Our team's extensive experience in designing discussion guides ensured our lines of questioning were not leading. Specifically, when asking about water usage, we allowed for spontaneous response before calling upon footage we had observed of their water usage. The 6-week fieldwork period and nature of the security camera allowed for participants to 'forget' they were being observed and act as they normally would/
Inclusive	Qualitative samples were recruited to demographic quotas to ensure they achieved a representative mix of customers across the 5 water companies who commissioned the research. We set quotas for BAME participants and participants with long-term health conditions to ensure our sample was representative.
Continual	Wessex Water to advise
Shared in full with others	The research findings are included in this full report and have been published on the Blue Marble website.
Ethical	Blue Marble is a company partner of the MRS. All of its employees abide by the MRS code of conduct and as such all of our research is in line with their ethical standards.
Independently assured	Wessex Water to advise