WRSE Customer Research

Regional Plan Preferences

Thames Water Summary Report

August 2023

eftec
economics for the environment

Background

WRSE Regional Plan

Water Resources South East (WRSE) is an alliance of the six water companies that supply drinking water across South East England, including Thames Water. In collaboration with Government, regulators and stakeholders WRSE is developing the long-term plan for water resources for the region. The overall aim is to outline the strategic approach to make water supplies in the South East more resilient and address the projected future shortfall in water resources due to climate change, population growth and increased protection for the environment. The plan will be implemented and delivered through the individual Water Resource Management Plans (WRMPs) of the six WRSE companies.

WRSE consulted on the draft regional plan in early 2023. The plan is based around a series of future scenarios and understanding the amount of additional water that may be needed to secure water supplies over the period 2025 - 2100. The basic legal and regulatory requirements and policy expectations for the plan include:

Resilience: Increase the resilience of the region's water supplies to reduce the risk of emergency restrictions such as standpipes to no more than once every 500 years on average by 2040.

Environment: Leave more water in the environment to deliver long-term environmental improvements.

Leakage: Reduce leakage by at least 50% by 2050.

Demand: Support the national ambition to reduce household water use to 110 litres per person per day by 2050.

Introduction

WRSE Customer Research

- This report summarises the main findings for Thames Water household customers from research conducted by WRSE that examined preferences for the balance of the regional plan in terms of reducing demand for water, developing new schemes, and bill impact.
- The plan identifies the priority investments they will enable adaptation in the longer term to different future scenarios in order to manage uncertainty. Here a series of choices remain, including:
  - The scale of development of shared resources that can supply customers in multiple company areas versus greater emphasis on “local” schemes;
  - How much reliance should be placed on the transfer of water to South East from other regions versus self-sufficiency within the region; and
  - The overall ambition for reducing demand and the set of measures and support from Government that will be needed to bring down per capita consumption.
- The research carried out by WRSE – via a representative survey of customers in the South East - sought the customer view on these choices. The results and findings sit alongside the consultation feedback to WRSE and companies from regulators, stakeholders and other interested groups. Along with these responses the view from customers will help inform the finalisation of the regional plan in early Summer 2023.
- Results for the overall WRSE customer base are reported separately. See: *WRSE (2023) WRSE Customer Research – Regional Plan Preferences, Summary Report, August 2023.*

Customer research to inform the regional plan

The WRSE survey represents the final stage of three-part programme of customer research that has inputted to the development of the regional plan:

2020-21: large scale study with more than 2,500 customers to understand their priorities and the types of schemes they prefer, which was used to assess the different plan options.

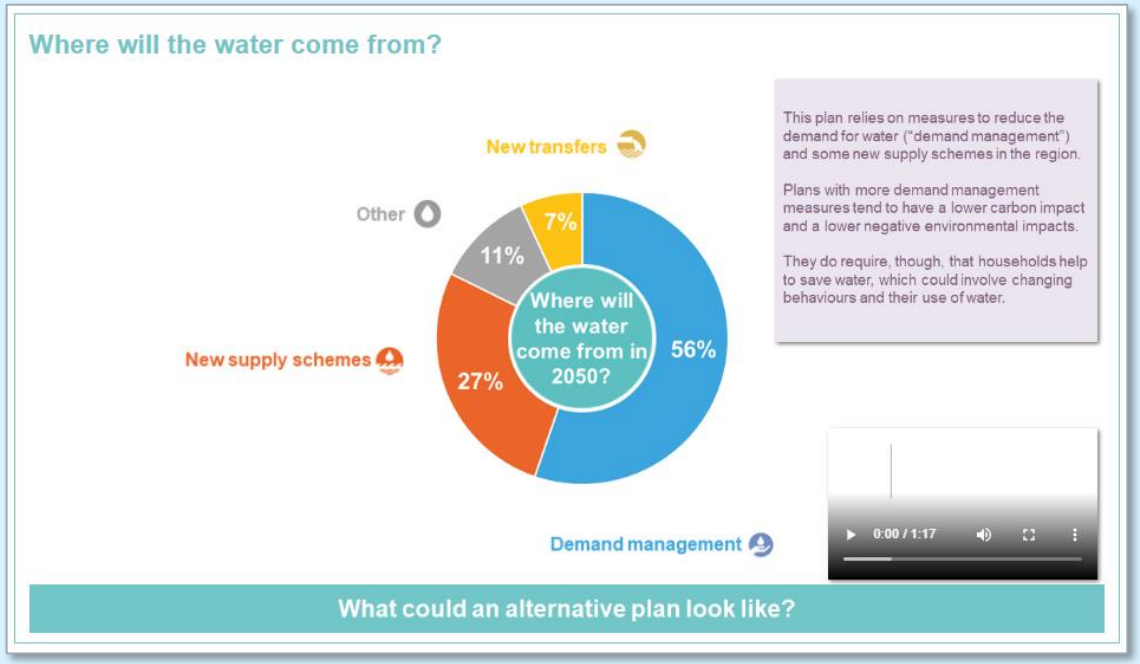
2021: focussed research with customers to understand the outcomes from the plan they value most and the wider benefits they want the best value plan to deliver.

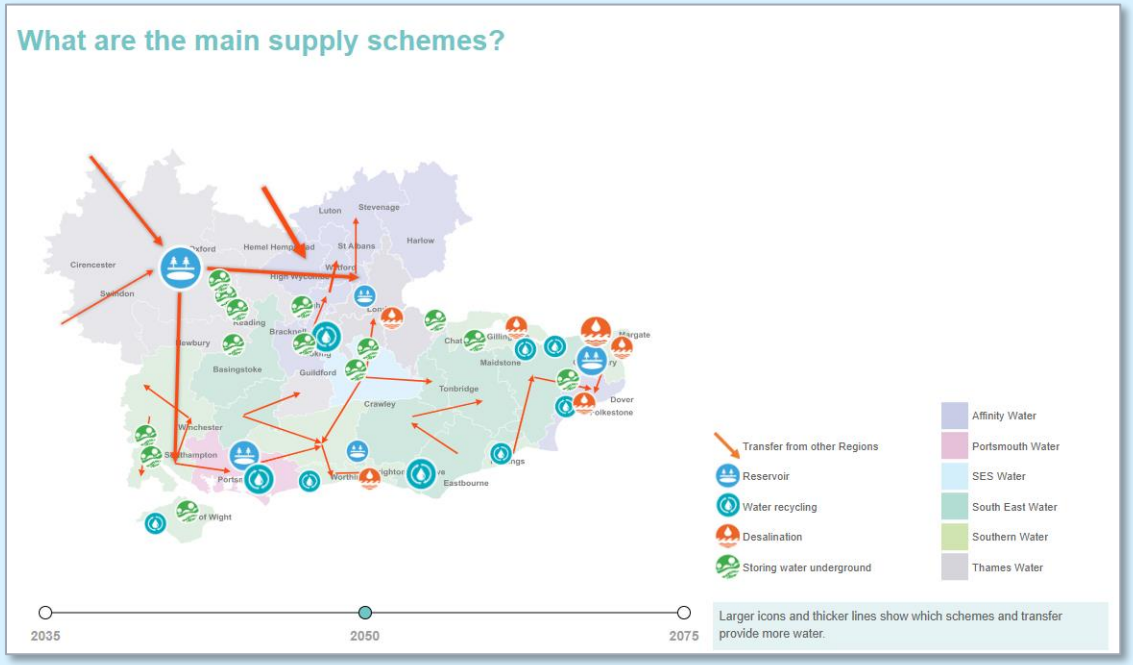
2023: large survey of customers’ preferences with around 1,700 respondents focused on the overall balance of the regional plan (strategic resources, local schemes, transfers and demand management ambition).

Survey content

Presenting the Regional Plan

- A range of interactive survey content was used to introduce and explain the regional plan to respondents. This included videos, graphics and charts with “rollovers” or “flip over” cards, along with a clickable map of South East showing the location and timing of major schemes.
- Upfront explanatory content outlined the key drivers of the plan (population growth, climate change, drought resilience and environmental ambition) and the main features (balance of demand, supply, and transfer options), along with the implications for customers’ use of water.
- “Warm-up” questions focused on gauging respondents’ awareness of the key drivers for the plan and their attitudes towards enhanced demand management, inter-region transfers, and development of strategic schemes versus more local level schemes.





Regional plan choices

Alternative Plan Profiles

- The profiles of alternative plans shown to respondents were specified according to outputs from WRSE's extensive investment modelling over 2022.
- The alternative profiles characterised the high-level choices and trade-offs for the balance of the regional plan based around sources of water (supply schemes, transfers and demand management) and selected impacts.
- The five plans were selected from a longer list of candidate plans based on analysis and pre-testing with customers to determine the subset that presented sufficient trade-offs and meaningful differences for respondents to choose between.

Plan profile (label in survey)	**Features**
Least cost (Mix of schemes)	Base plan: balance of transfers, strategic schemes, local schemes, and demand management.
Best value (More resilient)	Draft plan (consultation): more emphasis on demand management and strategic schemes over transfers and local schemes, with higher resilience.
More transfers, fewer reservoirs (More transfers, fewer reservoirs)	Reliance on transfers and local schemes, with specific exclusion of the South East Strategic Reservoir Option (SESRO), with lower resilience.
Accelerated demand management ("Gov C") (More demand management)	Balanced plan plus highest level of ambition for demand management requiring Government-led intervention, with a lower carbon impact.
Exclude Government led demand management ("Gov H") (Less Government intervention)	Lowest level of ambition for demand management with absence of Government-led intervention, with a higher carbon impact.

Notes: Profiles for Government-led water efficiency interventions are:

- Government Intervention C (Gov C): low until 2040 (water labelling for products) and medium from 2050 (min. product standards) and high from 2060 (new building regs.) (interim between 2040 to 2050 to 2060).
- Government Intervention H: Low Government savings from 2025 (water labelling for products).

Customer preferences

Choice Tasks

- In the survey respondents completed two sequential choice exercises using a preference ordering ("full ranking") format:
  - i. Preference over alternative plans without bill impact. This provided an "unconstrained" view of customers' preferences based on the profile of each plan (i.e. the mix of schemes and impacts).
  - ii. Preference over alternative plans with (randomised) bill impact. This provided a "constrained" view on customer preferences reflecting trade-off between higher/lower bill amounts and the profile of each plan.
- The bill impact presented in (ii) was described as the average annual bill impact over the whole planning period (2025 – 2100). Respondents were told that the stated amount was for the cost of investments for regional plan only. The total amount paid for water and wastewater services over the planning period would depend on other investments. Respondents were also told that the bill did not include an estimate of the effect of inflation.

Sample profile

Thames Water household respondents

- Sample size: 593 respondents who were Thames Water customers (438 London, 155 Outside London). This represented 42% of the overall household customer sample for the research (n = 1,409). The sub-sample of Thames Water respondents was sufficiently large to conduct company-specific analysis and produce representative results, in line with the quota profiles.
- Fieldwork: March to May 2023.
- The sample is generally well aligned with the profile of the WRSE region in terms of population in London and Outside London, and sample weights were applied in the analysis to ensure representativeness.
- Average duration of survey interview was approximately 21 minutes.

Age		n	%
16-18		5	1%
	Quota		4%
19-24		48	8%
	Quota		9%
25-30		81	14%
	Quota		11%
31-44		225	38%
	Quota		26%
45-54		79	13%
	Quota		17%
55-64		84	14%
	Quota		14%
65+		71	12%
	Quota		19%
Total		**593**	

SEG		n	%
AB		271	46%
	Quota		29%
C1C2		241	41%
	Quota		50%
DE		81	14%
	Quota		21%
Total		**593**	

Gender		n	%
Female		323	55%
	Quota		50%
Male		269	45%
	Quota		50%
Total		**592**	

Quotas based on the overall WRSE region

Analysis

Customer preference models

The main results are reported for Thames Water household respondents' most preferred plan from the set of five alternative profiles:

A. **Preferred plan without bill impact.** This is the "pure" unconstrained preference, reflecting the choice based on the alternative plan profiles (mix of schemes, the intensity of demand management and their wider outcomes including resilience to drought and unexpected events, carbon emissions, and impact on customers' water use) from the set of five alternative plans.

B. **Preferred plan including bill impact.** This is the constrained choice, reflecting the trade-off between the preference for an alternative plan profile and the impact on customer bill – presented as the average annual bill impact over the whole planning period (2025 – 2100).

C. **Sensitivity to bill impact.** These results show the level of customer support for each individual plan at varying levels of bill impact (average annual bill impact 2025 – 2100).

Supporting sensitivity analysis examined respondents' full ranking (preference ordering) of the five alternative plans including bill impact. All model results are provided in Annex 1 for reference.

Estimation results

Reported results are based on econometric analysis of the choice exercise responses.

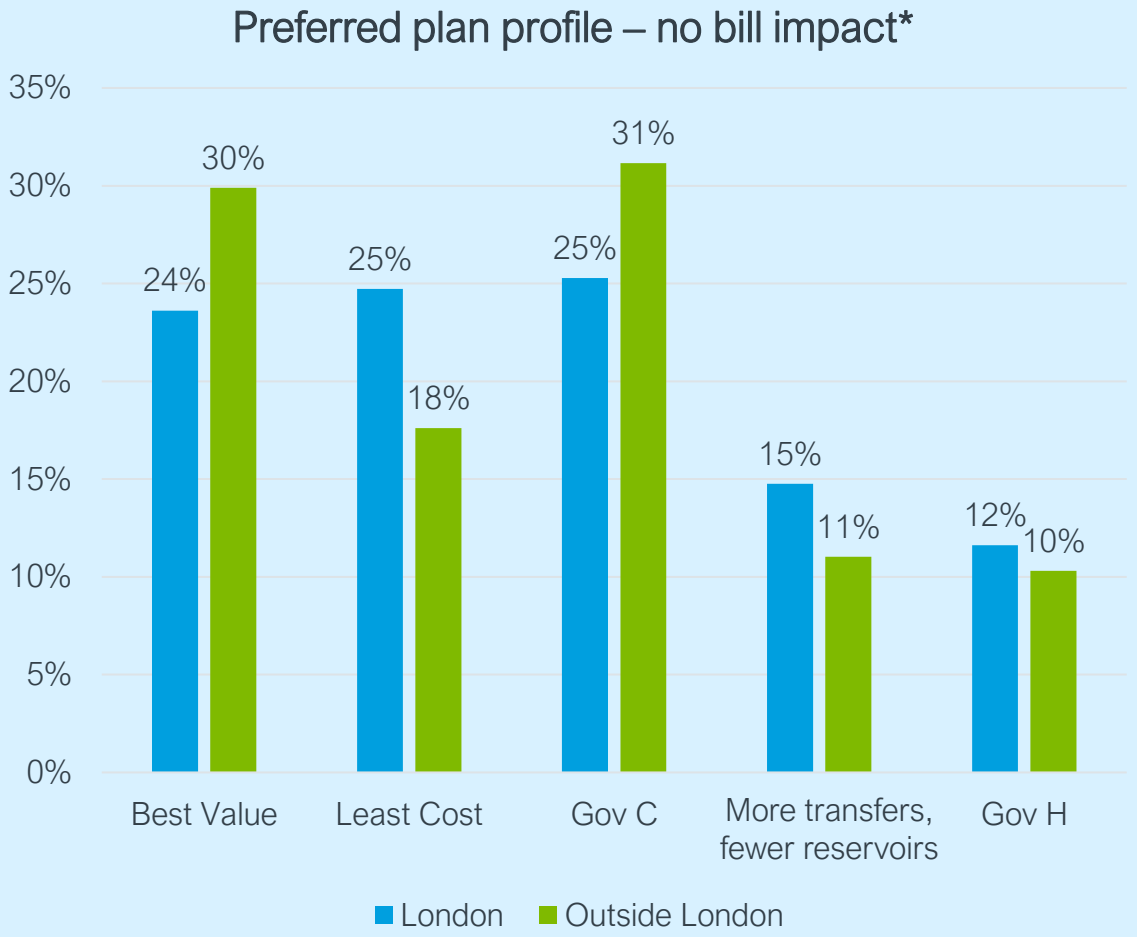
Two basic model specifications were used: (i) overall preference amongst alternative plan profiles to explain strength of preference for each plan; and (ii) preference for each individual plan to examine sensitivity to bill impact, independent of preference for the alternative plans

The estimated models control for a range of customer demographic, socio-economic, and geographic factors. The models explain customer preferences based on the alternative plan profiles, wider explanatory factors, and bill impact.

A. Preferred plan – without bill impact

Household preferences

- Overall, Thames Water household customers had a stronger preference for the plans that offered a balance of strategic and local schemes with transfers, along with higher levels of demand management. The combined support for the Best Value (London: 24%, Outside London: 30%), Least Cost (L: 25%, OL: 18%), and Gov C plans (L: 25%, OL: 31%) represented 75% of the respondent sample.
- Customers in London had similar levels of preference for the Best Value, Least Cost and Gov C plan, while customers Outside London tended to prefer the Best Value and Gov C plans.
- There is clear distinction between these three plans and the lower level of preference observed for the More transfers, fewer reservoirs plan (London: 15%, Outside London: 11%), which is reliant on transfers and local schemes. Similarly, limited support was observed for the lowest level of demand management ambition offered via the Gov H plan (L: 12%, OL: 10%).

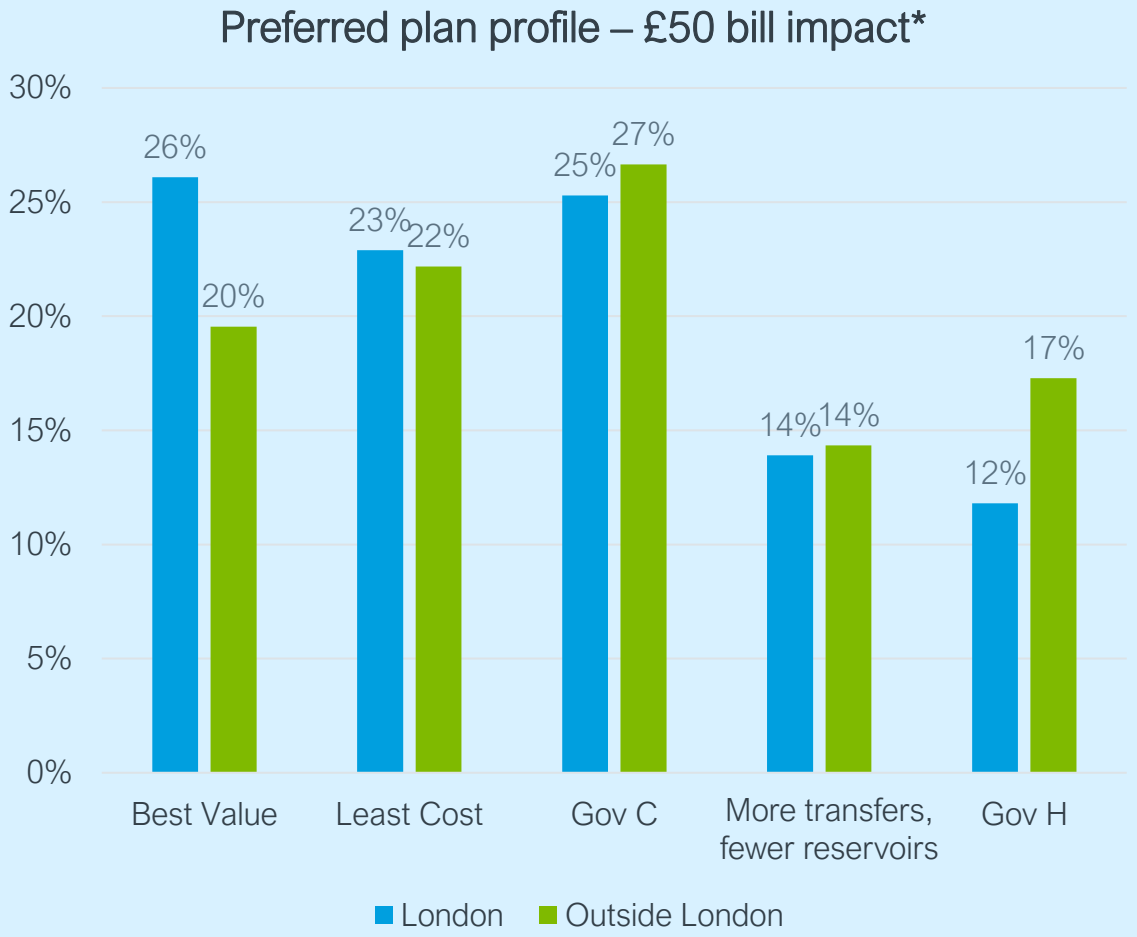


*Results: most preferred plan based on choice between alternative profiles (mix of schemes, the intensity of demand management and wider outcomes including resilience to drought and unexpected events, carbon emissions, and impact on customers' water use), excluding bill impact. This represents an "unconstrained" preference result.

B. Preferred plan – £50 bill impact

Household preferences

- The pattern of customer preferences varied across alternative plan profiles when respondents weighed these against bill impact, but in general the overall findings are consistent with the "unconstrained" preference result. The Gov C, Least Cost and Best Value plans remained the most favoured.
- In London, the share of customer support for the Best Value plan (26%) slightly outweighed the Gov C plan (25%), followed by the Least Cost plan (23%). The lower level of support for the More transfers, fewer reservoirs (14%) and Gov H plans was consistent with the "unconstrained" result.
- Outside of London, the Gov C plan remained the most preferred alternative (27%), with a lower level of support for the Best Value plan observed (20%). Correspondingly, there were marginal increases in support for the Least Cost (23%), More transfers, fewer reservoirs (14%) and Gov H (17%) plans.

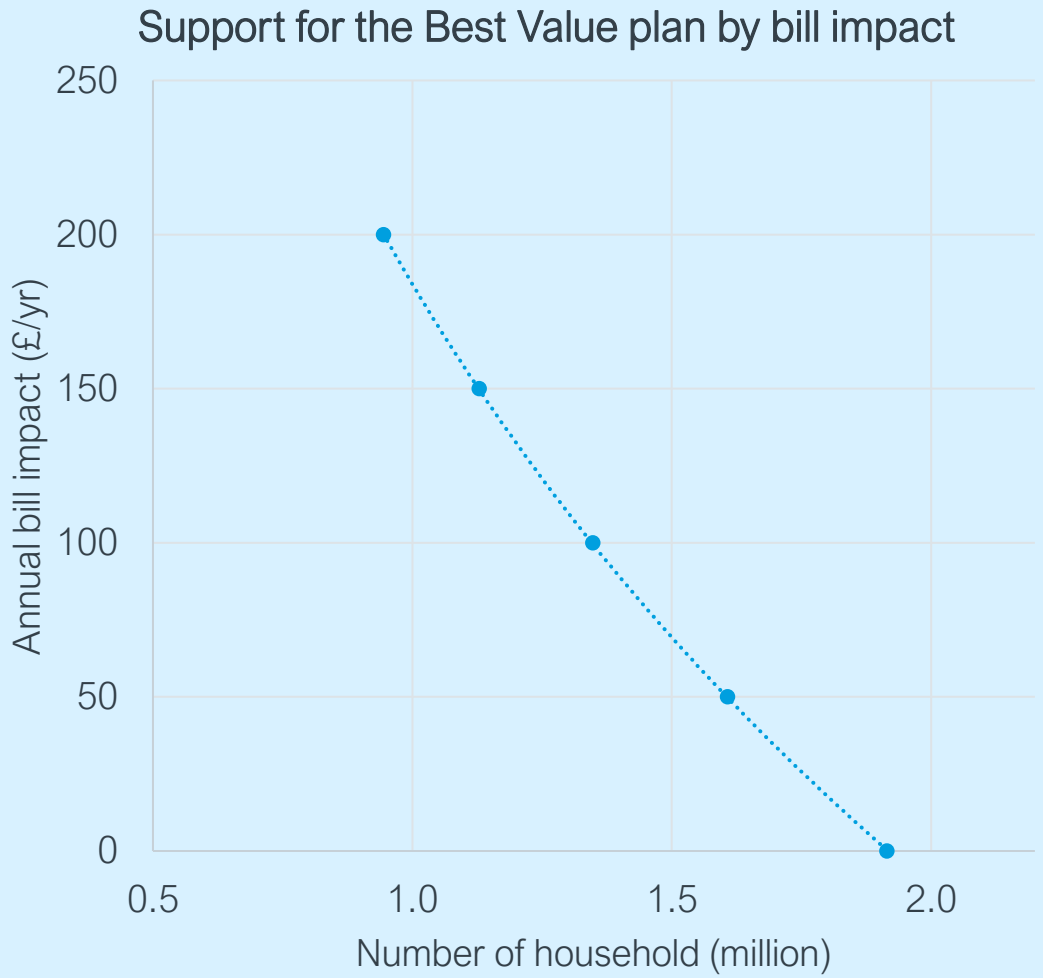


*Results: most preferred plan based on choice between alternative profiles and bill impact (average annual amount over 2025 – 2100 planning period). This represents an "unconstrained" preference result. A random bill impact amount was assigned to each plan (between £5 - £250 per year) and varied across respondents. Reported result are for most preferred plan at £50 bill impact.

C. Sensitivity to bill impact

Household preferences

- Findings for customer sensitivity to bill impact are based on the analysis of the level of support for each individual plan (i.e. independent of the preference for the alternative plan profiles).
- The results indicate the approximate number of customers that would support a given plan at varying average annual bill impact amounts (£/year) (all else equal). A negative relationship is expected - i.e. a downward sloping curve – showing that a lower proportion of customers would support a plan at a higher level of bill impact (all else equal).
- For the best value plan, an estimated 1 million households would support the plan if the average annual bill impact was £200 per year. The level of support increases to around 1.6 million households if the bill impact was £50 per year.
- To illustrate the degree of sensitivity to bill amount - if the bill impact increased from £50 to £100, the level of customer support for the Best Value plan would fall by approx. 19% (from £1.6m to £1.3m households).

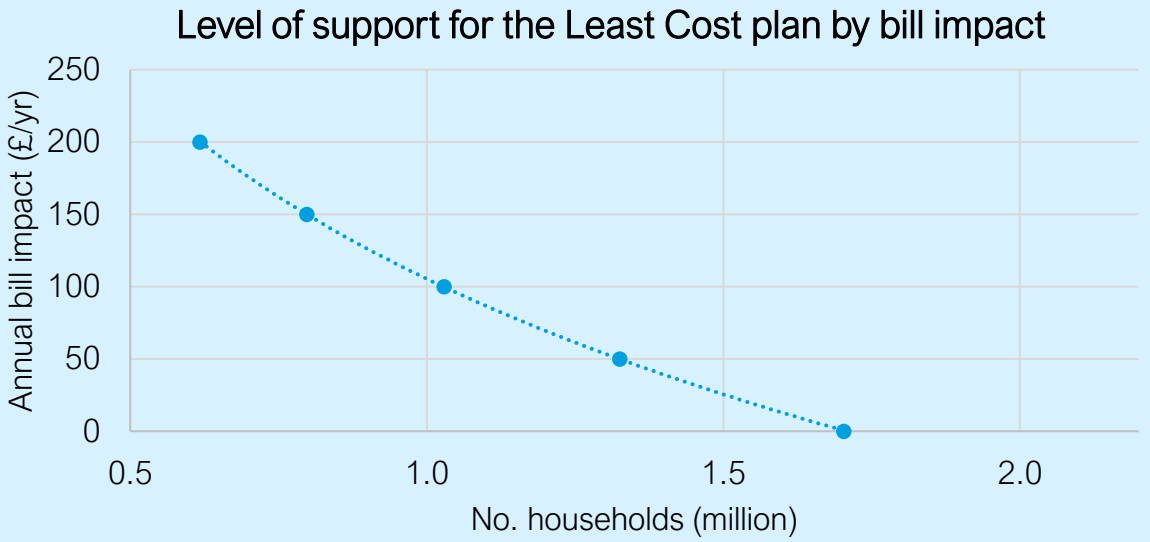


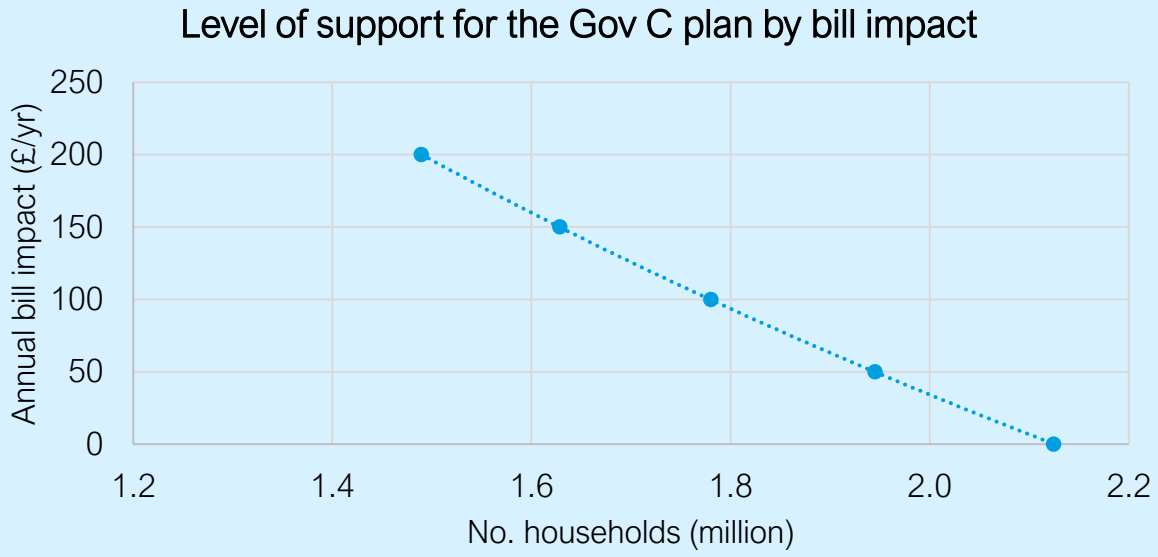
*Results: predicted support for Best Value plan by bill impact (average annual amount over 2025 – 2100 planning period). Result is based on modelled relationship between choice of Best Value plan and bill impact (independent effect / all else equal). The model doesn't consider relative preferences for the other four plans.

C. Sensitivity to bill impact

Household preferences

- Results for the alternative plan profiles illustrate the lower level of support for the Least Cost plan, but the higher level of support in aggregate for the Gov C plan.
- The preference for the More transfers, fewer reservoirs and Gov H plans were insensitive to the change in bill impact – i.e. the level of support does not change over the range of annual average bill impact amounts.
- The plan with the greatest level of sensitivity to bill impact is Least Cost. The level of support increases proportionally more for a £50 change at lower bill amounts, compared to higher amounts.
- Comparison to the Best Value plan results suggest that as the regional plan becomes more expensive (avg. annual bill impact greater than £100/year), it becomes increasingly important to incorporate elements like resilience (i.e. the Best Value plan is preferred over Least Cost) and rely less on reducing demand (i.e. the Best Value plan is preferred over Gov C).

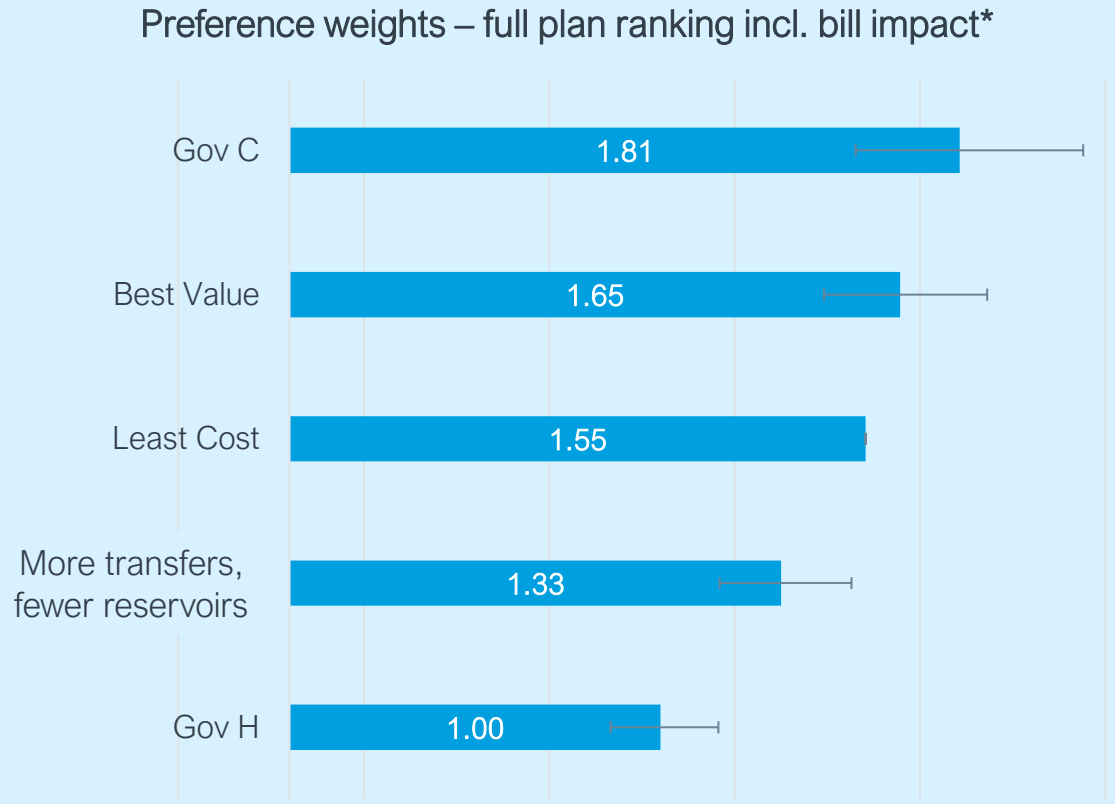




Sensitivity analysis

Household preferences

- Sensitivity analysis was conducted based on respondents' full preference ordering for the alternative plan profiles, which ranked them from 1st to 5th preference. Model estimations are provided in Annex 1 for reference.
- Results for households were consistent with the Gov C plan tending to be favoured over the Least Cost and Best Values, and the More transfers, fewer reservoirs and Gov H plans having the lowest strength of preference.



*Preference weights are calculated "odds ratios" from the main model estimation. Here they can be interpreted as quantifying the relative strength of preference that customers assign for each plan when considering the full ranking.

The odds ratios show the relative weight of the plan compared to a 'base case' or reference point. The base case in the model was the Least Cost plan – the odds ratio have been normalised and rescaled to make the Gov H plan the base case. The base case has an odds ratio of 1, an odds ratio greater than 1 indicates that the plan is preferred relative to the base. The difference in odds ratio between each plan shows the step changes (i.e. how much an attribute is preferred over another).

Comparison to overall WRSE results

Households

- Thames Water customers' preferences for the regional plan are consistent with the overall findings for the South East. There was a slightly higher level of preference for the Gov C plan for Thames Water – driven mainly by customers outside of London (Upper Thames region) – but that plan along with Best Value plan and the Least Cost plan still accounted for greatest share of support as was also observed for WRSE overall (75% for WRSE region overall, versus 74% for London and 69% for Outside London).
- In line with the overall region, a consistent finding was also the lower level of support for the Gov H plan (absence of additional Government led intervention for demand reduction). On this basis, the higher level of support for Least Cost and Best Value plans can be attributed in part to the inclusion and sooner introduction of water efficiency and product standards to support targets to reduce per capita consumption.
- The Thames Water customer view on the added resilience to unexpected events offered by the Best Value was a little split. A stronger level of support was observed for London (26% at £50 bill impact) compared to Outside London (20%). The Outside London result was driven by customers in the Upper Thames region, who across the entire WRSE region had the joint lowest level of support for the Best Value plan at a £50 bill impact, along with customers in the West region. The difference was, though, that customers in the West strongly supported the Least Cost plan (52%) over all other plans at a £50 bill impact. Customer preference in the Upper Thames was more evenly split across the 5 alternative plans at a £50 bill impact. Notwithstanding, at higher bill impact amounts (>£100/yr) increased levels of support were observed for the Best Value plan in all parts of the WRSE region (including Upper Thames), indicating that customers generally saw it as better value for money if the bill impact of the plan was going to be high.

Comparison to overall WRSE results

Non-households

- A total of 92 non-household Thames Water customers were included in the overall sample (29%), split between 51 respondents in London and 41 respondents Outside London. Result are presented in aggregate in overall WRSE report. The main findings included:
  i. "Unconstrained"/ no-bill impact preference: Non-household customers preferences were also split across the alternative plan profiles. Overall, the Best Value plan had the highest level of support (32%) and combined with the Least Cost and Gov C plans these profiles accounted for 68% of the respondent sample. Compared to household preferences there was a higher level of support for the More transfers, fewer reservoirs plan (22%). Support for Gov H plan was, though, limited and in line with the household results.
  ii. "Constrained" / with bill impact: Non-household preferences varied depending on the bill impact. The greater share of support for the plan profiles offering a balance of schemes switched from the Least Cost and Best Value plans at amounts below 15% current bill (23% - 28%) to the Best Value and Gov C plans at bill amount above this (24% - 29%).
  iii. Sensitivity analysis for non-households showed a closer level of preference between the Least Cost, Best Value, Gov C and More transfers, fewer reservoirs plans. These results, though, are subject to wider error margins (95% confidence intervals) compared to the household results due to the smaller sample size.

Conclusions

Key findings

- **The overall preference is for a balanced regional plan.** The three most-preferred plan profiles for both households and non-households in London and Outside London featured a mix of strategic resource schemes (incl. SESRO), "local schemes" (Teddington water recycling), and higher levels of demand management ambition. The plans with more extreme variations in schemes and options – such as More transfers, fewer reservoirs (ex. SESRO and more inter-region transfers) and Gov H (lower Government intervention) - were clearly less preferred over the Least Cost, Best Value and Gov C plans. In combination the level of support for these plans was around 69% - 74% of household customer. The Gov C and Best Value plans in combination accounted for around half of customers' preferred plan responses with a low bill impact.
- **A greater weight of customer preference was for self-sufficiency within the WRSE region.** Large-scale transfers from outside of the region were not viewed as the primary solution but rather part of the mix needed. The level of support observed for the Gov C plan also suggests that a sizeable proportion of customers preferred demand reduction over reliance on large-scale transfers as the basis of "balanced" regional plan to secure water supplies.

Conclusions

Key findings

- **Customers recognise the need to reduce demand and see this as an integral part of the regional plan,** but this must be supported by Government intervention. A consistent finding across all aspects of the analysis of customer preferences was the low level of preference for the Gov H plan and absence of added Government-led intervention for demand reduction. There was a comparable level of support for the highest level of demand management ambition through the Gov C plan at lower bill impact levels. Moreover, the higher level of support for Least Cost and Best Value plans can be attributed in part to the inclusion and sooner introduction of water efficiency and product standards to support targets to reduce per capita consumption. Further, 88% of household respondents thought that Government introducing new legislation to promote the efficient use of water (water efficiency labels, standards for new homes) must or should be in place for them to find it acceptable to reduce their water use.
- **Customers' preferences did vary between London and Outside London but in line with the profile of the alternative plans**. The greatest level of support for the Gov C plan with a low bill impact was observed from respondents Outside London. The Best Value plan (with a low bill impact) stood out as having the strongest level of preference from respondents in London. In both cases, the support observed for these plans corresponds with the strategic resource option that would see water moved from Outside London to London.

Appendix 1
Estimation results – customer preference models

Customer preference models

A. Model for the preferred plan without bill impact (Thames Water households)

Multinomial logistic regression

Number of observations	592
LR chi2 (28)	94.81
Prob > chi2	0
Log likelihood	-1021.8
Pseudo R2	0.443

	Coefficient	Std. err.	z	P>z	[95%	
Best Value						
AGE						
25-54	-0.1759656	0.333801	-0.53	0.598	-0.8302	0.478272
55+	-0.773091	0.369172	-2.09	0.036	-1.49666	-0.04953
LONDON	-0.5755383	0.259359	-2.22	0.026	-1.08387	-0.0672
VULNERABLE CUSTOMERS	-0.627016	0.300949	-2.08	0.037	-1.21687	-0.03717
PREFERS DEMAND MANAGEMENT	0.2362151	0.235373	1	0.316	-0.22511	0.697538
PREFERS LARGER SCHEMES	0.0687629	0.231282	0.3	0.766	-0.38454	0.522067
SEG AB	0.8877364	0.42115	2.11	0.035	0.062298	1.713175
CONSTANT	0.7281673	0.380501	1.91	0.056	-0.0176	1.473936
Least Cost	(base	outcome)				
Gov C						
AGE						
25-54	0.2454073	0.350095	0.7	0.483	-0.44077	0.931581
55+	0.2532842	0.367256	0.69	0.49	-0.46653	0.973094
LONDON	-0.5488757	0.247092	-2.22	0.026	-1.03317	-0.06458
VULNERABLE CUSTOMERS	-0.4704327	0.27028	-1.74	0.082	-1.00017	0.059306
PREFERS DEMAND MANAGEMENT	0.704106	0.228794	3.08	0.002	0.255678	1.152534
PREFERS LARGER SCHEMES	0.005631	0.221345	0.03	0.98	-0.4282	0.439459
SEG AB	0.4247144	0.434848	0.98	0.329	-0.42757	1.277001
CONSTANT	0.0941338	0.392708	0.24	0.811	-0.67556	0.863827
More transfers, fewer reservoirs						
AGE						
25-54	0.2603879	0.431838	0.6	0.547	-0.586	1.106774
55+	-0.3003967	0.470581	-0.64	0.523	-1.22272	0.621925
LONDON	-0.0484382	0.324559	-0.15	0.881	-0.68456	0.587686
VULNERABLE CUSTOMERS	-0.2250125	0.334143	-0.67	0.501	-0.87992	0.429896
PREFERS DEMAND MANAGEMENT	-0.0601705	0.279798	-0.22	0.83	-0.60856	0.488224
PREFERS LARGER SCHEMES	-0.7448346	0.282564	-2.64	0.008	-1.29865	-0.19102
SEG AB	1.104852	0.455184	2.43	0.015	0.212707	1.996996
CONSTANT	-0.2488903	0.485697	-0.51	0.608	-1.20084	0.703059
Gov H						
AGE						
25-54	-0.876701	0.362551	-2.42	0.016	-1.58729	-0.16611
55+	-1.792035	0.435893	-4.11	0	-2.64637	-0.9377
LONDON	-0.2216197	0.316955	-0.7	0.484	-0.84284	0.3996
VULNERABLE CUSTOMERS	-0.3714031	0.36411	-1.02	0.308	-1.08505	0.342239
PREFERS DEMAND MANAGEMENT	-0.3613368	0.283697	-1.27	0.203	-0.91737	0.194699
PREFERS LARGER SCHEMES	-0.6042816	0.283773	-2.13	0.033	-1.16047	-0.0481
SEG AB	0.7054551	0.499558	1.41	0.158	-0.27366	1.684571
CONSTANT	1.023047	0.414715	2.47	0.014	0.21022	1.835874

Customer preference models

B. Model for the preferred plan with bill impact (Thames Water households)

Multinomial logistic regression

Number of observations	592
LR chi2 (32)	55.64
Prob > chi2	0.0059
Log likelihood	-1051.05
Pseudo R2	0.0258

	Coefficient	Std. err.	z	P>z	[95%	
Best Value						
BILL	0.003651	0.001937	1.89	0.059	-0.00014	0.007447
AGE						
25-54	0.443528	0.360132	1.23	0.218	-0.26232	1.149374
55+	0.641533	0.390317	1.64	0.1	-0.12347	1.406539
LONDON	0.256608	0.271617	0.94	0.345	-0.27575	0.788968
VULNERABLE CUSTOMERS	-0.49401	0.309712	-1.6	0.111	-1.10104	0.113013
PREFERS DEMAND MANAGEMENT	0.349483	0.241347	1.45	0.148	-0.12355	0.822515
PREFERS LARGER SCHEMES	-0.11925	0.241541	-0.49	0.622	-0.59266	0.35416
SEG AB	1.173662	0.440164	2.67	0.008	0.310957	2.036367
CONSTANT	-1.11986	0.436527	-2.57	0.01	-1.97543	-0.26428
Least Cost	(base	outcome)				
Gov C						
BILL	0.004296	0.001781	2.41	0.016	0.000805	0.007787
AGE						
25-54	0.153429	0.30684	0.5	0.617	-0.44797	0.754825
55+	0.160936	0.339342	0.47	0.635	-0.50416	0.826033
LONDON	-0.08473	0.2393	-0.35	0.723	-0.55375	0.384289
VULNERABLE CUSTOMERS	-0.28898	0.27815	-1.04	0.299	-0.83414	0.256182
PREFERS DEMAND MANAGEMENT	0.611592	0.222326	2.75	0.006	0.175841	1.047343
PREFERS LARGER SCHEMES	-0.1418	0.221712	-0.64	0.522	-0.57635	0.292747
SEG AB	0.879179	0.433541	2.03	0.043	0.029455	1.728904
CONSTANT	-0.39324	0.377189	-1.04	0.297	-1.13252	0.346036
More transfers, fewer reservoirs						
BILL	0.002838	0.002066	1.37	0.17	-0.00121	0.006887
AGE						
25-54	0.248107	0.367431	0.68	0.5	-0.47204	0.968258
55+	-0.01452	0.411146	-0.04	0.972	-0.82035	0.79131
LONDON	-0.06227	0.28334	-0.22	0.826	-0.61761	0.493068
VULNERABLE CUSTOMERS	0.010689	0.318903	0.03	0.973	-0.61435	0.635727
PREFERS DEMAND MANAGEMENT	0.14621	0.259519	0.56	0.573	-0.36244	0.654856
PREFERS LARGER SCHEMES	-0.54848	0.263382	-2.08	0.037	-1.0647	-0.03226
SEG AB	0.607627	0.506503	1.2	0.23	-0.3851	1.600355
CONSTANT	-0.54668	0.442202	-1.24	0.216	-1.41338	0.320025
Gov H						
BILL	0.002113	0.002141	0.99	0.324	-0.00208	0.006309
AGE						
25-54	-0.16449	0.353214	-0.47	0.641	-0.85678	0.527791
55+	-0.5478	0.409022	-1.34	0.18	-1.34947	0.253865
LONDON	-0.41366	0.285912	-1.45	0.148	-0.97404	0.146715
VULNERABLE CUSTOMERS	-0.0988	0.342916	-0.29	0.773	-0.7709	0.573306
PREFERS DEMAND MANAGEMENT	0.201277	0.269231	0.75	0.455	-0.32641	0.72896
PREFERS LARGER SCHEMES	-0.76514	0.276501	-2.77	0.006	-1.30707	-0.22321
SEG AB	0.939645	0.499788	1.88	0.06	-0.03992	1.919212
CONSTANT	0.045301	0.427358	0.11	0.916	-0.79231	0.882908

Customer preference models

C. Sensitivity to the bill (Thames Water households)

Logistic regression

Number of observations 5,920

Best Value

LR chi2 (8)	25.11
Prob > chi2	0.0015
Log likelihood	-1226.5115
Pseudo R2	0.0101

	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
BILL IMPACT	-0.0036723	0.001122	-3.27	0.001	-0.0058704	-0.00147
AGE						
25-54	0.0729109	0.168353	0.43	0.665	-0.2570546	0.402876
55+	0.0175313	0.189039	0.09	0.926	-0.3529786	0.388041
LONDON	-0.0017676	0.133135	-0.01	0.989	-0.2627065	0.259171
VULNERABLE CUSTOMERS	-0.3114998	0.167793	-1.86	0.063	-0.6403677	0.017368
PREFERS DEMAND MANAGEMENT	0.0452871	0.121569	0.37	0.71	-0.1929828	0.283557
PREFERS LARGER SCHEMES	0.1683103	0.118227	1.42	0.155	-0.0634093	0.40003
SEG AB	0.3477648	0.17129	2.03	0.042	0.0120427	0.683487
CONSTANT	-3.096561	0.193452	-16.01	0	-3.475719	-2.7174

Least Cost

LR chi2 (8)	26.22
Prob > chi2	0.001
Log likelihood	-360.37428
Pseudo R2	0.0351

	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
BILL IMPACT	-0.0052263	0.001232	-4.24	0	-0.0076411	-0.00281
AGE						
25-54	0.0016918	0.17291	0.01	0.992	-0.3372045	0.340588
55+	0.1841868	0.184259	1	0.318	-0.1769544	0.545328
LONDON	0.1937023	0.13092	1.48	0.139	-0.0628956	0.4503
VULNERABLE CUSTOMERS	0.2672329	0.140671	1.9	0.057	-0.0084776	0.542944
PREFERS DEMAND MANAGEMENT	-0.2646418	0.118076	-2.24	0.025	-0.4960673	-0.03322
PREFERS LARGER SCHEMES	0.2326664	0.117086	1.99	0.047	0.0031823	0.46215
SEG AB	-0.7274835	0.256151	-2.84	0.005	-1.229529	-0.22544
CONSTANT	-3.069874	0.196367	-15.63	0	-3.454747	-2.685

Gov C

LR chi2 (8)	26.38
Prob > chi2	26.38
Log likelihood	-1485.6283
Pseudo R2	0.0088

	Coefficient	Std. err.	z	P>z	[95% conf.	interval]
BILL IMPACT	-0.0018663	0.000885	-2.11	0.035	-0.0036006	-0.00013
AGE						
25-54	0.1696695	0.155876	1.09	0.276	-0.135841	0.47518
55+	0.3434646	0.167255	2.05	0.04	0.0156505	0.671279
LONDON	-0.1334588	0.114316	-1.17	0.243	-0.3575148	0.090597
VULNERABLE CUSTOMERS	-0.1192582	0.138028	-0.86	0.388	-0.3897881	0.151272
PREFERS DEMAND MANAGEMENT	0.4307959	0.11156	3.86	0	0.2121427	0.649449
PREFERS LARGER SCHEMES	0.1065355	0.104647	1.02	0.309	-0.0985686	0.31164
SEG AB	-0.0301246	0.17351	-0.17	0.862	-0.3701987	0.30995
CONSTANT	-3.141299	0.177676	-17.68	0	-3.489537	-2.79306

Appendix 2
Questionnaire

WRSE – Customer Preferences

eftec
economics for the environment

Draft Survey
Version date: 6th March 2023

RECORD:
RESPONDENT ID
DATE OF INTERVIEW
SURVEY MODE
VERSION
START TIME
FINISH TIME
DURATION

INTRODUCTION

Water Resources South East (WRSE) is a partnership of the six water companies that supply water to around 20 million people in the South East of England.

MAP 1: THUMBNAIL ROLLOVER - MAP OF SE ENGLAND AND 6 COMPANY AREAS SHOWN

The role of WRSE is to develop the long-term plan for managing water supplies in the region, taking into account expected population growth, changes in climate, and the possibility of extreme events such as long dry periods and drought. The plan will set out the actions and investments that are needed from 2025 to 2100 to ensure there is a secure water supply system for everyone in the South East of England. This includes measures to reduce leaks, help households and businesses save water, and increase the amount of water available for supply.

Your responses to this survey will help WRSE understand customer views on some of the important choices for putting together the best long-term plan for the region. Your views, along with input from other organisations - public bodies, other water users including farming and industry, and interest groups - will help shape the approach that is taken forward.

The survey will take about 20 minutes to complete and it is important that as many people as possible complete it. All answers that you give will be treated in confidence. The information we collect will be used for research purposes only and the data will be analysed at an overall level. It will not be possible to identify any particular individual or address in the results.

Our privacy policy which outlines how we collect and use your information can be viewed here.

LINK TO SURVEY ENGINE PRIVACY POLICY.

ROUTING FOR QUOTA AND SCREENING QUESTIONS (SECTION A)

SECTION A1 – ASK ALL HOUSEHOLD RESPONDENTS

SECTION A2 – ASK ALL NON-HOUSEHOLD RESPONDENTS

SECTION A1: RESPONDENT SCREENING & QUOTAS (HOUSEHOLD)

HOUSEHOLD RESPONDENTS ONLY (Q1 – Q9)

Q1. Please can you confirm your full postcode (e.g. LS4 5AB, M18 2SE)? This will help us confirm your water services supply company and the area where you live.

WRSE is working with a partner agency, Survey Engine, who host this survey, collate your responses and store them. Your postcode information will only be used to determine your water supply company. It will not be stored and it will not be passed on to any other party. Survey Engine adhere to the General Data Protection Regulation (GDPR) and secure handling of data. To read more about Survey Engine and to view their privacy policy, including how your data is used please click HERE. LINK TO SURVEY ENGINE PRIVACY POLICY

Please enter your home postcode below:

RESPONSE OPTIONS
1 FULL POSTCODE – VALIDATE AGAINST LOOK-UP LIST
2 I don't want to give my postcode SKIP TO Q3

AUTOCODE WATER COMPANY
AUTOCODE WRZ
AUTOCODE WRZ GEOGRAPHIC AREA
RECORD SECTOR LEVEL POSTCODE

DISPLAY BASED ON POSTCODE LOOK-UP

Q2. Please confirm the following are correct:

A **Your water services supply company is** [WATER COMPANY FROM LOOK-UP]
B **You live in** [WRZ GEOGRAPHIC AREA FROM LOOK-UP]

MAP 2: DISPLAY MAP WITH WRZ HIGHLIGHTED

RESPONSE OPTIONS
1 YES
2 NO

Q3. ASK IF Q2A = 2 **Which company is your water services supplier?**

SINGLE CODE

1	Affinity Water	CONTINUE
2	Portsmouth Water	CONTINUE
3	SES Water	CONTINUE
4	Southern Water	CONTINUE
5	South East Water	CONTINUE
6	Thames Water	CONTINUE
7	Other	THANK & CLOSE
8	Don't know	THANK & CLOSE

Q4. SHOW IF Q2B = 2 **Please select the area where you live:**

DISPLAY MAP2 WITH WRZ NUMBERS

RESPONDENT TO SELECT AREA FROM DROPDOWN LIST

1	1 – Hampshire	CONTINUE
2	2 – Isle of Wight	CONTINUE
3	3 – Sussex North	CONTINUE
4	4 – Sussex Brighton/Worthing	CONTINUE
5	5 – Sussex Hastings	CONTINUE
6	6 – Kent Medway	CONTINUE
7	7 – Kent Thanet	CONTINUE
8	8 – Portsmouth	CONTINUE
9	9 – Bracknell	CONTINUE
10	10 – Farnham	CONTINUE
11	11 – Haywards Heath	CONTINUE
12	12 – Eastbourne	CONTINUE
13	13 – Tunbridge Wells	CONTINUE
14	14 – Maidstone/Cranbrook	CONTINUE
15	15 – Ashford	CONTINUE
16	16 – Folkestone/Dover	CONTINUE
17	17 – East Surrey	CONTINUE
18	18 – Northeast London	CONTINUE
19	19 – Southeast London	CONTINUE
20	20 – West London	CONTINUE
21	21 – Swindon and Oxfordshire	CONTINUE
22	22 – Slough, Wycombe and Aylesbury	CONTINUE
23	23 – Reading	CONTINUE
24	24 – Henley	CONTINUE

25	25 – Guildford	CONTINUE
26	26 – Hemel Hempstead and Rickmansworth	CONTINUE
27	27 – Harpenden, St. Albans and Edgware	CONTINUE
28	28 – Stevenage/Luton	CONTINUE
29	29 – Uxbridge, Northolt and Barnet	CONTINUE
30	30 – Epping, Harlow and Saffron Walden	CONTINUE
31	31 – Woking, Weybridge and Staines	CONTINUE
32	My area is not shown	THANK & CLOSE

NEW SCREEN - RESPONDENT QUOTA QUESTIONS

Q5. Are you responsible for paying the utilities' bills in your household (such as water, electricity, and gas), or are you jointly responsible with someone else?

SINGLE CODE

1	Solely responsible	CONTINUE
2	Jointly responsible	CONTINUE
3	Not responsible	THANK & CLOSE
4	Don't know	THANK & CLOSE

Q6. Please can you indicate your age:

SINGLE CODE

1	16-17	THANK & CLOSE
2	18-24	CONTINUE
3	25-30	CONTINUE
4	31-44	CONTINUE
5	45-54	CONTINUE
6	55-64	CONTINUE
7	65-74	CONTINUE
8	75+	CONTINUE

AUTOCODE AGE QUOTAS

Q7. Please indicate your gender:

SINGLE CODE

1	Male	
2	Female	
3	I prefer to identify another way	
4	Prefer not to say	

Q8. Are you the main income earner in your household?

SINGLE CODE

1	Yes	ASK Q9
2	No	ASK Q9
3	No income earners	AUTOCODE Q9 = 6 AND SKIP TO Q10

Q9. ASK IF CODE 1 OR 2 AT Q8 **Main income earner's occupation (if main income earner is retired, select occupation before retirement).**

Rollover each occupation type for more information.

ROLLOVER 1: MORE INFORMATION ON OCCUPATION

SINGLE CODE

1	Higher managerial, administrative or professional	A
2	Intermediate managerial, administrative or professional	B
3	Supervisory or clerical and junior managerial, administrative or professional	C1
4	Skilled manual worker	C2
5	Semi or unskilled manual worker	D
6	Casual worker, dependent on state pension only, or dependent on state welfare	E

SKIP TO SECTION B1

SECTION A2: RESPONDENT SCREENING & QUOTAS (NON-HOUSEHOLD)

NON-HOUSEHOLD RESPONDENTS ONLY (Q10-15)

NEW SCREEN; TIME STAMP

Q10. Please can you confirm that you are the person who is responsible for your organisation's decision-making with respect to utility services, and in particular water and wastewater services?

Please answer all questions in this survey on behalf of your organisation.

RESPONSE OPTIONS

1	YES	CONTINUE
2	NO	THANK & CLOSE

Q11. Please can you confirm the full postcode of your organisation (e.g. LS4 5AB, M18 2SE)? This will help us confirm your water services supply company and the area where your organisation is based.

If your organisation has multiple sites, please provide the location where you are based.

WRSE is working with a partner agency, Watermelon Research (a VCCP Group Company), who host this survey, collate your responses and store them. The postcode of your organisation postcode will only be used to determine its water supply company, will not be stored and will not be passed on to any other party. All companies adhere to the GDPR and DPA 2018 and secure handling of data. You can also find out more information about Market Research companies by calling the Market Research Society freephone number on 0800 9759596 to check out what we do. To read more about Watermelon Research and to view their privacy policy, including how your data is used please click HERE.

Please enter your home postcode below:

RESPONSE OPTIONS

1	FULL POSTCODE – VALIDATE AGAINST LOOK-UP LIST
2	I don't want to give my postcode

AUTOCODE WATER COMPANY
AUTOCODE WRZ
AUTOCODE WRZ GEOGRAPHIC AREA
RECORD SECTOR LEVEL POSTCODE

DISPLAY BASED ON POSTCODE LOOK-UP

Q12. Please confirm the following are correct:

A **Your organisation's water services supply company is** [WATER COMPANY FROM LOOK-UP]
B **Your organisation is based in** [WRZ GEOGRAPHIC AREA FROM LOOK-UP]

RESPONSE OPTIONS
1 YES
2 NO

Q13. ASK IF Q12 = 2 **Which company is your organisation's water services supplier?**

SINGLE CODE

1	Affinity Water	CONTINUE
2	Portsmouth Water	CONTINUE
3	SES Water	CONTINUE
4	Southern Water	CONTINUE
5	South East Water	CONTINUE
6	Thames Water	CONTINUE
7	Other	THANK & CLOSE
8	Don't know	THANK & CLOSE

Q14. SHOW IF Q12 = 2 **Please select the area where your organisation is based:**

If your organisation has multiple sites, please answer for the location where you are based.

DISPLAY MAP OF SOUTH EAST OF ENGLAND WITH WRZ NUMBERS

RESPONDENT TO SELECT AREA FROM DROPDOWN LIST (TO ADD)

1	1 – Hampshire	CONTINUE
2	2 – Isle of Wight	CONTINUE
3	3 – Sussex North	CONTINUE
4	4 – Sussex Brighton/Worthing	CONTINUE
5	5 – Sussex Hastings	CONTINUE
6	6 – Kent Medway	CONTINUE
7	7 – Kent Thanet	CONTINUE
8	8 – Portsmouth	CONTINUE
9	9 – Bracknell	CONTINUE
10	10 – Farnham	CONTINUE
11	11 – Haywards Heath	CONTINUE
12	12 – Eastbourne	CONTINUE
13	13 – Tunbridge Wells	CONTINUE

14	14 – Maidstone/Cranbrook	CONTINUE
15	15 – Ashford	CONTINUE
16	16 – Folkestone/Dover	CONTINUE
17	17 – East Surrey	CONTINUE
18	18 – Northeast London	CONTINUE
19	19 – Southeast London	CONTINUE
20	20 – West London	CONTINUE
21	21 – Swindon and Oxfordshire	CONTINUE
22	22 – Slough, Wycombe and Aylesbury	CONTINUE
23	23 – Kennet Valley	CONTINUE
24	24 – Henley	CONTINUE
25	25 – Guildford	CONTINUE
26	26 – Hemel Hempstead and Rickmansworth	CONTINUE
27	27 – Harpenden, St. Albans and Edgware	CONTINUE
28	28 – Stevenage/Luton	CONTINUE
29	29 – Uxbridge, Northolt and Barnet	CONTINUE
30	30 – Epping, Harlow and Saffron Walden	CONTINUE
31	31 – Woking, Weybridge and Staines	CONTINUE
32	The area is not shown	THANK & CLOSE

NEW SCREEN - RESPONDENT QUOTA QUESTIONS

Q15. What is the main activity of your organisation?

SINGLE CODE – RECORD

1	Agriculture, forestry & fishing
2	Mining and quarrying
3	Manufacturing
4	Electricity, gas, steam and air conditioning supply
5	Water supply, sewerage, waste management and remediation activities
6	Construction
7	Wholesale and retail trade, repair of motor vehicles and motorcycles
8	Transport & storage (warehousing)
9	Accommodation & food services activities
10	Information & communication
11	Finance & insurance activities
12	Real estate activities
13	Professional, scientific & technical activities
14	Administrative and support service activities
15	Public administration & defence; compulsory social security
16	Education
17	Human health and social work activities
18	Arts, entertainment, recreation

19 Other service activities
20 Activities of households as employers (undifferentiated goods and services producing activities of households for own use)
21 Activities of extraterritorial organisations and bodies

AUTOCODE SECTOR

1	Primary industry, such as agriculture and mining	CODE 1 - 2
2	Secondary industry, such as manufacturing and construction	CODE 3 - 6
3	Tertiary industry, such as retail and services	CODE 7 – 21

GO TO SECTION B1

SECTION B1: INTRODUCTION TO THE REGIONAL PLAN

HOUSEHOLD AND NON-HOUSEHOLD RESPONDENTS

TIME STAMP

SEE SLIDES 7-10

NEW SCREEN – SLIDE 10

Q16. How aware were you of the four main factors that are putting pressures on the water supply system in the South East of England?

FACTOR DESCRIPTIONS PROVIDED ON ROLLOVERS (2 – 5)

RESPONSE OPTIONS

A Very aware
B Somewhat aware
C Not at all aware
D Don't know

FACTORS TO LIST WITH ROLLOVERS
ROTATE

1	Population growth	ROLLOVER 2
2	Climate change	ROLLOVER 3
3	Drought resilience	ROLLOVER 4
4	Protecting the environment	ROLLOVER 5

SECTION B2: PREFERRED PLAN

BOTH THE HOUSEHOLD AND NON-HOUSEHOLD RESPONDENTS

TIME STAMP

SEE SLIDES 11 – 38 FOR LAYOUT

SLIDE 33

Q17. Which option do you prefer for the plan?

OPTION CARDS 1 (source_option1.png) AND 2 (source_option2.png)
ROTATE ONSCREEN POSITION
RECORD SEQUENCE

SINGLE CODE
1 OPTION A
2 OPTION B
3 Don't know

SLIDE 35

Q18. Which option do you prefer for the plan?

OPTION CARDS 3 (schemes_option1.png) AND 4 (schemes_option2.png)
ROTATE ONSCREEN POSITION
RECORD SEQUENCE

SINGLE CODE
1 OPTION A
2 OPTION B
3 Don't know

SLIDE 37

Q19. In which of the following circumstances would you find it acceptable to reduce your water use in the future?

RESPONSE OPTIONS
A Must be in place
B Should be in place
C Doesn't matter either way
D Doesn't need to be in place

STATEMENTS
ROTATE

A Government introducing new legislation to promote the efficient use of water (water efficiency labels, standards for new homes)
B Water companies reducing leaks to meet their stated targets by 2050
C Water tariffs in place (this involves charging customers who use more water higher amounts for their water use)
D New transfers of water from outside of the region
E Small number of large schemes that supply customers from multiple companies

SECTION C: CUSTOMER PREFERENCES AND FOLLOW-UPS

HOUSEHOLD AND NON-HOUSEHOLD RESPONDENTS

NEW SCREEN – COMPARATIVE VIEW

Thank you for answering those questions. In the next part of the survey, you will be asked to make a few more choices about the possible balance of the plan.

As a minimum, the long-term plan for managing water supplies in the South East will:

- **Insure against severe water shortages due to extreme drought – reducing the risk of emergency measures to 1 in 500 for any one year**
- **Help protect the environment by taking less water from sensitive river habitats in the region in normal times**
- **Reduce water leakage from the supply network in region by 50% from current levels by 2050**
- **Help customers use less water including providing more water saving devices and working with manufactures to improve the water efficiency of appliances and builders to make new homes more water efficient**

The overall cost of the long-term plan will depend on the options and investments that are eventually put forward.

On the next screen, you will be shown some alternative plans and asked which you prefer most, 2nd most, 3rd most, and so on.

There will be 5 plans to compare. When answering, please take your time to carefully read the descriptions that are provided for each option.

Q20. Which plan do you prefer most?

USE PROGRESSIVE RESPONSE FORMAT [BEST / 2ND BEST / 3rd BEST / 4th BEST / 5th BEST]
FIRST PREFERENCE QUESTION **Which plan do you prefer most?**
SECOND PREFERENCE QUESTION **Of the remaining options, which plan do you prefer most?**
THIRD PREFERENCE QUESTION **Of the remaining options, which plan do you prefer most?**
FORTH PREFERENCE QUESTION **Of the remaining options, which plan do you prefer most?**

SHOW HOUSEHOLD AND NON-HOUSEHOLD RESPONDENTS THE SAME VERSIONS OF THE PLAN
POSITION OF ALTERNATIVE PLANS TO BE RANDOMISED
RECORD ONSCREEN SEQUENCE
RECORD FULL PREFER ORDERING FROM PROGRESSIVE CHOICES
RECORD CHOICE TIME

RESPONSE CODING TBC

Q21. In making your choices, which aspect of the plan was...

RESPONSE OPTIONS

1	Most important to you
2	Second most important to you
3	Third most important to you
4	Fourth most important to you
5	Least important to you

ASPECTS OF THE PLAN

A	Where the water coming from (the mix of schemes)
B	Resilience to unexpected events
C	Carbon emissions
D	Impact on water use and lifestyle change
E	Higher water efficiency standards from Government

Q22. ~~XXX~~
Q23. ~~XXX~~

You will now be shown the same five plans, but this time with possible costs to customers in terms of the impact on household water bills.

Again, you will be asked which you prefer most, 2nd most, 3rd most, and so on.

Before making your choices, please read this important information:
THUMBNAIL ROLLOVER: SHOW HOUSEHOLD VERSION OF BILL IMPACT SHOWCARD TO HOUSEHOLD RESPONDENTS; NON-HOUSEHOLD VERSION OF BILL IMPACT SHOWCARDTO NON-HOUSEHOLD

RESPONDENTS

Q24. Which plan do you prefer most?

USE PROGRESSIVE RESPONSE FORMAT [BEST / 2ND BEST / 3rd BEST / 4th BEST / 5th BEST]
FIRST PREFERENCE QUESTION **Which plan do you prefer most?**
SECOND PREFERENCE QUESTION **Of the remaining options, which plan do you prefer most?**
THIRD PREFERENCE QUESTION **Of the remaining options, which plan do you prefer most?**
FORTH PREFERENCE QUESTION **Of the remaining options, which plan do you prefer most?**

SHOW BILL IMPACT FOR EACH PLAN – RANDOM SELECTION FROM PRICE VECTOR
RECORD BILL IMPACT DISPLAYED FOR EACH PLAN
POSITION OF ALTERNATIVE PLANS TO BE SAME AS Q20
RECORD ONSCREEN SEQUENCE
RECORD FULL PREFER ORDERING FROM PROGRESSIVE CHOICES
RECORD CHOICE TIME

RESPONSE CODING TBC

Q25. In making your choices, which aspects of the plan was...

RESPONSE OPTIONS

1 Most important to you
2 Second most important to you
3 Third most important to you
4 Fourth most important to you
5 Fifth most important to you
6 Least important to you

ASPECTS OF THE PLAN

A Where the water coming from (the mix of schemes)
B Resilience to unexpected events
C Carbon emissions
D Impact on water use and lifestyle change
E Higher water efficiency standards from Government
F Impact on customer bills

Q26. Thank you for answering those questions. Considering the information and instructions provided, how easy or difficult was it to make your choices about the options for the plan you preferred?

SINGLE CODE

1	Very easy	GO TO Q28
2	Fairly easy	GO TO Q28
3	Neither easy nor difficult	GO TO Q28
4	Fairly difficult	ASK Q27
5	Very difficult	ASK Q27

Q27. ASK IF CODE 4 OR 5 AT Q26 **Was it difficult to answer because...?**

1 It was hard to decide what was most important
2 Not enough information was provided about the choices to help you answer
3 The instructions for the questions were not clear
4 Other (please state)

Q27a. What was your main reason for choosing your most preferred plan? Please respond based on the second choice you made, where the possible impact on customer bills was included.

OPEN RESPONSE

Q27b. If your most preferred plan was implemented, would you support it?

SINGLE CODE

1 Yes
2 No
3 Don't know

Q27c. ASK IF CODE 2 OR 3 AT Q29. **Can you briefly explain why you can't say yes to supporting the plan?**

OPEN RESPONSE

ROUTING FOR RESPONDENT PROFILE QUESTIONS (SECTION D)

SECTION D1 – ASK ALL HOUSEHOLD RESPONDENTS

SECTION D2 – ASK ALL NON-HOUSEHOLD RESPONDENTS

SECTION D1: RESPONDENT PROFILE (HOUSEHOLD)

TIME STAMP

HOUSEHOLD RESPONDENTS ONLY (Q28 – Q41)**Thank you for answering those questions. The final part of the survey is about you and your household. This information will help check that we have surveyed a range of customers.**

Q28. How long have you lived in the WRSE region?

DISPLAY WRSE THUMBNAIL AND ROLLOVER MAP

SINGLE CODE
1 Less than 1 year
2 2 years
3 3 – 5 years
4 6 – 10 years
5 11 – 20 years
6 21 – 30 years
7 More than 30 years
8 Prefer not to say

Q29. Does your property have a water meter?

SINGLE CODE
1 Yes
2 No
3 Don't know

Q30. Do you live in...?

SINGLE CODE
1 City or town centre (i.e. close to main retail and commercial areas)
2 Suburbs or housing development on edge of town or city (i.e. mostly residential area)
3 Mainly rural area (i.e. countryside or small settlement; fewer than 10,000 people)
4 Other [RECORD]

Q31. Which of the following best describes your household?

SINGLE CODE
1 Single working age adult
2 Single retired age adult
3 Two adults of working age
4 Two adults of retired age
5 Two adults, one working age, one retired age
6 More than two adults, no children (below 18 years old)
7 Single parent family with fewer than 3 children (below 18 years old)
8 Two parent family with fewer than 3 children (below 18 years old)
9 Family with 3 or more children (below 18 years old)
10 Other [RECORD]
11 Prefer not to say

Q32. How many people in your household, including yourself, are there in each of the following age groups?

NUMERICAL DROPDOWN (INCLUDE ZERO)

AGE GROUP
1 Up to 5 years (less than 5 years)
2 5 to 15 years
3 16 to 64 years
4 65+ years

NEW SCREEN

Q33. Do any of the following apply to you or any members of your household?

RESPONSE OPTIONS

1 No
2 Yes – me
3 Yes – household member
4 Prefer not to say

VULNERABLE CUSTOMER

1 Have restricted mobility or disability
2 Have chronic illness and/or on dialysis
3 Need a constant supply of water for medical equipment and medication
4 Are blind or partially sighted
5 Are deaf or hard of hearing
6 Have a mental health condition
7 Have additional communication needs (language, dyslexia or learning difficulties)
8 Are of pensionable age
9 Are in a vulnerable situation, e.g. recovering from an operation/accident or just had a baby/have children under 5
10 Are an unpaid carer for a person with any of the above

Q34. All water companies have a Priority Services Register. Have you heard of this?

The Priority Services Register (PSR) is the water company's register of vulnerable customers and offers extra support to customers with additional needs. This support includes communications in Braille, large print or a language other than English, a password system to help protect against bogus callers and extra assistance in the event of water supply interruptions (e.g. bottled water delivered). The register means the water company can identify and respond quickly to the needs of customers who require extra care and they are able to offer extra consideration for those who are older, have a disability or additional needs.

SINGLE CODE

1	Yes	ASK Q35
2	No	SKIP TO Q37
3	Don't know	SKIP TO Q37

Q35. SHOW IF CODE 1 AT Q35 **Is your household registered with your current water supplier(s) Priority Services Register?**

SINGLE CODE

1	Yes	ASK Q36
2	No	SKIP TO Q37
3	Don't know	SKIP TO Q37

Q36. SHOW IF CODE 1 AT Q35 **Please can you indicate the reason(s) that your household is registered on the Priority Services Register?**

MULTICODE

1 Medically dependent on water such as kidney dialysis, medical conditions that require showers or baths to ease conditions or need water to take medication
2 Physical issues, such as limited mobility or have young children that make it difficult to leave the house to collect water supplies from shops or water collection points
3 Need information in alternative formats e.g. large format bills/braille bills
4 Other [RECORD]

NEW SCREEN

Q37. Which of the following best describes your current employment status?

SINGLE CODE

1 Self-employed
2 Employed full-time (30 hours per week or more)
3 Employed part-time (8 – 29 hours per week)
4 Employed working less than 8 hours a week
5 Student
6 Unemployed – seeking work
7 Unemployed – not seeking work/other
8 Looking after the home/children full-time
9 Retired
10 Unable to work due to temporary sickness
11 Unable to work due to long-term sickness or disability
12 Other [RECORD]
13 Prefer not to say

Q38. At what level did you complete your education? If you are still studying, which level best describes the highest level of education you have obtained until now?

SINGLE CODE

1	O levels / CSEs / GCSEs (any grades)
2	A levels / AS level / higher school certificate
3	NVQ (Level 1 and 2). Foundation / Intermediate / Advanced GNVQ / HNC / HND
4	Other qualifications (e.g. City and Guilds, RSA/OCR, BTEC/Edexcel)
5	First degree (e.g. BA, BSc)
6	Higher degree (e.g. MA, PhD, PGCE, post graduate certificates and diplomas)
7	Professional qualifications (teacher, doctor, dentist, architect, engineer, lawyer, etc.)
8	No qualifications
9	Prefer not to say

Q39. Please can you indicate your total household income before tax and other deductions (including pensions)?

Please note this information will be used to check that we have surveyed a range of customers. It will be not be possible to identify any particular individual or address in the results.

SINGLE CODE

	Per month	Per year
1	Up to £499	Up to £5,999
2	£500 - £1,083	£6,000 - £12,999
3	£1,084 - £1,365	£13,000 - £16,385
4	£1,366 - £1,646	£16,386 - £19,747
5	£1,647 - £2,166	£19,748 - £25,999
6	£2,167 - £2,666	£26,000 - £31,999
7	£2,667 - £3,000	£32,000 - £35,999
8	£3,001 - £3,500	£36,000 - £41,999
9	£3,501 - £4,000	£42,000 - £47,999
10	£4,001 - £5,333	£48,000 - £63,999
11	£5,334 - £7,999	£64,000 - £95,999
12	£8,000 and over	£96,000 and over
13	Don't know	
14	Prefer not to say	

Q40. Which the following best describes your ethnic group?

SINGLE CODE

1	White British
2	White Irish
3	Any other White background (please specify)
4	Mixed – White and Black Caribbean
5	Mixed – White and Black African
6	Mixed – White and Asian
7	Any other Mixed background (please specify)
8	Indian
9	Pakistani
10	Bangladeshi
11	Any other Asian background (please specify)
12	Black Caribbean
13	Black African
14	Any other Black background (please specify)
15	Chinese
16	Other [RECORD]
17	Prefer not to say

NEW SCREEN – CURRENT WATER BILL

Q41. What is the total amount your household pays for both water and sewerage services?

A	RECORD AS WHOLE £ PER YEAR
B	APPROX. AMOUNT

SINGLE CODE – RANGES

1	Less than £13 per month	Less than £150 per year
2	£13 - £16 per month	£151 - £200 per year
3	£17 - £20 per month	£201 - £250 per year
4	£21 - £24 per month	£251 - £300 per year
5	£25 - £28 per month	£301 - £350 per year
6	£29 - £32 per month	£351 - £400 per year
7	£33 - £37 per month	£401 - £450 per year
8	£38 - £41 per month	£451 - £500 per year
9	£42 - £45 per month	£501 - £550 per year
10	£46 - £50 per month	£551 - £600 per year
11	More than £50 per month	More than £600 per year
12	Don't know	Don't know

SKIP TO SURVEY CLOSE

SECTION D2: RESPONDENT PROFILE (NON-HOUSEHOLD)

TIME STAMP

NON-HOUSEHOLD RESPONDENTS ONLY (Q42 – Q45)

Thank you for answering those questions. Please could you now answer some final questions about your organisation. This information will help check that we have surveyed a range of customers.

Q42. How many employees are there in your organisation?

Please answer for the total number of employees based in the UK.

SINGLE CODE

1 1-9
2 10-49
3 50-249
4 250+

Q43. How many sites does your organisation have?

DISPLAY WRSE THUMBNAIL AND ROLLOVER MAP

SINGLE CODE

1 1 site
2 2 sites
3 3 – 5 sites
4 6 – 10 sites
5 More than 10 sites
6 Don't know

Q44. What is your organisation's annual turnover?

Please note this information will be used to check that we have surveyed a range of organisations.

SINGLE CODE

1 Up to £49,999
2 £50,000 - £99,999
3 £100,000 - £249,999
4 £250,000 - £499,999
5 £500,000 - £999,999
6 £1,000,000 - £1,999,999
7 £2,000,000 - £4,999,999
8 £5,000,000 - £9,999,999
9 £10,000,000 - £49,999,999
10 £50,000,000 or more

NEW SCREEN – CURRENT WATER BILL

Q45. Approximately how much does your organisation pay for water and sewerage services combined?

Please note this information will be used to check that we have surveyed a range of customers.

A RECORD AS WHOLE £ PER YEAR
B APPROX. AMOUNT

1 Less than £250 per year
2 £251 to £400 per year
3 £401 to £900 per year
4 £901 to £1,400 per year
5 £1,401 to £5,000 per year
6 £5,001 to £10,000 per year
7 £10,001 to £25,000 per year
8 More than £25,000 per year

GO TO SURVEY CLOSE

SURVEY CLOSE

HOUSEHOLD AND NON-HOUSEHOLD RESPONDENTS

Q46. Considering all of the information that you have been given, overall, how easy or difficult was it to answer the questions in this survey?

SINGLE CODE
1 Very easy
2 Fairly easy
3 Neither easy nor difficult
4 Fairly difficult
5 Very difficult
6 Don't know / prefer not to say

Q47. Finally, did you think this survey was (select all that apply):

MULTICODE
1 Interesting
3 Too long
4 Difficult to understand [RECORD]
5 Educational
6 Unrealistic / not credible
7 Other [RECORD]
8 None of these

That's the end of the survey; please ensure you click on the continue button to submit your answers. Thank you for your time and help, it is very much appreciated.

SHOW FOR HOUSEHOLD RESPONDENTS ONLY

Priority Services Register

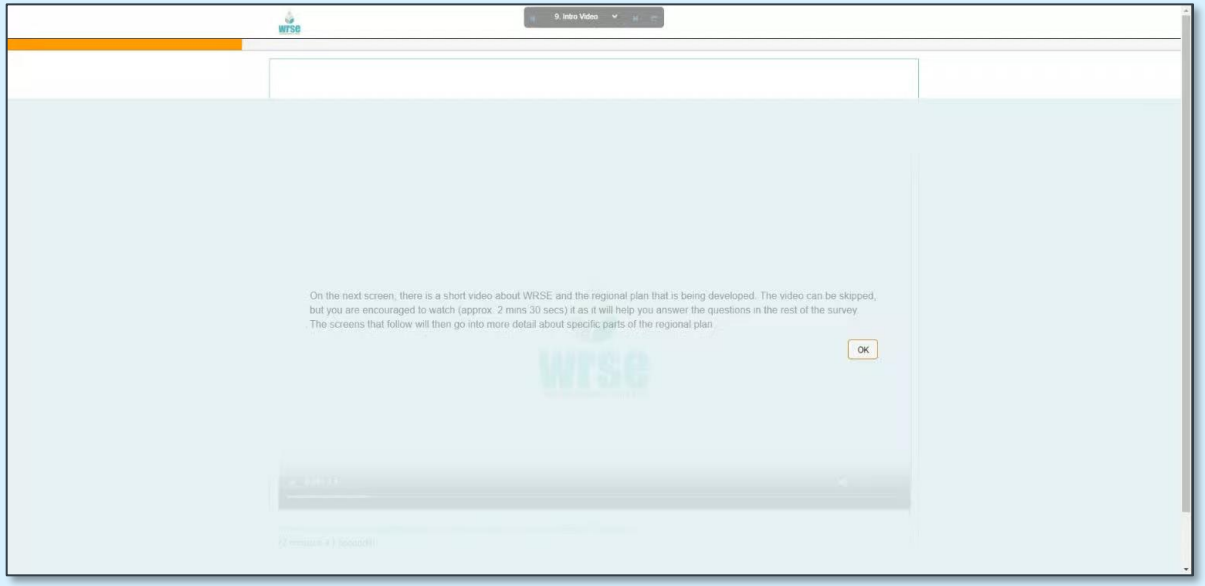
More information about the Priority Services Register and other support that may be available, is provided here:
https://www.ccwater.org.uk/households/extra-free-help-priority-services/

TIME STAMP

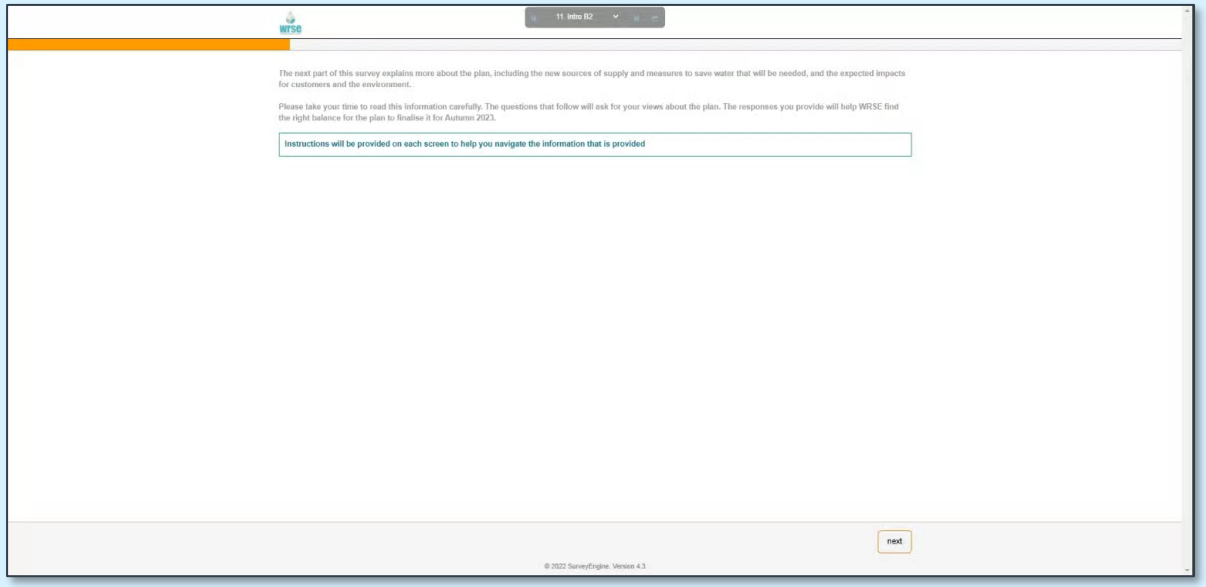
Appendix 3
Questionnaire layout

- The document presents an annotated version of on-screen layout of the survey for Sections B and C.
- The videos provide a walkthrough of each section:

Section B1



Section B2 and C



Hoover over the video to make the play button appear

Introduction	▪ Purpose of survey
A. Screening and quotas	▪ Household: location, bill payer, age, gender, SEG ▪ Non-household: water company, sector
B1. Introduction to regional plan	▪ Short explanatory video and awareness of key drivers for the regional plan (climate, pop., env. ambition, resilience)
B2. Regional plan	▪ Profile (schemes, transfer, d. management) and outcomes (customer impacts, resilience, environment)
C. Customer preferences	▪ Preferred plan profile (with and w/out bill impact)
D. Respondent profile	▪ Household: socio-economic and demographic ▪ Non-household: size, location
Close	▪ Further information

The following provides more details on content and design of Sections B1, B2 and C.

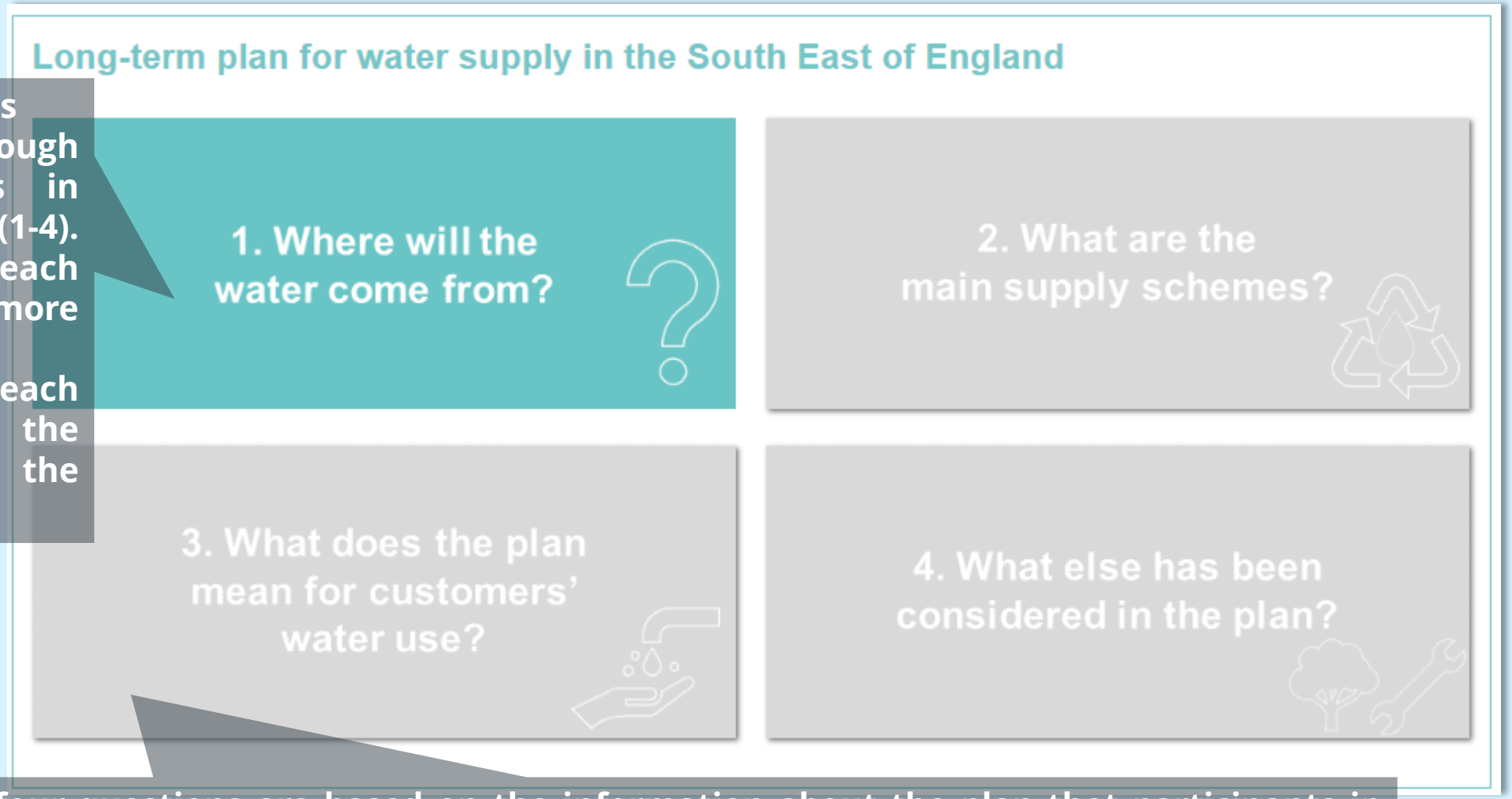
Section B1: Introducing the regional plan

Video introducing the long-term plan and key drivers for the regional plan. Video was tested and edited as part of the 2021 research with customers.

Respondents are able to skip this video – to help minimise drop-outs from the survey - but are encouraged to watch it as it will help them answer questions in the rest of the survey.

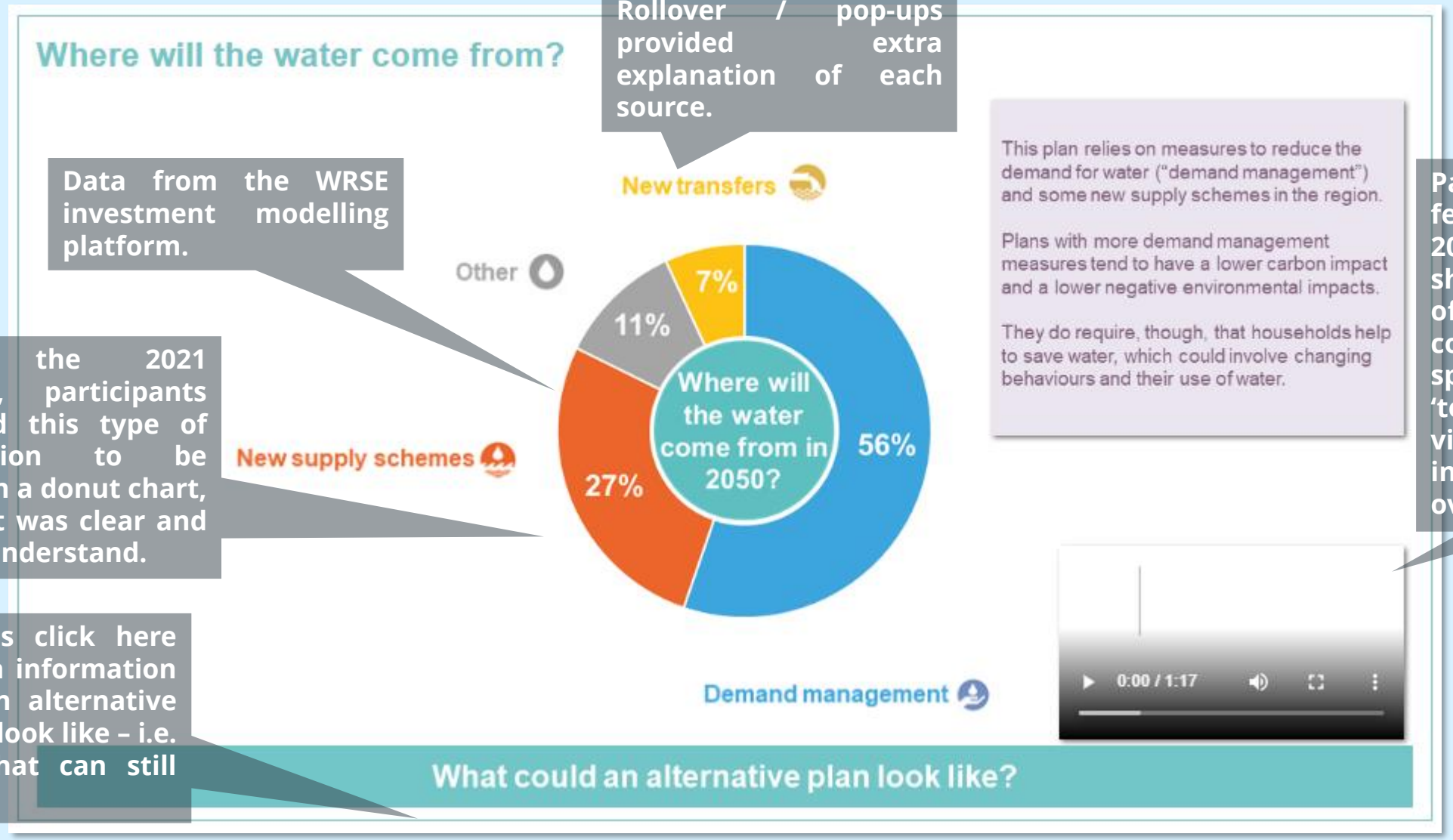
Introduction to the long-term plan for water supply in the South East of England
(2 minutes 43 seconds)

Respondents click through these tiles in order (1-4). “Behind” each tile is more information about each aspect of the regional the plan.



The four questions are based on the information about the plan that participants in the 2021 research stated was most important to see and understand when asked whether or not they would support the plan

Section B2: Where will the water come from?



Rollover / pop-ups provided extra explanation of each source.

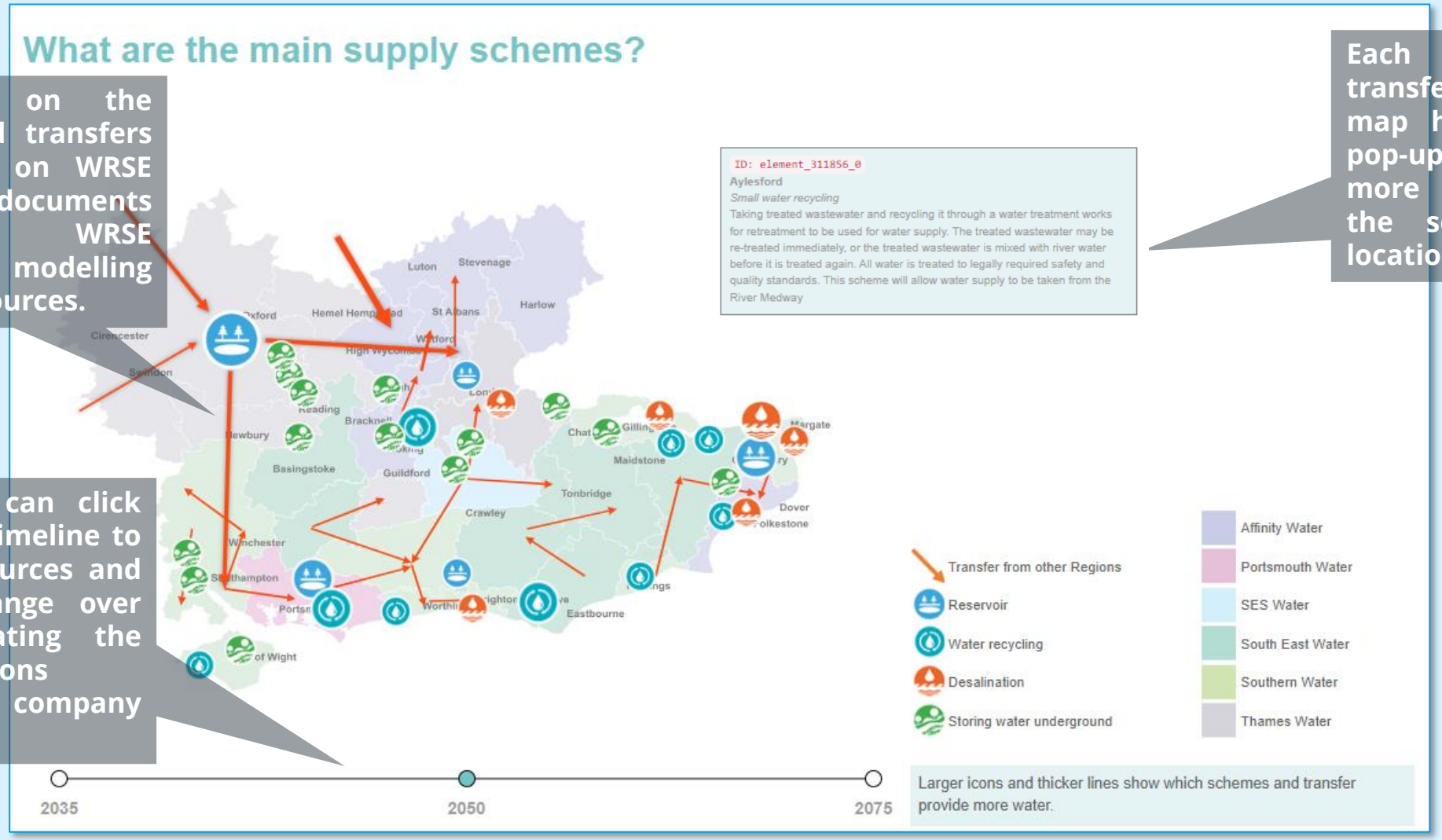
Data from the WRSE investment modelling platform.

During the 2021 research, participants preferred this type of information to be shown on a donut chart, stating it was clear and easy to understand.

Respondents click here to get extra information on what an alternative plan would look like – i.e. "choices" that can still be made.

Participant's feedback from the 2021 research showed that some of the video content could be split into shorter 'tell me more' videos to avoid information overload.

Section B2: What are the main schemes?



Information on the schemes and transfers from based on WRSE consultation documents and the WRSE investment modelling platform resources.

Each scheme and transfer shown on the map has a rollover / pop-up that provides more information on the scheme and its location.

Respondents can click through the timeline to see how resources and transfers change over time, illustrating the inter-connections between company areas

Section B2: What does it mean for customers?

The 2021 research found that information on demand management measures and the impact on customers' use of water was an important aspect of plan to give to respondents.

These card "flip" to provide more information about measures and reduced water use.

Water use calculator used to translate reduction (litres per week) to easier reference points for respondents.

Section B2: What does it mean for customers?

Further information illustrates the impact of more intense demand management measures, based on Gov C profile.

What does it mean for customers?

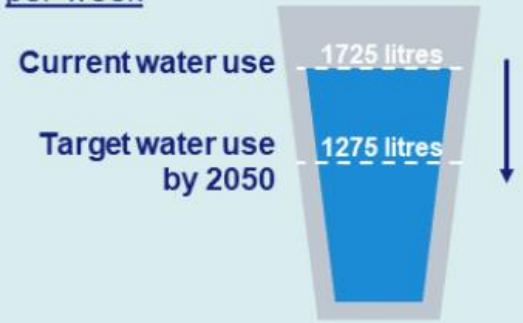
How water will be saved

An alternative plan could require even more water to be saved.

This would need extra effort, with new measures to reduce water use introduced sooner. For example, new houses would be built to be more water efficient and shops would have more options for replacement taps, showers with lower flow rates, and toilets with dual flush.

The reduction in water use needed is equivalent to 24% less per household

Water use by average household per week



450 litres per week saved by 2050

(24% reduction)

For the average household, this is equivalent to...

22 fewer flushes per week (165 litres)

+

2 fewer showers per week (80 litres)

+

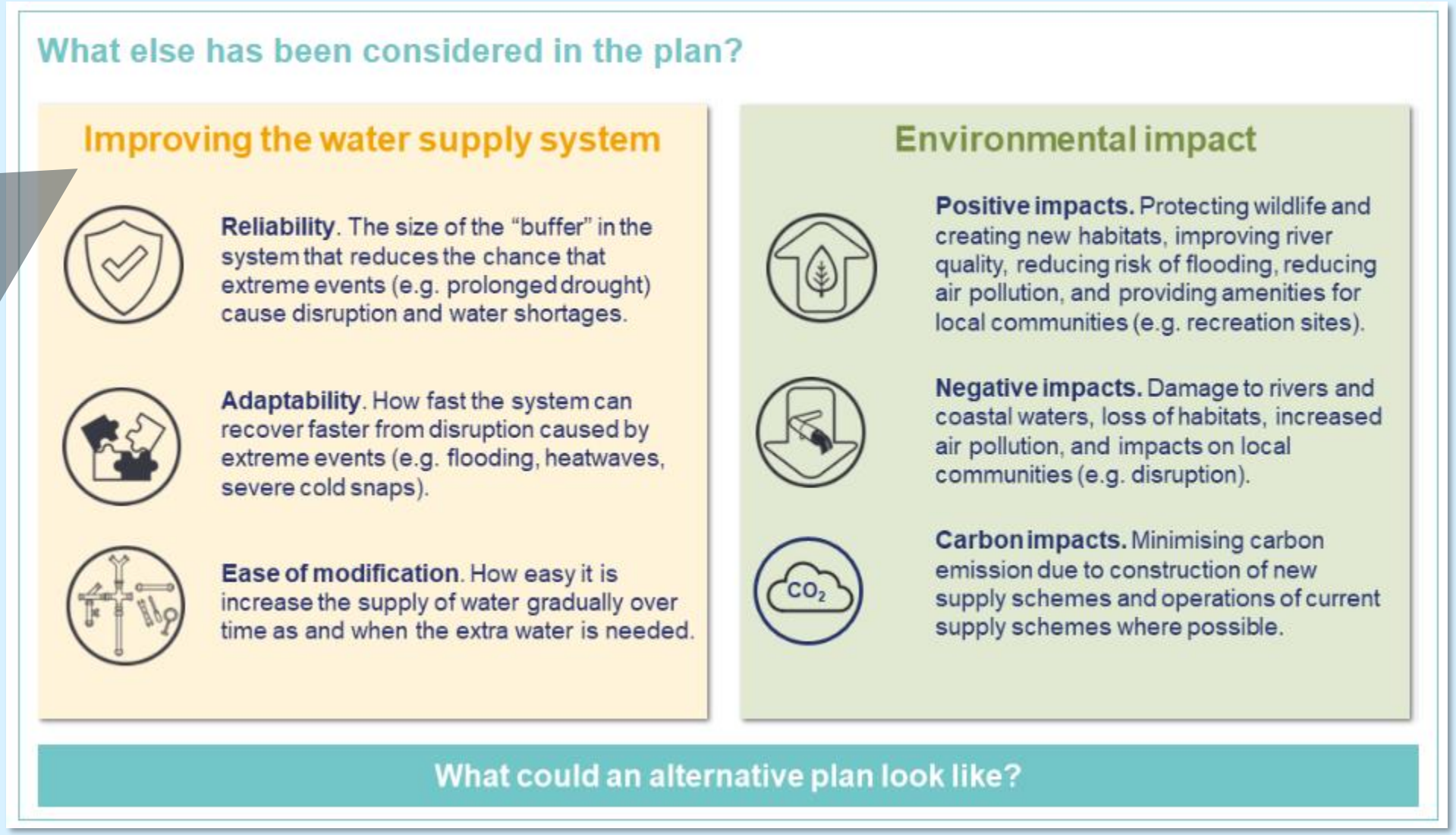
3 fewer runs per week (210 litres)

What will the plan look like?

Section B2: What are the other considerations?

The final content shown to respondents includes high level notes on building resilience into the plan along with explaining that environmental impacts have been taken into account as well.

Both aspects were found to be important in the 2021 research, helping to give respondents a rounded view on the approach taken to develop the regional plan.

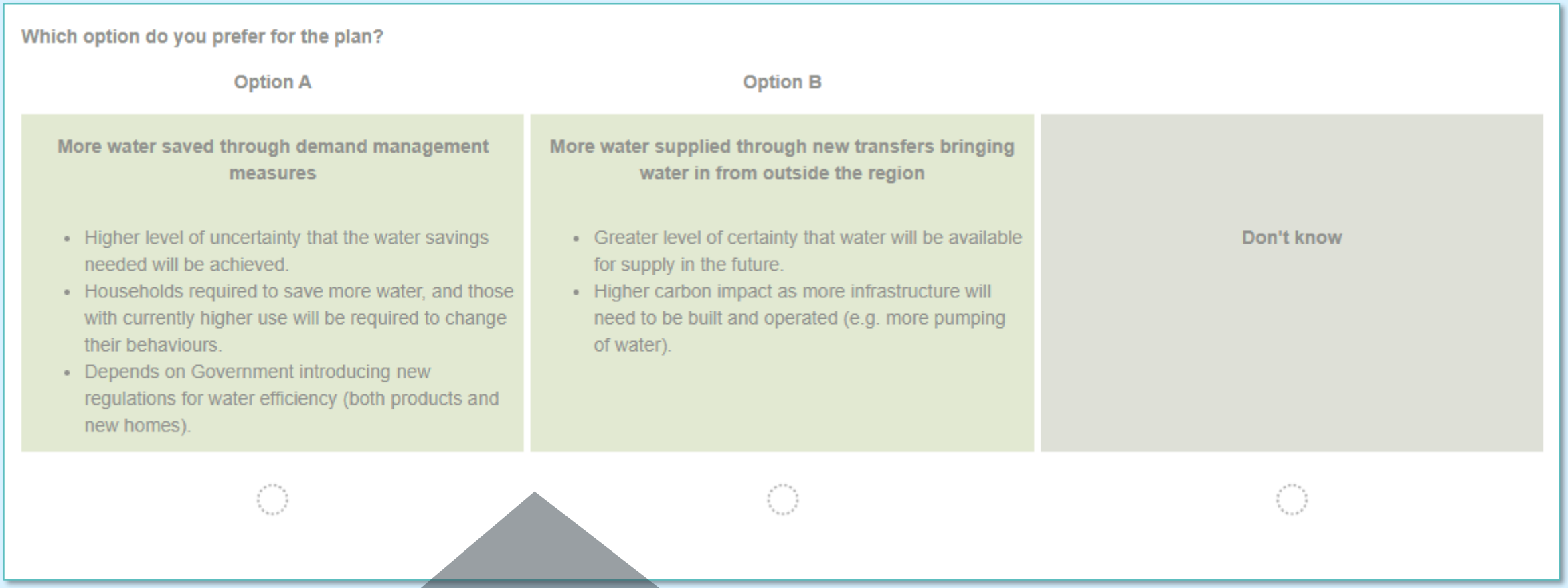


SECTION B2: FOLLOW-UP QUESTIONS

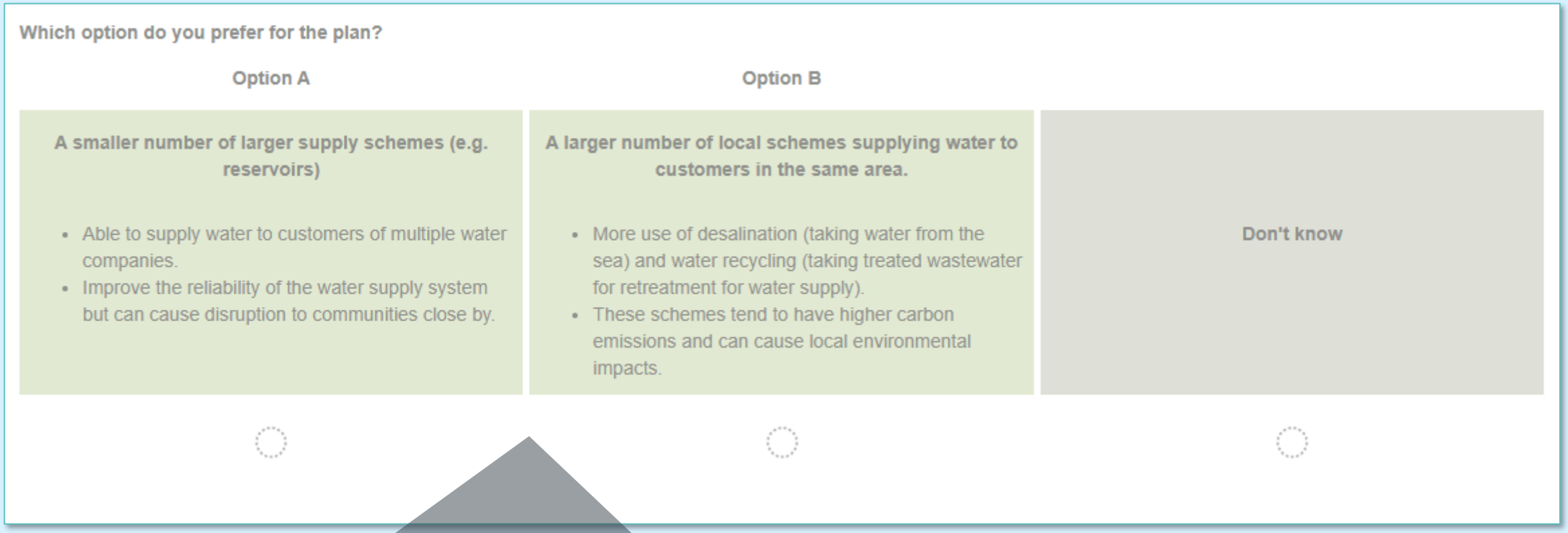
1. Where will the water come from?	**Question**: Preference between more water saved through demand management measures and more water supplied through new transfers.
2. What are the main supply schemes?	**Question**: Preference between a smaller number of larger supply schemes and a larger number of local schemes.
3. What does the plan mean for customers' water use?	**Question:** Circumstances respondents would you find it acceptable to reduce water use in the future
4. What else has been considered in the plan?	**Question**: Preference between a smaller number of larger supply schemes and a larger number of local schemes.

The initial follow-up questions are intended to prompt respondent thinking about the regional plan and some of the choices to be made and what they may prefer based on the information given about the regional plan.

These questions are a warm-up to the choice exercises. The responses provide attitudinal data that can be used to test the consistency of the choice exercise responses.



Question to prompt thinking about the choice between a plan with more <u>demand management</u> focus (which would directly impact people's lives and have more uncertainty that water availability targets would be met) versus a plan with <u>more transfers</u> (which would have higher carbon impacts but more certainty water supply targets would be met).



Question to thinking about the choice between a plan a smaller with a smaller number of strategic (large) supply schemes (e.g. the main reservoir options) versus a plan with a larger number of local supply schemes, which would typically require more re-use and desalination options.

In which of the following circumstances would you find it acceptable to reduce your water use?

Select one response from each row

	Must be in place	Should be in place	Doesn't matter either way	Doesn't need to be in place
Government introducing new legislation to promote the efficient use of water (water efficiency labels, standards for new homes)	○	○	○	○
Water companies reducing leaks to meet their stated targets by 2050	○	○	○	○
Water tariffs in place (this involves charging customers who use more water higher amounts for their water use)	○	○	○	○
New transfers of water from outside of the region	○	○	○	○
Small number of large schemes that supply customers from multiple companies	○	○	○	○

Further prompts to reinforce different aspects and choices concerning the profile of the regional plan and how strongly respondents feel about each, given that reductions in household water use that may be required.

Section C: Customer preferences - plans

- The profiles of the five alternative plans presented in choice exercises are aligned to specific model runs and scenarios from the WRSE IVM.
- An initial “long-list” of 8 plans was selected in consultation with WRSE. This was reduced to 5 plans following analysis and testing (incl. in cognitive interviews) to determine the subset that presented sufficient variation that respondents could see meaningful differences (e.g. a “choice”).
- To manage the uncertainty of future events, WRSE has undertaken an adaptive planning approach. The approach helps to look ahead at a range of different futures so the plan can be developed as needed. Each plan has 9 different branches over the planning period (2025- 2075), with each branch potentially having different schemes included or excluded.

Plan	Label in survey	Example schemes (no. branches)
Least cost	“Mix of schemes”	SESRO (9), Teddington (9), STT (2), GUC (9), Blackstone (5)
Best value	“More resilient”	SESRO (9), Teddington (9), STT (2), GUC (9), Blackstone (4)
Best environmental and societal value	*Not included in survey*	SESRO (9), Teddington (9), STT (2), GUC (9), Blackstone (4)
Exclude SESRO	“More transfers, fewer reservoirs”	SESRO (0), Teddington (9), STT (7), GUC (9), Blackstone (6)
Exclude STT	*Not included in survey*	SESRO (9), Teddington (9), STT (0), GUC (9), Blackstone (5)
Accelerated demand management for PCC 110 l/p/d (Gov C)	“More demand management”	SESRO (9), Teddington (9), STT (1), GUC (9), Blackstone (6)
Exclude Government led demand management (water labelling) (Gov H)	“Less Government intervention”	SESRO (9), Teddington (9), STT (2), GUC (9), Blackstone (5)
1:200 Resilience	*Not included in survey*	SESRO (9), Teddington (2), STT (1), GUC (9), Blackstone (6)

- Profile of the IVM outputs and metrics used to compare and contrast the alternatives plans:

Metric	Plans featured in the choice exercises					Variation*		
	Best value	Least cost	Gov C	Excluding SESRO	Gov H	Average	Minimum	Maximum
Reliability (metric)	42	38	38	35	38	38	35	42
Adaptability (metric)	21	19	19	18	19	19	18	21
Evolvability (metric)	30	27	27	27	26	27	26	30
Average	31	28	28	27	28	28	27	31
Carbon (t)	5,744,519	5,610,401	4,875,008	5,806,262	5,824,165	5,572,071	4,875,008	5,824,165
Environmental benefit (metric)	83,476	84,475	84,166	87,169	87,191	85,295	83,476	87,191
Environmental disbenefit (metric)	112,972	115,629	111,190	127,518	121,199	117,702	111,190	127,518

* Variation: summarises the range of values for each metric, vs. the average across the five short-listed plans.

- Two sequential (progressive) choice exercises:
    1. Preference for alternative plans without bill impact – “unconstrained” preferences based on profile of each plan (mix of schemes and impacts)
    2. Preference for alternative plans with (randomised) bill impact – “constrained” preferences reflecting trade-off between increased/decreased bill amounts and profile of each plan

- The progressive choice format gives a “full ranking” of plans, give a richer set of data on customer preferences. For example comparing “most preferred” to “full ranking” will help better gauge how strong customer preference is for each plan.

- Introduction of the bill impact in the second exercise will help understanding at what “price point” customers switch away from their preferred plans as stated in the first exercise.
    - The bill amount for each alternative is randomly selected from a wide range of possible amounts, in order to appropriately test sensitivity to changing bill impact for the regional plan.

Following feedback from survey testing, information shown in bar charts (rather than pie charts) used to help respondents compare across plans more easily.

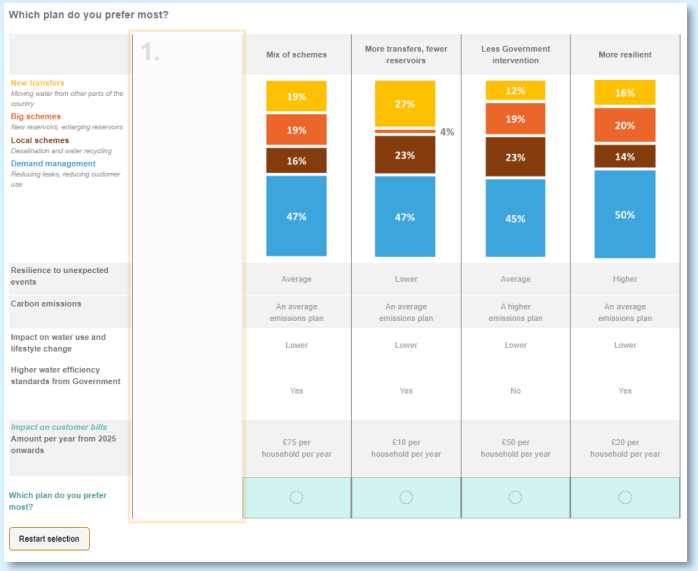
These aspects were chosen to aid comparisons as they had the highest level of variation between each of the selected plans. The descriptions were based on summarising the relative performance of each plan (see data shown on slide 30).

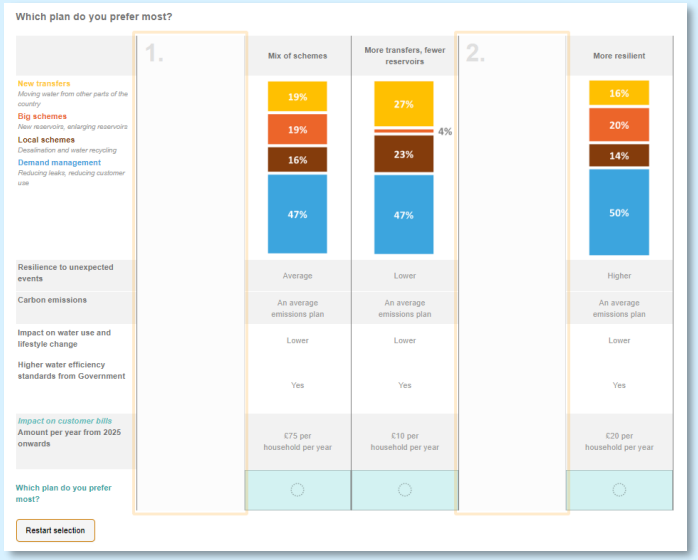
Bill amount included in the second choice exercise only.

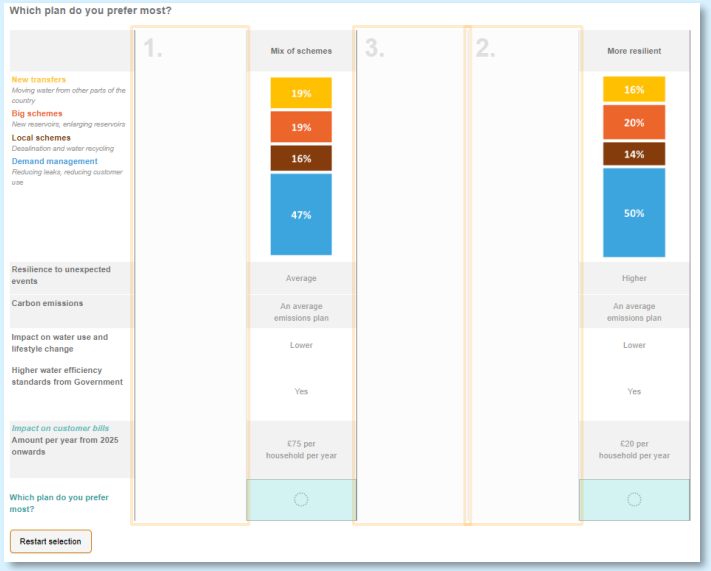
Which plan do you prefer most?

	Less Government intervention	More transfers, fewer reservoirs	More resilient	Mix of schemes	More demand management
New transfers *Moving water from other parts of the country*	12%	27%	16%	19%	9%
Big schemes *New reservoirs, enlarging reservoirs*	19%	4%	20%	19%	19%
Local schemes *Desalination and water recycling*	23%	23%	14%	16%	13%
Demand management *Reducing leaks, reducing customer use*	45%	47%	50%	47%	59%
Resilience to unexpected events	Average	Lower	Higher	Average	Average
Carbon emissions	A higher emissions plan	An average emissions plan	An average emissions plan	An average emissions plan	A lower emissions plan
Impact on water use and lifestyle change	Lower	Lower	Lower	Lower	Higher
Higher water efficiency standards from Government	No	Yes	Yes	Yes	Yes
Impact on customer bills **Amount per year from 2025 onwards**	£150 per household per year	£30 per household per year	£100 per household per year	£50 per household per year	£10 per household per year
Which plan do you prefer most?	○	○	○	○	○

The order the plans was shown in (left to right) was randomised between respondents to avoid possible ordering bias.







1st choice

2nd choice

3rd choice

and so on…

Progressive choice format – respondents select their most preferred plan, then of the remaining plans, selected the most preferred plan. Respondents make a total of 4 “most preferred” choices.