APPENDIX B

Supply Options and Screening Process

This appendix summarises the number of supply-side options considered in the plan and the criteria by which they have been assessed as feasible. Full option information including costs and benefits is provided in the detailed planning tables in Appendix H.

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B 1. Summary of options number and type

A summary of the type and number of supply options we assessed for inclusion in our draft plan is presented in Table 1. We have updated the list of options here to take into account the new EA option categories (February 2022). All 271 options presented below have gone through detailed screening process shown in the following section. Please note the total number of options does not include other types of drought interventions besides drought permits and orders.

Table 1. Number and type of feasible supply-side options which have been through at least high level SEA screening.

Option type	Number of options (including inter-regional transfers and SROs)				
	United Utilities	Severn Trent	Welsh Water	Hafren Dyfrdwy	South Staffs
Aquifer recharge/ Aquifer storage recovery	-	-	-	-	-
Catchment management	-	-	-	-	-
Change in levels of service	-	-	-	-	-
Conjunctive use	3	-	-	-	1
Desalination	4	-	-	-	-
Drought permit/ order	12	6	7	1	2
Effluent reuse	-	-	2	-	-

Option type	Number of options (including inter-regional transfers and SROs)				
	United Utilities	Severn Trent	Welsh Water	Hafren Dyfrdwy	South Staffs
External potable bulk supply/ transfer	-	7	-	-	1
External raw water bulk supply/ transfer	20	4	-	-	6
Groundwater enhancement	25	3	1	-	-
Internal potable water transfer	1	13	-	-	-
Internal raw water transfer	1	3	-	-	-
Licence Trading	4	-	-	-	1
New groundwater	7	1	2	-	-
New reservoir	3	3	-	-	1
New surface water	37	8	2	-	3
New technology	-	-	-	-	-
New Water treatment works	-	-	-	-	-
New/enhanced pumping station	-	1	1	-	-
Outage reduction	-	-	-	-	-
Reduction of raw water losses	1	-	-	-	-
Reservoir enlargement	9	14	1	-	-
Surface water enhancement	6	1	5	-	3
Trunk mains new/ renewal	-	7	-	-	-
Water reuse	7	2	-	-	-
Water treatment works capacity increase	1	-	-	-	-
Water treatment works loss recovery	1	13	3	-	-
Total	**142**	**86**	**24**	**1**	**18**

B 2. Summary of options screening process and criteria

Figure 1 below shows the screening process, based on the criteria shown in Table 2 and Table 3 which follow. Feedback received from regulators since January 2022 has been considered to help refine the list of feasible options further; this means that some options have been added and some have been screened out.

Figure 1. Options screening process.

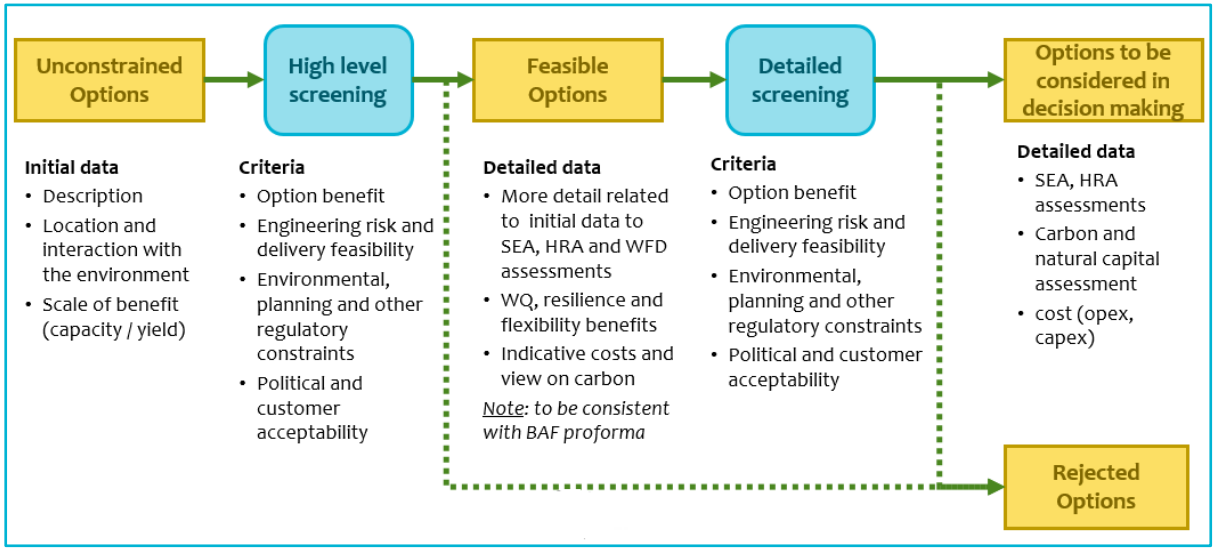

Table 2. High-level screening criteria.

Option benefit	Is the likely scale of supply benefit (yield) to water companies and/or other sectors relative to the supply deficiency sufficient to proceed?
	Is the option in a location that makes deployment practicable?
	Is the option likely to be granted an abstraction licence or other necessary consent?
	Could the option offer supply / demand benefits at a regional or national scale?
Engineering risk and delivery feasibility	Is the engineering complexity such that it is highly unlikely to deliver the benefit stated i.e. is it technically feasible?
	Is the technology established with more than one example of it in use at scale worldwide?
Environmental, planning and other regulatory constraints	Does the option cause unmitigable damage to a European designated site (SAC/SPA/Ramsar)?
	Does the option cause unmitigable damage to Nationally designated site (SSSI/NNR/National Park/Ancient Woodland)?
	Does the option cause unmitigable damage to Site with significant heritage or visual amenity value (e.g. Scheduled Ancient Monument or AONB)?
Political and customer acceptability	Is the option politically unacceptable such that it is unlikely to gain planning approval?
	Does it cause significant negative socio-economic impact than cannot be mitigated?

Table 3. Detailed screening criteria.

Option benefit	Is the scheme mutually exclusive with a lower cost, higher benefit, less environmentally damaging option?
	Is the option dependent on another option that has been screened out?
	Is the option durable / viable in the long term?
	Is the option flexible to changing circumstances in demand?
Engineering risk and delivery feasibility	Can the option be developed within the required timescale to meet the WRZ deficit?
	Does the option pass HRA compliance risks?
	Does the option increase the risk of flooding that cannot be mitigated and / or is the site at risk of flooding?
	Does it breach any other legislative requirements that would render it illegal?
Environmental, planning and other regulatory constraints	Does the option transfer raw water between catchments and represent a non mitigable INNS risk?
	Does the option transfer water of a different quality that would breach DWI guidance (e.g. metaldehyde)?
	Does the option lead to deterioration of any of the water bodies classified under the WFD?
	Does the option meet the social and environmental objectives of the relevant SEA?
	If in Wales does the option comply with Welsh Government's SMNR principles
Political and customer acceptability	Is the option likely to be completely unacceptable to customers? for example in terms of taste and odour
	Is the option likely to be unacceptable to stakeholders?
Cost, carbon and natural capital	Capex Cost
	Opex cost
	Carbon impact (embedded and operational)
	Natural capital value
	What if any is the net gain to the environment provided by the option?
	Does the option provide other resilience benefits to water companies?
	Does the option provide benefit for other sectors and is supported by them?