Revised Draft Water Resources Management Plan 2024

Technical Appendix P – Options List Tables

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Background and Introduction

P.1 Appendix P – Options list should be read in conjunction with the following reports as detailed in Figure P-1.

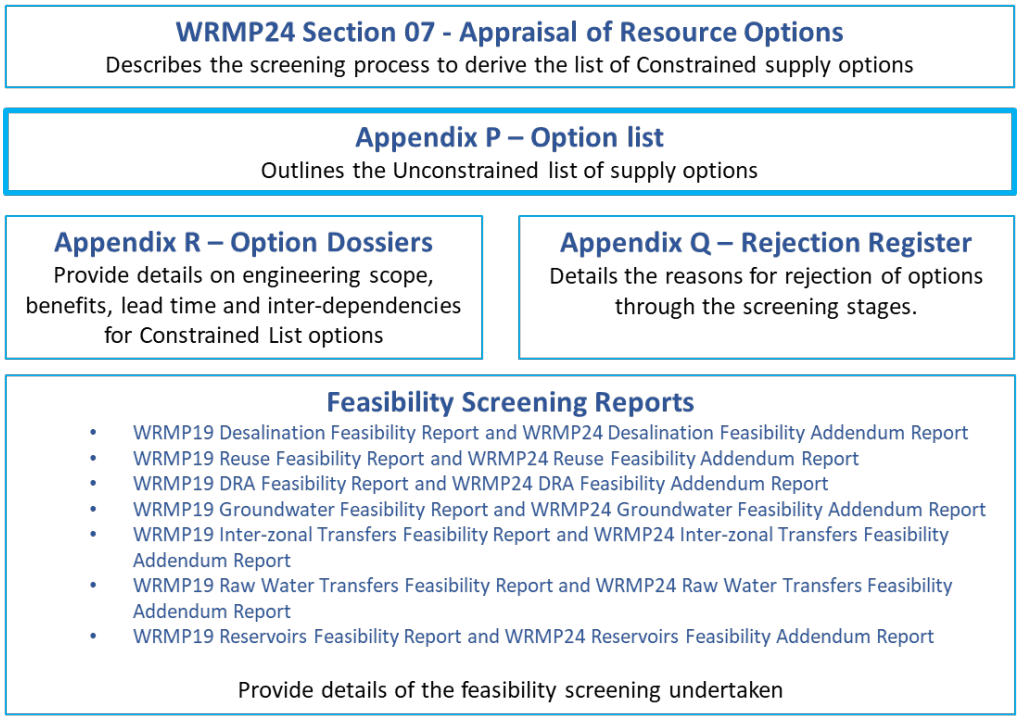

Figure P-1: Overview of draft WRMP24 Supply options reports

Appendix P: Options List provides:

- A summary of generic option screening
- List of Unconstrained Options which were identified for options screening
- For all Unconstrained Options, a summary of the option screening results and deployable output benefits is provided

Note on terminology:

At WRMP19 the terminology 'Reuse' was used, the terminology at WRMP24 has moved on to be 'Water Recycling'. The WRMP documents refer to options as recycling options however feasibility reports refer to reuse as these were drafted at WRMP19. The terms Reuse and Recycling can be considered interchangeably.

At WRMP19 the terminology Abingdon Reservoir was used, this has been further developed and is now referred to as South East Strategic Reservoir Option (SESRO). When referring to different reports and information it is necessary to refer to both these names. In reading the WRMP documents Abingdon Reservoir and SESRO are used interchangeably and refer to the same option.

Options list tables

P.2 Appendix P sets out the water resource options list and the demand options list.

Water resource options list

P.3 Following the principles of the Water Resource Planning Guideline (WRPG), a phased approach to developing water resource options for WRMP24 has been undertaken so that effort on reducing uncertainties is focused on the issues that could reasonably be expected to influence option screening decisions. An overview of the approach to reviewing and assessing resource options in the preparation of WRMP24 is shown in Figure P-2. The approach comprises: option identification and definition; feasibility assessment; option screening; option development; and investment modelling. These are described in more detail below. Further information on the approach can be found in Section 7 Appraisal of Resource Options.

P.4 Option identification and definition was undertaken in two stages. Stage 1 involves generic option screening of option types. Stage 2 involves identification of options within option types which passed Stage 1. The output of option identification and definition was the Unconstrained List of options.

P.5 Feasibility Assessment: options on the Unconstrained List were assessed following the three-stage methodology in accordance with the WRMP19 approach. The output of this stage is the Feasible List of options.

P.6 Option Screening: further screening was undertaken where options were subject to a combined limit or were mutually exclusive with another option. The output of this stage is the Constrained List of options.

P.7 Option Development: Constrained List options were developed for inclusion in the investment model and dWRMP24 documentation.

P.8 Options on the Constrained List have then been subject to programme appraisal/ investment modelling using the Water Resources South East (WRSE) investment model to determine the optimum best value programme of solutions to the water supply/demand deficit to ensure that supply balances demand, taking account of relevant future forecast water resource scenarios.

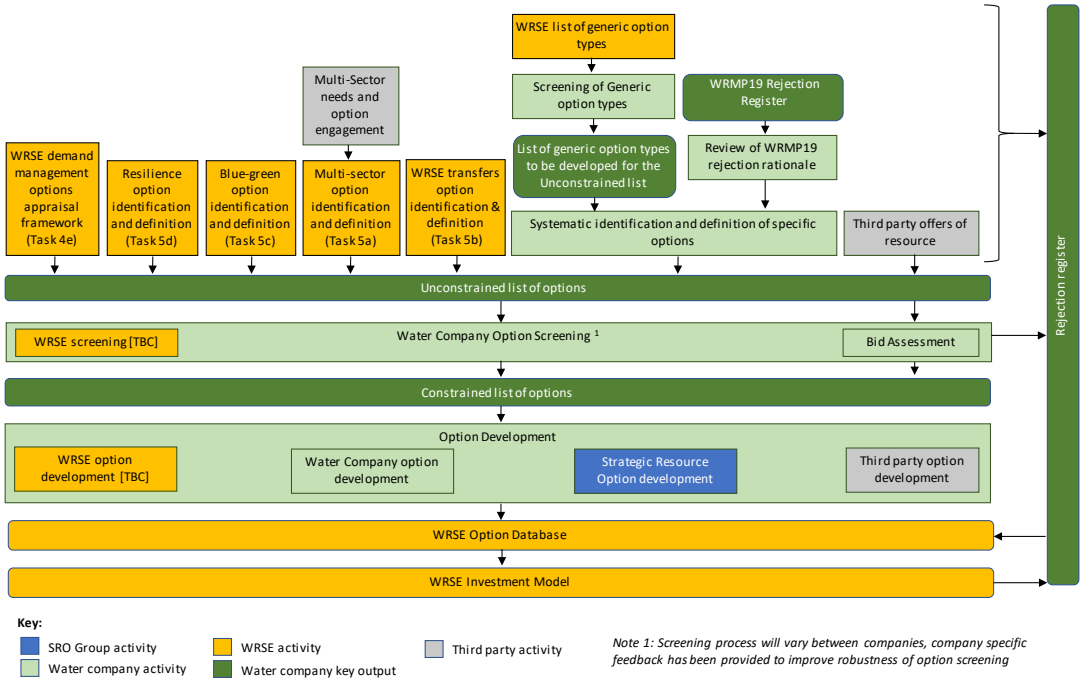

Figure P-2: A phased approach to reviewing and assessing water resource options

Generic screening of resource options

P.9 The option types considered in the generic screening exercise were those listed in the UKWIR Water Resources Planning Tools report[1]. The generic water resource options list and a summary of the results of the screening are shown in Table P-1.

Scheme Type / Sub type	Screening decision
Catchment management schemes - Flow augmentation and licensing	✓
Catchment management schemes - Terrestrial habitat creation/management	✓
Catchment management schemes - Natural water retention measures	✓
Catchment management schemes - Fisheries management	✓
Catchment management schemes - River Restoration	✓
Catchment management schemes - Sustainable Urban Drainage Systems (SUDS)	✓
Catchment management schemes - Nutrient and sediment reduction	✓
Catchment management schemes - Pesticide reduction	✓
Catchment management schemes - Integrated catchment management	✓
Catchment management schemes - Knowledge exchange, education and agricultural activity	✓
Desalination	✓
Groundwater sources	✓
Artificial Storage and Recovery wells (or Aquifer Storage and Recovery (ASR))	✓
Aquifer recharge /Artificial recharge (AR)	✓

1 UKWIR, Water Resources Planning Tools, EBSD Report, Ref. 12/WR/27/6. 2012.

Scheme Type / Sub type	Screening decision
Tidal barrage	✗
Conjunctive use operation of sources	✓
Joint ("shared asset") resource	✓
Asset Transfers	✓
Options to trade other (infrastructure) assets	✓
Abstraction licence trading	✓
Distribution capacity expansion	✓
Redevelopment of existing resources with increased yields	✗
Increase water treatment works (WTW) capacity	✓
New reservoir	✓
Reclaimed water, water re-use, effluent re-use - indirect	✓
Reclaimed water, water re-use, effluent re-use - direct	✗
Direct river abstraction	✓
Bulk transfers into region	✓
Bulk transfers within region	✓
Drought intervention - Drought order	✓
Drought intervention - Drought permit	✓
Change in Level of Service to enhance water available for use (WAFU)	✓
Imports (icebergs)	✗
Rain cloud seeding	✗
Drought intervention - recommission abandoned sources	✓
Tankering of water - Road Tankering	✗
Tankering of water - Sea Tankering	✗
Drought intervention - Temporary transfer	✗

Table P-1: Generic list of resource options

Unconstrained list of resource options

P.10 For option types that passed the generic screening exercise, option identification was conducted to identify an Unconstrained List of potential options. The feasibility of the options on the Unconstrained list was then assessed. These studies led to the production of the Feasible List of options of each resource type that has then been further evaluated at the Further Screening stage, which used the investment model to run different scenarios comparing options, to produce the Constrained List of specific options. The Unconstrained List is set out in Table P-2, indicating the screening status of each specific option identified. (Note: apart from raw water transfer conveyance elements, the table does not include system elements (e.g. water treatment, raw water system or network reinforcement elements) unless they are integral to a specific resource option).

P.11 Where schemes are shown as having been screened out, the reasoning can be found in Appendix Q: Scheme Rejection Register.

Option type	Name	Feasibility Stage			Capacity[2]			Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
London WRZ										
Reuse	Reuse Beckton - 380 Ml/d[3]	✓	✓	✓	✓	✗	380 Ml/d	316 Ml/d	316 Ml/d	316 Ml/d
	Reuse Beckton - 300 Ml/d[4]	✓	✓	✓	✓	✓	300 Ml/d	252 Ml/d	252 Ml/d	252 Ml/d
	Reuse Beckton - 200 Ml/d[4]	✓	✓	✓	✓	✓	200 Ml/d	172 Ml/d	172 Ml/d	172 Ml/d
	Reuse Beckton - 150 Ml/d[4]	✓	✓	✓	✓	✓	150 Ml/d	130 Ml/d	130 Ml/d	130 Ml/d
	Reuse Beckton - 100 Ml/d[4]	✓	✓	✓	✓	✓	100 Ml/d	89 Ml/d	89 Ml/d	89 Ml/d
	Reuse Beckton - 50 Ml/d	✓	✓	✓	✓	✓	50 Ml/d	46 Ml/d	46 Ml/d	46 Ml/d
	Abbey Mills PS Sewer Mining (Luxborough Lane) - 300 Ml/d	✓	✗				300 Ml/d	n/a	n/a	n/a
	Abbey Mills PS Sewer Mining (Luxborough Lane) - 200 Ml/d	✓	✗				200 Ml/d	n/a	n/a	n/a
	Abbey Mills PS Sewer Mining (Luxborough Lane) - 150 Ml/d	✓	✗				150 Ml/d	n/a	n/a	n/a
	Abbey Mills PS Sewer Mining (Luxborough Lane) - 100 Ml/d	✓	✗				100 Ml/d	n/a	n/a	n/a
	Abbey Mills PS Sewer Mining (Luxborough Lane) - 50 Ml/d	✓	✗				50 Ml/d	n/a	n/a	n/a
	Abbey Mills PS Sewer Mining (Lower Hall) – 300 Ml/d	✓	✓	✗			300 Ml/d	n/a	n/a	n/a
	Abbey Mills PS Sewer Mining (Lower Hall) – 200 Ml/d	✓	✓	✗			200 Ml/d	n/a	n/a	n/a
	Abbey Mills PS Sewer Mining (Lower Hall) – 150 Ml/d	✓	✓	✗			150 Ml/d	n/a	n/a	n/a

[2] Capacity is stated in Ml/d unless stated otherwise.
[3] A WRMP19 review of cumulative effects of Thames Water WRMP19 options on the receptor environment in the Middle Thames Tideway identified that if there is more than a 15-20% decrease (275-366 Ml/d) in freshwater inputs to the Middle Tideway normal salinity patterns could be substantially affected. The London Effluent Reuse SRO has therefore considered options up to 300 Ml/d, however at WRMP19 a maximum capacity of 380 Ml/d was assessed as feasible for Beckton Reuse. The 380 Ml/d option remains on the Feasible List while further work is ongoing to review the cumulative impact of options on the Middle Tideway salinity.
[4] Option is phased in WRSE investment model option, see Appendix R for details of phasing.

Option type	Name	Feasibility Stage			Capacity[2]			Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	Abbey Mills PS Sewer Mining (Lower Hall) – 100 Ml/d	✔	✔	✘			100 Ml/d	n/a	n/a	n/a
	Abbey Mills PS Sewer Mining (Lower Hall) – 50 Ml/d	✔	✔	✘			50 Ml/d	n/a	n/a	n/a
	Reuse Mogden - 200 Ml/d[5,6]	✔	✔	✔	✘		200 Ml/d	169 Ml/d	169 Ml/d	169 Ml/d
	Reuse Mogden - 150 Ml/d[5]	✔	✔	✔	✔	✔	150 Ml/d	130 Ml/d	130 Ml/d	130 Ml/d
	Reuse Mogden - 100 Ml/d[5]	✔	✔	✔	✔	✔	100 Ml/d	88 Ml/d Ml/d	88 Ml/d	88 Ml/d
	Reuse Mogden - 50 Ml/d	✔	✔	✔	✔	✔	50 Ml/d	46 Ml/d	46 Ml/d	46 Ml/d
	Mogden Reuse (Mogden STW) – 212 Ml/d	✔	✔	✘			212 Ml/d	n/a	n/a	n/a
	Deephams Reuse – 46.5 Ml/d [7]	✔	✔	✔	✔	✔	46.5 Ml/d	42 Ml/d	42 Ml/d	42 Ml/d
	Deephams Reuse – 25 Ml/d	✔	✔	✘			25 Ml/d	n/a	25 Ml/d (NC)	n/a
	Crossness Reuse - 190 Ml/d	✔	✔	✔	✔	✘	190 Ml/d	164 Ml/d	164 Ml/d	164 Ml/d
	Crossness Reuse - 150 Ml/d	✔	✔	✔	✔	✘	150 Ml/d	130 Ml/d	130 Ml/d	130 Ml/d
	Crossness Reuse - 100 Ml/d	✔	✔	✔	✔	✘	100 Ml/d	89 Ml/d	89 Ml/d	89 Ml/d
	Crossness Reuse - 90 Ml/d	✔	✔	✔	✔	✘	90 Ml/d	79 Ml/d	79 Ml/d	79 Ml/d
	Crossness Reuse - 50 Ml/d	✔	✔	✔	✔	✘	50 Ml/d	46 Ml/d	46 Ml/d	46 Ml/d
	Reuse Mogden S Sewer – 50 Ml/d	✔	✔	✔	✔	✘	50 Ml/d	46 Ml/d	46 Ml/d	46 Ml/d

[5] Option is phased in WRSE investment model, see Appendix R for details of phasing.
[6] Further modelling has shown that a maximum capacity of 200 Ml/d has a high risk of breaching Environment Agency guidance but does not risk breaching the Water Framework Directive (WFD) threshold, this option will therefore have a maximum of 150 Ml/d in the Gate 2 Report. Further work will continue to develop an operational philosophy to mitigate this risk this may result in further changes to the maximum capacity.
[7] Following completion of the further studies by Thames Water, a joint review of the findings with the Environment Agency has established that a Deephams STW Reuse option is incompatible with the environmental ambition flow targets that the Environment Agency is seeking to deliver for the Lower River Lee through WRSE and the Environment Agency's Environmental Destination work. The option has been included on the Constrained List for implementation after 2060 as it could be considered following delivery of measures under the EA's Environmental Destination work.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	Reuse Mogden S Sewer – 25 Ml/d[8]	✔	✔	✔	✔	✔	25 Ml/d	23 Ml/d	23 Ml/d	23 Ml/d
	Greenwich PS Sewer Mining (Lower Hall) - 150 Ml/d	✔	✘				150 Ml/d	n/a	n/a	n/a
	Greenwich PS Sewer Mining (Lower Hall) – 100 Ml/d	✔	✘				100 Ml/d	n/a	n/a	n/a
	Greenwich PS Sewer Mining (Lower Hall) – 50 Ml/d	✔	✘				50 Ml/d	n/a	n/a	n/a
	Greenwich PS Sewer Mining (Hogsmill) – 150 Ml/d	✔	✘				150 Ml/d	n/a	n/a	n/a
	Greenwich PS Sewer Mining (Hogsmill) – 100 Ml/d	✔	✘				100 Ml/d	n/a	n/a	n/a
	Greenwich PS Sewer Mining (Hogsmill) – 50 Ml/d	✔	✘				50 Ml/d	n/a	n/a	n/a
	Millbrook Road PS Sewer Mining (Hogsmill) – 100 Ml/d	✔	✔	✘			100 Ml/d	n/a	n/a	n/a
	Millbrook Road PS Sewer Mining (Hogsmill) – 50 Ml/d	✔	✔	✘			50 Ml/d	n/a	n/a	n/a
	Wandle Valley PS Sewer Mining (Hogsmill) – 17 Ml/d	✔	✔	✘			17 Ml/d	n/a	n/a	n/a
	Long Reach STW Final Effluent Reuse (adjacent to site) – 80 Ml/d	✔	✘				80 Ml/d	n/a	n/a	n/a
	Long Reach STW Final Effluent Reuse (adjacent to site) – 50 Ml/d	✔	✘				50 Ml/d	n/a	n/a	n/a
	Riverside STW Final Effluent Reuse (adjacent to site) – 38 Ml/d	✔	✘				38 Ml/d	n/a	n/a	n/a

Dry Weather Flow (DWF) monitoring data was gathered during the London Effluent Reuse SRO Gate 2 stage, which showed DWF values of 33 to 36 Ml/d. This is substantially below a DWF of 60 Ml/d required to support a 50 Ml/d Mogden South Sewer scheme. As a result only a smaller deployable output c.25 Ml/d is possible. The 50Ml/d option is rejected after the additional wastewater benefits of the option are reviewed, while a 25 Ml/d option is now included.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
Desalination	Crossness Desalination (Unblended) - 65 Ml/d	✔	✔	✔	✘		65 Ml/d	n/a	n/a	n/a
	Crossness Desalination (Blended) – 300 Ml/d[9]	✔	✔	✔	✔	✔	300 Ml/d	267 Ml/d	267 Ml/d	267 Ml/d
	Crossness Desalination (Blended) – 250 Ml/d[9]	✔	✔	✔	✔	✔	250 Ml/d	222 Ml/d	222 Ml/d	222 Ml/d
	Crossness Desalination (Blended) – 200 Ml/d[9]	✔	✔	✔	✔	✔	200 Ml/d	178 Ml/d	178 Ml/d	178 Ml/d
	Crossness Desalination (Blended) – 150 Ml/d[10]	✔	✔	✔	✔	✔	150 Ml/d	133 Ml/d	133 Ml/d	133 Ml/d
	Crossness Desalination (Blended) – 100 Ml/d	✔	✔	✔	✔	✔	100 Ml/d	89 Ml/d	89 Ml/d	89 Ml/d
	Crossness Desalination (Blended) – 50 Ml/d	✔	✔	✔	✔	✔	50 Ml/d	44 Ml/d	44 Ml/d	44 Ml/d
	Beckton Desalination - 150 Ml/d	✔	✔	✔	✔	✔	150 Ml/d	133 Ml/d	133 Ml/d	133 Ml/d
	Beckton Desalination – 100 Ml/d	✔	✔	✔	✔	✔	100 Ml/d	89 Ml/d	89 Ml/d	89 Ml/d
	Beckton Desalination – 50 Ml/d	✔	✔	✔	✔	✔	50 Ml/d	44 Ml/d	44 Ml/d	44 Ml/d
	River Lee, Coppermills Water Treatment Works (WTW) (blended)	✔	✘				150 Ml/d	n/a	n/a	n/a
	Manor Road, Erith, Honor Oak, (blended)	✔	✘				150 Ml/d	n/a	n/a	n/a
	Crossness (Erith Southern Grazing Marshes) - 150 Ml/d	✔	✔	✘			150 Ml/d	n/a	n/a	n/a
	Crossness (Erith Southern Grazing Marshes) – 300 Ml/d	✔	✔	✘			300 Ml/d	n/a	n/a	n/a

[9] Option is phased in WRSE investment model option, see Appendix R for details of phasing.
10 Option is phased in WRSE investment model option, see Appendix R for details of phasing.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
Raw Water Transfer (Resource)	Tripcock Ness, Thamesmead Coppermills WTW (blended) - 150 Ml/d	✔	✘				150 Ml/d	n/a	n/a	n/a
	Tripcock Ness, Thamesmead Coppermills WTW (blended) – 300 Ml/d	✔	✘				300 Ml/d	n/a	n/a	n/a
	Battersea- new treatment / blend site direct-to Thames Water ring Main	✘					25 Ml/d	n/a	n/a	n/a
	Kielder Reservoir	✔	✘				Not defined	n/a	n/a	n/a
	Great Spring	✘					Not defined	n/a	n/a	n/a
	Mythe abstraction reduction - 15 Ml/d – STT resource	✔	✔	✔	✔	✘	15 Ml/d [3]	10 Ml/d	10 Ml/d	14 Ml/d
	Minworth STW effluent diversion Phase 2 – 115 Ml/d[11] – STT resource	✔	✔	✔	✔	✔	115 Ml/d [13]	74 Ml/d	74 Ml/d	103 Ml/d
	Minworth STW effluent diversion Phase 1 – 58 Ml/d– STT resource	✔	✔	✔	✔	✔	58 Ml/d [13]	37 Ml/d	37 Ml/d	53 Ml/d
	Minworth STW effluent for transfer through existing canal network – STT resource	✘					75 Ml/d	n/a	n/a	n/a
	Netheridge STW effluent diversion – 35 Ml/d – STT resource	✔	✔	✔	✔	✔	35 Ml/d [13]	24 M/d	24 M/d	34 M/d
	Shrewsbury Redeployment – 25 Ml/d – STT resource	✔	✔	✔	✔	✘	25 Ml/d [13]	14 Ml/d	14 Ml/d	19 Ml/d
	Lake Vyrnwy - 25 Ml/d – STT resource[12]	✔	✔	✔	✔	✔	25 Ml/d [13]	0 Ml/d	13 Ml/d	18 Ml/d
	Lake Vyrnwy - 50 Ml/d – STT resource[12]	✔	✔	✔	✔	✔	50 Ml/d [13]	0 Ml/d	29 Ml/d	41 Ml/d

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	Lake Vyrnwy - 80 Ml/d [11] – STT resource[12]	✔	✔	✔	✔	✔	80 Ml/d [13]	0 Ml/d	48 Ml/d	68 Ml/d
	Lake Vyrnwy - 110 Ml/d [11] – STT resource[12]	✔	✔	✔	✔	✔	110 Ml/d [13]	0 Ml/d	68 Ml/d	96 Ml/d
	Lake Vyrnwy - 140 Ml/d [11] – STT resource[12]	✔	✔	✔	✔	✔	140 Ml/d [13]	0 Ml/d	87 Ml/d	123 Ml/d
	Lake Vyrnwy - 160 Ml/d [11] – STT resource[12]	✔	✔	✔	✔	✔	160 Ml/d [13]	0 Ml/d	100 Ml/d	141 Ml/d
	Lake Vyrnwy - 180 Ml/d [11] – STT resource[12]	✔	✔	✔	✔	✔	180 Ml/d [13]	0 Ml/d	112 Ml/d	160 Ml/d
	Craig Goch Reservoir expansion	✘					Not defined	n/a	n/a	n/a
	River Severn (independent unsupported River Severn resource option, without support options)[13] – STT resource	✔	✔	✔	✘		n/a	134 Ml/d	134 Ml/d	134 Ml/d
	Longdon Marsh reservoir to support River Severn abstraction – 50 Mm^3 – STT resource	✔	✘				50 Mm^3	n/a	n/a	n/a
	Longdon Marsh reservoir to support River Severn abstraction – 89 Mm^3 – STT resource	✔	✘				89 Mm^3	n/a	n/a	n/a
	Longdon Marsh reservoir to support River Severn	✔	✘				125 Mm^3	n/a	n/a	n/a

[12] The North West Transfer (Vyrnwy) options are being selected by both WRW and WRSE. Adaptive planning enables the use of 75 Ml/d from the North West Transfer by Severn Trent until the year the scheme is selected by WRSE.
[13] DOs for the Severn Thames Transfer (STT) are based upon stochastic modelling including climate change, other abstractors using licenced amounts and assumed (where applicable) 15% losses in River Severn and 10% losses in the River Avon. Although the entirely unsupported STT option has been rejected, the DO benefit of the unsupported resource needs to be added to the DO benefit of the support elements to provide the overall DO benefit of the partially supported STT under the DYAA condition, but the unsupported benefit is not included within the DO for the ADPW condition as its availability during the peak week cannot be assured.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	abstraction – 125 Mm^3 – STT resource									
	River Wye to Deerhurst – 60.3 Ml/d – STT resource	Offer withdrawn by DCWW and not assessed					60.3 Ml/d	n/a	n/a	n/a
	Use of a new Thames reservoir (as in reservoir report, if successfully promoted) to support River Severn abstraction and transfer[14]	✗					n/a	n/a	n/a	n/a
	Use of Farmoor Reservoir to support River Severn abstraction and transfer	✗					n/a	n/a	n/a	n/a
	Oxford Canal – Farmoor reservoir	n/a	✓	✓	✓	✓	15 Ml/d	12 Ml/d	12 Ml/d	12 Ml/d
	Oxford Canal - Cropredy resource[15]	✓	✓	✓	✓	✓	15 Ml/d	10.3 Ml/d	10.3 Ml/d	10.3 Ml/d
	Mendips Quarry	n/a	n/a	n/a	n/a	✗	Not defined	n/a	n/a	n/a

14 SESRO SRO has modelled the potential DO benefit that could be achieve by providing a link between SESRO and STT, this is reported against SESRO / STT interconnector - Conjunctive Use Benefit under Inter-Company Transfers .
15 Two Oxford Canal options have been identified. The Cropredy option supplies the London Water Resource zone by transfer of water to canal at Cropredy for discharge to River Cherwell and subsequent discharge to the River Thames. The Second option supplies SWOX through a conveyance pipeline from Duke's Cut on the Oxford Canal to the River Thames upstream of the existing Farmoor intake.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
Raw Water Transfer[16] (Conveyance)	Canal transfer Minworth STW to River Thames	n/a	✗				75 Ml/d	n/a	n/a	n/a
	Pipeline from Kielder Reservoir	n/a	✓	✗			Up to 300 Ml/d to LON; 40 Ml/d to SWOX	n/a	n/a	n/a
	Canals from Kielder Reservoir	n/a	✗				45 Ml/d	n/a	n/a	n/a
	Oxford Canal - Cropredy resource conveyance	✓	✓	✓	✓	✓	15 Ml/d	n/a	n/a	n/a
	STT - Raw Water Transfer Deerhurst to Culham - 100 Ml/d	n/a	✗				100 Ml/d	n/a	n/a	n/a
	Deerhust to Radcot - 300 Ml/d	n/a	✗				300 Ml/d	n/a	n/a	n/a
	Deerhust to Radcot - 600 Ml/d	n/a	✗				600 Ml/d	n/a	n/a	n/a
	STT - Raw Water Transfer Deerhurst to Culham - 300 Ml/d	n/a	✓	✓	✓	✓	300 Ml/d	80 Ml/d	80 Ml/d	80 Ml/d
	STT - Raw Water Transfer Deerhurst to Culham 400 Ml/d	n/a	✓	✓	✓	✓	400 Ml/d	107 Ml/d	107 Ml/d	107 Ml/d
	STT - Raw Water Transfer Deerhurst to Culham - 500 Ml/d	n/a	✓	✓	✓	✓	500 Ml/d	134 Ml/d	134 Ml/d	134 Ml/d
	STT - Raw Water Transfer Deerhurst to Culham - 600 Ml/d	n/a	✓	✗			600 Ml/d	n/a	n/a	n/a
	STT – Raw Water Transfer Deerhurst to Lechlade - 100 Ml/d	n/a	✓	✓	✗		100 Ml/d	n/a	n/a	n/a
	STT - Cotswold Canal - 100 Ml/d	n/a	✓	✗			100 Ml/d	n/a	n/a	n/a

[16] For raw water transfers the raw water support and conveyance elements are provided separately in the table. The actual DO of transfer options will depend upon combinations of resource and conveyance elements.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
Reservoir[17]	STT - Cotswold Canal - 300 Ml/d	n/a	✔	✔	✔	✘	300 Ml/d	78 Ml/d	78 Ml/d	78 Ml/d
	SESRO / Abingdon Reservoir - 150 Mm^3	✔	✔	✔	✔	✔	150 Mm^3	271 Ml/d	271 Ml/d	271 Ml/d
	SESRO / Abingdon Reservoir - 125 Mm^3	✔	✔	✔	✔	✔	125 Mm^3	230 Ml/d	230 Ml/d	230 Ml/d
	SESRO / Abingdon Reservoir - 100 Mm^3	✔	✔	✔	✔	✔	100 Mm^3	185 Ml/d	185 Ml/d	185 Ml/d
	SESRO / Abingdon Reservoir - 75 Mm^3	✔	✔	✔	✔	✔	75 Mm^3	149 Ml/d	149 Ml/d	149 Ml/d
	SESRO / Abingdon Reservoir – 50 Mm^3	✔	✔	✔	✔	✘	50 Mm^3	103 Ml/d	103 Ml/d	103 Ml/d
	SESRO / Abingdon Reservoir – 30 Mm^3	✔	✔	✔	✔	✘	30 Mm^3	66 Ml/d	66 Ml/d	66 Ml/d
	SESRO / Abingdon Reservoir Phased - 80 + 42 Mm^3	✔	✔	✔	✔	✔	80 Mm^3 + 42 Mm^3	224 Ml/d (155.1 + 68.9)	224 Ml/d (155.1 + 68.9)	224 Ml/d (155.1 + 68.9)
	SESRO / Abingdon Reservoir Phased – 30 + 100 Mm^3 [18]	✔	✔	✔	✔	✔	30 Mm^3 + 100 Mm^3	238 Ml/d (65.5 + 173.1)	238 Ml/d (65.5 + 173.1)	238 Ml/d (65.5 + 173.1)
	Site 41 - Chinnor Reservoir – 75 Mm^3	✔	✔	✘			75 Mm^3	149 Ml/d	149 Ml/d	149 Ml/d
	Site 41 - Chinnor Reservoir – 50 Mm^3	✔	✔	✔	✘		50 Mm^3	103 Ml/d	103 Ml/d	103 Ml/d
	Site 41 - Chinnor Reservoir 30 Mm^3	✔	✔	✔	✔	✔	30 Mm^3	66 Ml/d	66 Ml/d	66 Ml/d

[17] Reservoir options rejected prior to Stage 3 have not been assessed based on possible capacities but rather on land areas (size bands A,B,C).
Band A: sites with a development area between 200 and 399 hectares
Band B: sites with a development area between 400 and 699 hectares
Band C: sites with a development area of 700 hectares and greater

[18] Note the SESRO Phase 1 30 Ml/d option can be selected without Phase 2 100 Ml/d, this differs from the 30 Ml/d rejected options as it sets up the site to allow further expansion. The single phase 30 Ml/d option would block future expansion. The single phase option is rejected on the basis that the site is the only location suitable for a larger reservoir, it would therefore not be appropriate to block this site with a small reservoir preventing any future development.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	Site 36 - Marsh Gibbon Reservoir - 100 Mm^3	✓	✓	✓	✗		100 Mm^3	185 Ml/d	185 Ml/d	185 Ml/d
	Site 36 - Marsh Gibbon Reservoir - 75 Mm^3	✓	✓	✓	✓	✓	75 Mm^3	149 Ml/d	149 Ml/d	149 Ml/d
	Site 36 - Marsh Gibbon Reservoir - 50 Mm^3	✓	✓	✓	✓	✓	50 Mm^3	103 Ml/d	103 Ml/d	103 Ml/d
	Site 36 - Marsh Gibbon Reservoir - 30 Mm^3	✓	✓	✓	✓	✓	30 Mm^3	66 Ml/d	66 Ml/d	66 Ml/d
	Site 37 - Ludgershall - 50 Mm^3	✓	✓	✓	✓	✗	50 Mm^3	103 Ml/d	103 Ml/d	103 Ml/d
	Site 37 - Ludgershall - 30 Mm^3	✓	✓	✓	✓	✗	30 Mm^3	66 Ml/d	66 Ml/d	66 Ml/d
	Site 43 - Aylesbury -75 Mm^3	✓	✓	✗			75 Mm^3	149 Ml/d	149 Ml/d	149 Ml/d
	Site 43 - Aylesbury - 50 Mm^3	✓	✓	✓	✓	✗	50 Mm^3	103 Ml/d	103 Ml/d	103 Ml/d
	Site 43 - Aylesbury - 30 Mm^3	✓	✓	✓	✓	✗	30 Mm^3	66 Ml/d	66 Ml/d	66 Ml/d
	Site 42 - Haddenham - 30 Mm^3	✓	✓	✓	✓	✗	30 Mm^3	66 Ml/d	66 Ml/d	66 Ml/d
	Site 1 – Minety	✓	✗				A	n/a	n/a	n/a
	Site 2 - Leigh	✓	✗				A	n/a	n/a	n/a
	Site 3 - Cricklade	✗					C	n/a	n/a	n/a
	Site 4 - Swindon	✗					A	n/a	n/a	n/a
	Site 5 – Broad Blunsdon	✓	✗				C	n/a	n/a	n/a
	Site 6 - Highworth	✓	✗				B	n/a	n/a	n/a
	Site 7 - Wanborough	✓	✓	✗			A	n/a	n/a	n/a
	Site 8 - Bishopstone	✓	✗				C	n/a	n/a	n/a
	Site 9 - Lechlade	✗					B	n/a	n/a	n/a
	Site 10 - Shrivenham	✓	✗				B	n/a	n/a	n/a
	Site 11 – Clanfield	✓	✗				A	n/a	n/a	n/a
	Site 12 - Faringdon	✓	✗				C	n/a	n/a	n/a
	Site 13 - Uffington	✗					B	n/a	n/a	n/a
	Site 14 – Brize Norton	✓	✗				B	n/a	n/a	n/a

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	Site 15 - Bampton	✔	✘				B	n/a	n/a	n/a
	Site 16 - Witney	✔	✘				B	n/a	n/a	n/a
	Site 17 – Stanford in the Vale	✔	✘				B	n/a	n/a	n/a
	Site 18 - Longworth	✔	✘				B	n/a	n/a	n/a
	Site 19 – South Leigh	✔	✘				A	n/a	n/a	n/a
	Site 20 – West Hanney	✘					B	n/a	n/a	n/a
	Site 21 – Stanton Harcourt	✔	✘				A	n/a	n/a	n/a
	Site 23 - Wantage	✔	✘				B	n/a	n/a	n/a
	Site 24 - Kidlington	✘					B	n/a	n/a	n/a
	Site 25 - Oxford	✔	✘				A	n/a	n/a	n/a
	Site 26 - Didcot	✔	✘				A	n/a	n/a	n/a
	Site 27 - Beckley	✘					C	n/a	n/a	n/a
	Site 28 – Brightwell cum Sotwell	✘					B	n/a	n/a	n/a
	Site 29 - Ambrosden	✘					A	n/a	n/a	n/a
	Site 30 – Drayton St Leonard	✔	✘				A	n/a	n/a	n/a
	Site 31 - Wheatley	✘					B	n/a	n/a	n/a
	Site 32 – Benson	✘					B	n/a	n/a	n/a
	Site 33 – Chalgrove	✔	✘				B	n/a	n/a	n/a
	Site 34 - Bicester	✘					B	n/a	n/a	n/a
	Site 35 – Chalgrove Airport	✔	✘				B	n/a	n/a	n/a
	Site 38 – Great Haseley	✔	✘				A	n/a	n/a	n/a
	Site 39 - Quainton	✔	✘				B	n/a	n/a	n/a
	Site 40 - Postcombe	✔	✔	✘			A	n/a	n/a	n/a
	Site 44 - Stone	✘					B	n/a	n/a	n/a
	Site 45 - Whitchurch	✘					A	n/a	n/a	n/a
	Site 46 - Stewkley	✘					B	n/a	n/a	n/a

Option type	Name	Feasibility Stage			Capacity[2]			Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	Site 47 - Bierton	✗					B	n/a	n/a	n/a
	Site 48 - Wingrave	✗					A	n/a	n/a	n/a
	Site 49 - Cheddington	✓	✗				A	n/a	n/a	n/a
	Site 50 - Kintbury	✓	✗				B	n/a	n/a	n/a
	Site 51 - Burghfield	✗					A	n/a	n/a	n/a
	Site 52 – Beech Hill	✓	✗				B	n/a	n/a	n/a
	Site 53 - Wokingham	✗					A	n/a	n/a	n/a
	Site 54 - Bracknell	✓	✓	✗			A	n/a	n/a	n/a
	Site 55 - Maidenhead	✗					A	n/a	n/a	n/a
	Teddington DRA – 50 Ml/d	✓	✓	✓	✓	✓	50 Ml/d	46 Ml/d	46 Ml/d	46 Ml/d
	Teddington DRA – 75 Ml/d	✓	✓	✓	✓	✓	75 Ml/d	67 Ml/d	67 Ml/d	67 Ml/d
	Teddington DRA – 100 Ml/d[19]	✓	✓	✓	✗		100 Ml/d	92 Ml/d	92 Ml/d	92 Ml/d
	Teddington DRA – 150 Ml/d	✓	✓	✓	✗		150 Ml/d	n/a	n/a	n/a
	Teddington DRA - 300 Ml/d	✓	✓	✓	✗		300 Ml/d	268 Ml/d	268 Ml/d	268 Ml/d
Direct River Abstraction	New river abstraction from River Lee at Three Mills Lock and transfer to Lockwood Thames-Lee Tunnel Extension	✓	✓	✓	✓	✗	35 Ml/d	n/a	n/a	n/a
	River Lee abstraction at Three Mills Lock, transfer to North Woolwich Road site for treatment to potable quality, followed by transfer to service reservoir	✓	✗				35 Ml/d	n/a	n/a	n/a
	Mogden effluent transfer to Teddington and new river abstraction at Teddington with	✓	✓	✗			300 Ml/d	n/a	n/a	n/a

[19] The Teddington DRA scheme's feasibility has been investigated through the London Water Recycling SRO programme. As part of this programme, environmental investigation and river modelling have been carried out. Through this investigation, and as a result of dialogue with the Environment Agency, it has been determined that a Teddington DRA scheme of larger than 75 Ml/d should not currently be considered as being promotable.

Option type	Name	Feasibility Stage			Capacity[2]			Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	transfer to Queen Mother Reservoir									
	Mogden effluent transfer to Teddington and new river abstraction and treatment at Teddington for direct supply	✔	✘				300 Ml/d	n/a	n/a	n/a
	Mogden effluent transfer to Teddington and increase of existing river abstraction upstream at Surbiton	✘					300 Ml/d	n/a	n/a	n/a
	Beckton effluent transfer to Teddington and new river abstraction at Teddington connecting to Thames-Lee Tunnel	✘					300 Ml/d	n/a	n/a	n/a
	Beckton effluent transfer to Teddington and new river abstraction at Teddington with transfer to Queen Mother Reservoir	✘					300 Ml/d	n/a	n/a	n/a
	Beckton effluent transfer to Teddington and new river abstraction and treatment at Teddington for direct supply	✘					300 Ml/d	n/a	n/a	n/a
	New river abstraction on Lower River Roding	✘					17.3 Ml/d	n/a	n/a	n/a
	New river abstraction on River Mardyke	✘					3.7 Ml/d	n/a	n/a	n/a
	New river abstraction on River Rom/Beam	✘					7.2 Ml/d	n/a	n/a	n/a
	New river abstraction on River Ingrebourne	✘					4.2 Ml/d	n/a	n/a	n/a
Raw Water Purchase	Didcot Raw Water Purchase (2025 – 2030)	n/a	n/a	n/a	n/a	✔	22.6 Ml/d	0 Ml/d	22.6 Ml/d	22.6 Ml/d

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
Aquifer Recharge	Chingford Raw Water Purchase [20]	n/a	n/a	n/a	n/a	✗	20 Ml/d	n/a	n/a	n/a
	Lower Thames Licence Trade	Dependent on GUC being implemented				✓	50 Ml/d	0 Ml/d	50 Ml/d	50 Ml/d
	Kidbrooke Aquifer Recharge/Aquifer Storage and Recovery (SLARS1)	✓	✓	✓	✓	✓	8 Ml/d	8 Ml/d	8 Ml/d	8 Ml/d
	South London Artificial Recharge Scheme (SLARS) – Merton Abbey	✓	✓	✓	✓	✓	6 Ml/d	6 Ml/d	6 Ml/d	5 Ml/d
	South London Artificial Recharge Scheme (SLARS) - Streatham	✓	✓	✓	✓	✓	5 Ml/d	5 Ml/d	5 Ml/d	7 Ml/d
Aquifer Storage and Recovery	AR - HARS (Hornsey)	Option not assessed as WARMS2 modelling indicated that there was no Deployable Output benefit for this option								
	South East London (Addington) Aquifer Storage and Recovery	✓	✓	✓	✓	✓	3 Ml/d	3 Ml/d	3 Ml/d	5 Ml/d
	Thames Valley Central Aquifer Storage and Recovery	✓	✓	✓	✓	✓	3 Ml/d	3 Ml/d	3 Ml/d	5 Ml/d
Groundwater	ASR Horton Kirby[21]	✓	✓	✓	✓	✓	5 Ml/d	5 Ml/d	5 Ml/d	5 Ml/d
	Groundwater Addington	✓	✓	✓	✓	✓	2.7 Ml/d	2.7 Ml/d	2.7 Ml/d	5.7 Ml/d
	London Confined Chalk (north)	✓	✓	✓	✓	✓	2 Ml/d	2 Ml/d	2 Ml/d	2 Ml/d
	Southfleet/Greenhithe (new WTW)[21]	✓	✓	✓	✓	✓	8.8 Ml/d	8.8 Ml/d	8.8 Ml/d	8.8 Ml/d
	Merton Recommissioning	✓	✓	✓	✓	✓	2 Ml/d	2 Ml/d	2 Ml/d	6 Ml/d
	New River Head Removal of Constraints	✓	✓	✓	✓	✓	3 Ml/d	3 Ml/d	3 Ml/d	3 Ml/d

[20] Chingford Raw Water Purchase is included in the baseline for the period of the existing contract (up to 2035) however this option has been rejected as Essex and Suffolk cannot offer an extension beyond 2035 due to their Environmental Destination needs. The full rejection reasoning can be found in Appendix Q – Rejection Register.
[21] ASR Horton Kirby and Southfleet & Greenhithe Groundwater schemes were included in the WRMP19 Preferred Programme for London for delivery in AMP7 (2020-25). Since WRMP19 the delivery of these options has been deferred beyond the end of AMP7 as the supply demand balance in the London WRZ is in surplus. They are therefore included as WRMP24 Options

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
	North London Licence Trading	✗					1 Ml/d	n/a	n/a	n/a
	GW – Honor Oak	✓	✓	✓	✓	✓	1.4 Ml/d	1.4 Ml/d	1.4 Ml/d	2.7 Ml/d
	Honor Oak Increase DO	✓	✓	✓	✓	✓	1.7 Ml/d	1.7 Ml/	1.7 Ml/	1.7 Ml/
	Nonsuch Increase DO	✗					1.27 Ml/d	n/a	n/a	n/a
	GW – Epsom	✗					3.3 Ml/d	n/a	n/a	n/a
	Shortlands	✓	✗				4.2 Ml/d	n/a	n/a	n/a
	London confined Chalk (north-east)	✓	✗				0.5 Ml/d	n/a	n/a	n/a
	Epsom Removal of Constraints	✓	✓	✓	✗		3 Ml/d	3 Ml/d	3 Ml/d	2.8 Ml/d
	RC – Green St Green	Option not assessed as it is being delivered and therefore the additional deployable output is included in the baseline.								
Removal of Deployable Output Constraints	Queen Mary Reservoir – Removal of Outlet Constraint[22]	TBC					6 Ml/d			
	Queen Mary Reservoir – Removal of Low-level Constraint[21]	TBC					8 Ml/d			
	Queen Mary Reservoir – Removal of Baffle[21]	TBC					2 Ml/d			
Catchment Management[23]	Bean Wellfield (Groundwater)	✓	✓	✓	✓	✓	n/a	0.1 Ml/d	0.1 Ml/d	0.1 Ml/d
	Green Street Green (Groundwater)	✓	✓	✓	✓	✓	n/a	0.3 Ml/d	0.3 Ml/d	0.3 Ml/d
	Wilmington (Groundwater)	✓	✓	✓	✓	✓	n/a	0.2 Ml/d	0.2 Ml/d	0.2 Ml/d

[22] Work to understand the feasibility of this option as a supply option for WRMP has been paused due to limited evidence that this option could bring a meaningful DO benefit to the WRZ
[23] Only Catchment Management Options with a DO benefit have been included in Appendix P

Option type	Name	Feasibility Stage					Capacity[2] (Ml/d)	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening		1 in 2 average	1 in 500 average	1 in 500 peak
Inter-Company Transfers[24]	Cheam to Merton Transfer	✔	✔	✔	✔	✔	15 Ml/d	n/a		
	Cheam to Merton Transfer	✘					30 Ml/d	n/a		
	Cheam to Merton Transfer	✘					50 Ml/d	n/a		
	Cheam to Merton Transfer	✘					100 Ml/d	n/a		
	Cheam to Merton Transfer	✘					200Ml/d	n/a		
	Woodmansterne WTW to Epsom Downs	✔	✔	✔	✔	✔	10 Ml/d	n/a		
	Thames to Affinity Transfer - Conjunctive Use Benefit	Dependent on T2AT being implemented							n/a	25 Ml/d per 50 Ml/d of T2AT transfer capacity up to a maximum benefit of 50 Ml/d
	SESRO / STT interconnector - Conjunctive Use Benefit	Dependent on both SESRO and STT being implemented							n/a	DO for connection with STT (Deerhurst pipeline) is 3.6-10.8 Ml/d, depending on pipeline capacity and reservoir size.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
SWOX WRZ										
Raw Water Transfer (resource)	Oxford Canal - BCN Surplus – Raw Water Transfer Resource (Duke's Cut)[25]	✓	✓	✓	✓	✓	15 Ml/d	12 Ml/d	12 Ml/d	12 Ml/d
Raw Water Transfer (conveyance)	Severn Thames Transfer, Deerhurst – Culham: see London WRZ for sizes	✓	✓	✓	✓	✓		n/a	n/a	n/a
	Oxford Canal – Duke's Cut to Farmoor 15Ml/d Pipeline	✓	✓	✓	✓	✓	15 Ml/d	n/a	n/a	n/a
New Reservoir	Abingdon Reservoir: see London WRZs for sizes and DO[26]	✓	✓	✓	✓	✓	n/a	n/a	n/a	n/a
	Chinnor Reservoir: see London WRZs for sizes and DO [26]	✓	✓	✓	✓	✓	n/a	n/a	n/a	n/a
	Marsh Gibbon Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✓	n/a	n/a	n/a	n/a
	Ludgershall Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✗	n/a	n/a	n/a	n/a
	Aylesbury Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✗	n/a	n/a	n/a	n/a
	Haddenham Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✗	n/a	n/a	n/a	n/a

[25] Two Oxford Canal options have been identified. The Cropredy option supplies the London Water Resource zone by transfer of water to canal at Cropredy for discharge to River Cherwell and subsequent discharge to the River Thames. The second option supplies SWOX through a conveyance pipeline from Duke's Cut on the Oxford Canal to the River Thames upstream of the existing Farmoor intake.

[26] It is assumed that the DO benefit from reservoir options is the same for use in London, SWOX and SWA. DOs for non-SRO reservoirs (Marsh Gibbon, Chinnor, Haddenham, Ludgershall and Aylesbury) are based on the DO modelling completed for SESRO / Abingdon Reservoir.

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
Direct River Abstraction	River Thames Culham abstraction - Abstraction at Culham and transfer to Farmoor Reservoir via a new pumping main	✗					4.5 Ml/d	n/a	n/a	n/a
	River Thames Days Weir Abstraction - River Thames abstraction at Days Weir and transfer to Farmoor	✗					40 Ml/d	n/a	n/a	n/a
	Recommission existing Direct River Abstraction and treatment at Culham and directly supply to SWOX	✓	✓	✗			4.5 Ml/d	n/a	n/a	n/a
Aquifer recharge	AR – Cricklade	✓	✗				10.0 Ml/d	n/a	n/a	n/a
Groundwater	Moulsford 1	✓	✓	✓	✓	✓	2 Ml/d	2 Ml/d	2 Ml/d	3.5 Ml/d
	Woods Farm Increase DO	✓	✓	✓	✓	✓	2.4 Ml/d	2.4 Ml/d	2.4 Ml/d	2.9 Ml/d
	Woods Farm licence increase	✗					3.5 Ml/d	n/a	n/a	n/a
	GW - South Stoke 1	✓	✓	✓	✗		3.5 Ml/d	n/a	n/a	n/a
	GW - South Stoke 2 (with treatment)	✗					10.0 Ml/d	n/a	n/a	n/a
	GW - Moulsford 2 (with treatment)	✗					7.5 Ml/d	n/a	n/a	n/a
	Pump House Water Ltd	Confirmed the licence has been revoked, this option was therefore rejected without screening.								
	River Marden	✓	✗				0.5 Ml/d	n/a	n/a	n/a
	Cotswold Edge	✗					1.0 Ml/d	n/a	n/a	n/a
Removal of Constraints to DO	Ashton Keynes borehole pumps - Removal of Constraints to DO	✓	✓	✓	✓	✓	2.0 Ml/d	0 Ml/d	0 Ml/d	2.04 Ml/d
	Witheridge Hill borehole pumps	✓	✗				0.6 Ml/d	n/a	n/a	n/a
	Britwell Removal of Constraints	✓	✓	✓	✗		1.3 Ml/d	1.3 Ml/d	1.3 Ml/d	1.3 Ml/d
	Henley to SWOX – 2.4 Ml/d	✓	✓	✓	✓	✓	2.4 Ml/d	n/a	n/a	n/a

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
Internal Inter-Zonal Transfer	Henley to SWOX – 5 Ml/d	✔	✔	✔	✔	✔	5 Ml/d	n/a	n/a	n/a
	Kennet Valley to SWOX - 6.7 Ml/d	✔	✔	✔	✔	✔	4.5 Ml/d	n/a	n/a	n/a
	Kennet Valley to SWOX - 2.3 Ml/d	✔	✔	✔	✔	✔	2.3 Ml/d	n/a	n/a	n/a
	Kennet Valley to SWOX - 8.31 Ml/d	✔	✔	✘				n/a	n/a	n/a
	Transfer from Hambleden WTW to Long Crendon SR to an existing pipeline at Milton	✘					Not defined	n/a	n/a	n/a
	Transfer from Hambleden WTW to Long Crendon SR to an existing service reservoir at Shotover.	✘					Not defined	n/a	n/a	n/a
	Transfer from Hambleden WTW to Long Crendon SR to an existing pipeline at Marston	✘					Not defined	n/a	n/a	n/a
	Transfer from Hambleden WTW to Nettlebed service reservoir to Beggarsbush service reservoir at South Oxford area.	✘					Not defined	n/a	n/a	n/a
	Wessex to SWOX Charlton WTW to Minety SR and from there to Flaxlands SR in South Swindon.	✔	✔	✔	✔	✘	2.9 Ml/d	2.9 Ml/d	2.9 Ml/d	2.9 Ml/d
Inter-Company Transfers	Wessex to SWOX Charlton WTW to Minety SR and from there to Blunsdon SR in South Swindon	✔	✘				2.9 Ml/d	n/a	n/a	n/a
	Wessex to SWOX Charlton WTW to Minety SR and from there to Ashton Keynes WTW in South Swindon	✔	✔	✘			2.9 Ml/d	n/a	n/a	n/a

Option type	Name	Feasibility Stage					Capacity[2]	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening	(Ml/d)	1 in 2 average	1 in 500 average	1 in 500 peak
SWA WRZ										
Aquifer storage and recovery	Hampden Bottom-Wendover	✓	✗				7.5 Ml/d	n/a	n/a	n/a
Raw Water Transfer	Severn Thames Transfer, Deerhurst – Culham: see London WRZs for sizes	✓	✓	✓	✓	✓				
New Reservoir	Abingdon Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✓	n/a	n/a	n/a	n/a
	Chinnor Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✓	n/a	n/a	n/a	n/a
	Marsh Gibbon Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✓	n/a	n/a	n/a	n/a
	Ludgershall Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✗	n/a	n/a	n/a	n/a
	Aylesbury Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✗	n/a	n/a	n/a	n/a
	Haddenham Reservoir: see London WRZs for sizes and DO	✓	✓	✓	✓	✗	n/a	n/a	n/a	n/a
Groundwater	Remenham	✗					10.0 Ml/d	n/a	n/a	n/a
	GW – West Marlow	✗					15.0 Ml/d	n/a	n/a	n/a
	Bourne End (Marlow East)	✗					9.3 Ml/d	n/a	n/a	n/a
	Medmenham	✗					0.0 Ml/d	n/a	n/a	n/a
	Taplow	✗					5.1 Ml/d	n/a	n/a	n/a
	Taplow Increase DO	✓	✓	✓	✓	✓	5.7 Ml/d	0 Ml/d	0 Ml/d	5.7 Ml/d
	Datchet Increase DO	✓	✓	✓	✓	✓	1.6 Ml/d	1.6 Ml/d	1.6 Ml/d	6.2 Ml/d
	Dorney Increase DO	✓	✓	✓	✓	✓	4.3 Ml/d	0 Ml/d	0 Ml/d	4.3 Ml/d
Removal of Constraints to DO	Hampden Disinfection Upgrade	✗					0.8 Ml/d	n/a	n/a	n/a
	Henley to SWA - 2.4 Ml/d	✓	✓	✓	✓	✓	2.4 Ml/d	n/a	n/a	n/a

Option type	Name	Feasibility Stage					Capacity[2] (Ml/d)	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening		1 in 2 average	1 in 500 average	1 in 500 peak
Internal Inter-Zonal Transfer	Henley to SWA – 5 Ml/d	✔	✔	✔	✔	✔	5 Ml/d	n/a	n/a	n/a
Guildford WRZ										
Aquifer storage and recovery	ASR - Guildford (Abbotswood)	✔	✘				4.5 Ml/d	n/a	n/a	n/a
Groundwater	Dapdune Licence Disaggregation	✔	✔	✔	✔	✔	2.2 Ml/d	0 Ml/d	0 Ml/d	2.2 Ml/d
	Mousehill & Rodborough Rehab	✘					0.18 Ml/d	n/a	n/a	n/a
Removal of Constraints to DO	Dapdune Removal of constraints to DO	✔	✔	✔	✔	✔	1 Ml/d	0 Ml/d	0 Ml/d	1 Ml/d
	RC - Sturt Road Spring Capture	✔	✘				0.25 Ml/d	n/a	n/a	n/a
	SEW to Guildford - Surrey Hills SR (SEW) to Hogsback SR (TW- Guildford)	✔	✘				10 Ml/d	n/a	n/a	n/a
Inter-Company Transfers	SEW to Guildford Hogsback SR (SEW) to Mount SR (TW-Guildford)	✔	✔	✔	✔	✔	10 Ml/d	n/a	n/a	n/a
	Reigate to Guildford - 5 Ml/d	✔	✔	✔	✔	✔	5 Ml/d	n/a	n/a	n/a
	Reigate to Guildford - 20 Ml/d	✔	✔	✔	✔	✔	20 Ml/d	n/a	n/a	n/a
Henley WRZ										
Groundwater	Sheeplands licence disaggregation	✘					13.3 Ml/d	n/a	n/a	n/a
Kennet Valley WRZ										
Raw Water Transfer	T2ST Spur: Culham to Fobney (Raw)	✘					n/a	n/a	n/a	n/a
Groundwater	Mortimer Disused Source (Recommission)	✔	✔	✔	✔	✔	4.5 Ml/d	4.5 Ml/d	4.5 Ml/d	4.5 Ml/d

Option type	Name	Feasibility Stage					Capacity[2] (Ml/d)	Deployable output		
		Stage 1	Stage 2	Stage 3	Validation	Further screening		1 in 2 average	1 in 500 average	1 in 500 peak
	GW – Purley	✗					15 Ml/d	n/a	n/a	n/a
	GW - Mapledurham	✗					15 Ml/d	n/a	n/a	n/a
	GW - Mortimer (transfer peak licence from Arborfield)	✓	✗				6.8 Ml/d	n/a	n/a	n/a
	GW – Hungerford	✗					1.4 Ml/d	n/a	n/a	n/a
	GW - Playhatch (increased licence)	✗					1.3 Ml/d	n/a	n/a	n/a
Removal of Constraints to DO	East Woodhay borehole pumps Removal of Constraints to DO	✓	✓	✓	✓	✓	2.1 Ml/d	0 Ml/d	0 Ml/d	2.1 Ml/d
	SWA to Kennet Valley	✗					N/A	n/a	n/a	n/a
Internal inter-zonal transfers	Sheeplands WTW to Early SR	✓	✗				2.4 Ml/d	n/a	n/a	n/a
	T2ST Spur: Culham to Newbury (Potable)	n/a	n/a	n/a	n/a	✓	10 Ml/d	n/a	n/a	n/a
	T2ST Spur: Reading to Fobney (Potable)	✗					40 Ml/d	n/a	n/a	n/a

Table P-2: Unconstrained list of resource elements

Demand options list tables

P.12 The unconstrained demand options list was comprised of all possible demand options that are considered technically feasible, but which may have not been free of environmental or planning constraints issues. The unconstrained demand options list was developed through the screening of options from the generic list of options identified by UKWIR in its Water Resources Planning Tools 2012 Report[27].

P.13 The generic water demand options identified by UKWIR are grouped into six categories:

- Leakage
- Metering
- Water efficiency
- Incentive Schemes
- Non-potable
- WRSE Region-Wide

P.14 Using these six categories as a base, we developed each generic option to include multiple potential sub-options and specific options. For example, the generic option, leakage, was broken into seven sub-options, advice and guidance, Active Leakage Control, pressure management, smart networks, mains rehabilitation, leakage innovation and regulation. These sub-options were then classified further as specific options that could be assessed in the screening process.

P.15 The sub-options and specific options identified under each generic option category form the unconstrained options List. In total, there are 216 demand management options for the draft WRMP24 that made up the full unconstrained options list.

P.16 Where options are shown as having been screened out at either the primary screening or secondary screening stage, the reason for rejection can be found in Appendix Q: Scheme Rejection Register.

[27] UKWIR (2012), Water Resources Planning Tools 2012, Economics of Balancing Supply and Demand Report

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
Generic Option type: Leakage			
Advice and Guidance	Advice and information on leakage detection and fixing techniques (Agriculture)	✔	✘
	Advice and information on leakage detection and fixing techniques (Industrial and Commercial Customers)	✔	✘
	In house awareness campaign to reduce internal losses	✔	✘
Active Leakage Control	ALC + 10% - Enhanced levels of 'Find and Fix' over and on top of that already being undertaken to maintain current levels of leakage to achieve a further 10% reduction in leakage.	✔	✘
	ALC + 20% - Enhanced levels of 'Find and Fix' over and on top of that already being undertaken to maintain current levels of leakage to achieve a further 20% reduction in leakage.	✔	✘
	Advanced District Metered Area (DMA) Intervention. Made up of the following components: • DMA Redesign – capital work to redesign DMAs to better identify leakage. Includes splitting DMA's, moving priority district meters etc. • Acoustic logger installation • Replacement of service pipes • Pressure Management: install new pressure management schemes within individual DMAs at sub-DMA level. • DMA Excellence – operational component of work following DMA Redesign. Includes assessment of demand in the DMA (incl. temporary logging of large customers) and using Find and Fix programmes to pinpoint leaks • Fixing Leaks – the final stage of DMA Enhancement is capital work to fix the leaks identified This option was re-named from 'Enhanced ALC' in WRMP19.	✔	✔
	Improvements in systems to allow more easy reporting of visible leaks and analysis of social media for leak notification	✔	✘
	Be more operationally efficient	✔	✘
	Decreasing the time taken to fixing reported leaks	✔	✘

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	Develop metrics and monitoring to quantify SR leakage	✔	✘
	Enhanced district meter verification - meter verification is an on-site check to determine the accuracy of flow being registered through a meter.	✔	✘
	Enhanced logger verification - logger verification is a simple on site check to ensure that the flow being registered by a meter matches the flow being recorded by the data logging device attached to the meter.	✔	✘
	Explore PRV noise reduction methods.	✔	✘
	Household meter under /over registration analysis - meter verification as an on-site check to determine the accuracy of flow being registered through a meter.	✔	✘
	Improve quality of repairs	✔	✘
	Improving analytics to detect leak breakouts	✔	✘
	Increase pressure for leak detection	✔	✘
	Measuring performance of the ALC activity	✔	✘
	Non-household meter under /over registration analysis - meter verification as an on-site check to determine the accuracy of flow being registered through a meter.	✔	✘
	Remote sensing technologies - aircraft-based	✔	✘
	Remote sensing technologies - ground-based	✔	✘
	Remote sensing technologies - satellite-based	✔	✘
	Trunk main and service reservoir leakage reduction by improved metering.	✔	✘
	Installation of through bore hydrants to allow for in-pipe leak detection/localisation.	✔	✘
Pressure Management	Pressure Management 4 - further reduction of pressure on existing schemes that are made up of multiple DMAs. Requires the installation of additional tall building boosters.	✘	
	Pressure Management - install new pressure management schemes within individual DMAs at sub-DMA level.	✔	✘
	Pressure Management - install new zonal pressure management schemes.	✔	✘
	CaLM Networks - this option includes a range of activities: targeted extension of pressure management, upgrade of controllers for PRVs and pumps, transient investigations, trunk mains expansion/extension, distribution mains expansion/extension. To include: design, construction, and commissioning of new pressure management schemes.	✔	✘

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	Retrofit improved controllers to pumps and valves to enable more precise and responsive pressure profiles to be maintained that minimise leakage while providing adequate pressures at critical points at all times. Investigating the existence of pressure transience using transient loggers, tracing the sources of those transients and removing the causes.		
Smart Networks	Smart Networks Programme to improve leakage targeting and detection.	✔	✘
Mains Rehabilitation	Asset Replacement - replace individual pipes that have high burst rates.	✔	✘
	Asset Replacement 100m - replace individual pipes that have high burst rates and must be above 100m in length.	✔	✘
	Comms Only - replace communication pipes only.	✔	✘
	Full DMA Mains Replacement of at least 90% of DMA - includes mains replacement, comm pipe replacement and boundary box install (does not include CSL repair).	✔	Feasible Option
	Partial DMA Mains Replacement - targets worst performing assets and includes mains replacement, comm pipe replacement and boundary box install (does not include CSL repair).	✔	Feasible Option
	Asset renewal - this option would involve the replacement and renewal of trunk mains. This option excludes replacement of communication pipes and Customer Supply Pipes (CSP) (from the property boundary to inside the property).	✘	
	Develop procedure for abandoned mains	✔	✘
	Minimise joints	✔	✘
	Replace rather that repair - household supply pipes. Includes a study to assess the impact on leakage if the supply pipes are replaced instead of repairing them.	✔	✘
Leakage Innovation	Innovative techniques improving speed and quality of repairs, such as: • Adoption of keyhole repair techniques • Advanced technologies for precise and accurate leak location – acoustics • Advanced technologies for precise and accurate leak location - tracer gases • Quality/Make joints leak free - product development	✔	✔

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	• Use technologies for repairing pipes from the inside • Enhanced detection equipment/innovation in detection • Enhanced repair methods/innovation in repair methods		
Regulation	Investigate and lobby for improved regulatory incentives for reducing leakage.	✔	✘
Generic Option type: Metering			
Progressive Metering Programme (PMP) (previously Houses Only)	Meter all houses (AMI technology) and repair CSLs found	✔	✔
	Meter all houses (AMR technology) and repair CSLs found	✔	✔
	Meter all houses (Basic technology) and repair CSLs found	✔	✘
Bulk Metered Area (previously Blocks of Flats (Bulks) Only)	Bulk metering flats (AMI technology) and repair CSLs found	✔	✔
	Bulk metering flats (AMR technology) repair CSLs found	✔	✔
Houses and Bulks	Meter all houses and bulk meter (external) blocks of flats (AMI technology) and repair CSLs found.	✔	✘
	Meter all houses and bulk meter (external) blocks of flats (AMR technology) and repair CSLs found.	✔	✘
	Meter all houses and bulk meter (external) blocks of flats (Basic technology) and repair CSLs found.	✔	✘
Houses, bulks and individual flats	Meter all houses (including CSL repair), individual flats (internal, no CSL repair) and bulk meter (including CSL repair) blocks of flats (AMI technology).	✔	✘
	Meter all houses (including CSL repair), individual flats (internal, no CSL repair) and bulk meter (including CSL repair) blocks of flats (AMR technology).	✔	✘
	Meter all houses (including CSL repair), individual flats (internal, no CSL repair) and bulk meter (including CSL repair) blocks of flats (Basic technology).	✔	✘
	Meter all houses (including CSL repair) and individual flats (internal, no CSL repair) with Basic technology and bulk metering (including CSL repair) blocks of flats with AMR technology.	✔	✘
Mini Bulk Metered Area	Install small bulk meters on properties with multiple supplies (previously called Small Blocks Flats Bulks).	✔	✔
Progressive Smart Upgrade Programme - Household (PSUP) (previously Household meter upgrades)	Proactive replacement of basic meters with smart meters on household properties.	✔	✔

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
Progressive Smart Upgrade Programme - Non-household (PSUP)	Proactive replacement of basic meters with smart meters on non-household properties.	✔	✔
Selective metering	Selective metering (agricultural troughs)	✔	✘
Illegal connections	Target and meter illegal connections	✔	✘
Information	In-home display of real time consumption	✔	✘
Metering Innovation - new meter installations	Investigate innovative practices to install meters at no access and unmeterable properties. This includes a change in practice for no access and an investment/trial of alternative technology for unmeterables.	✔	✔
Metering Innovation - proactive meter upgrades	Investigate innovative practices to upgrade meters at no access and unmeterable properties. This includes a change in practice for no access and an investment/trial of alternative technology for unmeterables.	✔	✔
Generic option type: Water Efficiency			
Advice and Guidance	Benchmark to help drive water efficient behaviours (domestic)	✘	
	Social landlord audits and benchmarking	✘	
	Call Centre contact to customers giving water efficiency advice	✘	
	Intensive area based promotional campaigns	✘	
	Develop an AMR interface tool to help drive water efficiency behaviours	✘	
	Develop water certificates for customer properties	✘	
	Development and promotion of an online water use calculator	✘	
	Development of Smart Phone Applications	✘	
	Distribution of advice and guidance via Water Regs visits	✘	
	Distribution of self-audit packs	✘	
	Distribution of water saving information in customers' bills	✘	
	Distribution of water saving information via leaflet distribution	✘	
	Education in schools and provision of educational material	✘	
	Adolescents showering campaign	✘	
	Campaign to encourage customers to self-repair internal leaks	✘	
	Leaky Loos campaign	✘	
	Events and road shows	✘	
	Free water efficiency goods and advice to all newly metered customers	✔	✘
	Offer free water efficiency goods online	✔	✘

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	Promotions via newspapers	✗	
	Water efficiency advice via an internet promotion	✗	
	Development of a multi-utility consumption web-portal	✗	
	Community/religious groups to promote water efficiency advice	✗	
	Council and community landscape redesign advice	✗	
	Use satellite technology to advise customer when to water their gardens	✗	
	Target water consumption at the community scale	✗	
	Target water consumption in university private rental sector	✗	
	Targeted information concerning the benefits of trickle irrigation compared to spray irrigation.	✓	✗
	Targeted water efficiency information to other abstractors	✓	✗
	Targeting perceptions and attitudes via shared spaces (urban environment)	✓	✗
	Digital engagement with all customers	✓	✓
	Tailored digital engagement with customers, targeted at high use households	✗	
	Targeted water efficiency communication based on supply demand pressures	✗	
	Targeted digital engagement based on presence of continuous flow	✗	
Self-Install	Distribution of aerated shower head	✓	✗
	Distribution of cistern displacement devices	✓	✗
	Distribution of hose guns for self-installation	✗	
	Distribution of Shower Timers	✓	✗
	Distribution of tap inserts for self-installation	✓	✗
	Distribution of water gels to gardeners for self-installation	✗	
	Distribution of water saving devices to businesses via Water Regs visits	✗	
	Distribution of innovative technologies/products	✗	
	Subsidy for water efficient white goods	✗	
	Subsidy for water butts	✗	
	Subsidising drought tolerant plants	✗	
	Rebate to replace old toilets	✗	
	Rebates on water efficient fixtures and fittings	✗	

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
Direct Efficient Goods Plumber Installation	Installation of water butt	✔	✘
	Installation of smart shower monitor	✘	
	Smarter Home Visits to newly metered Household Properties as part of the Progressive Metering Programme - involves water efficiency devices, water audit and water savings plan with customer (non-LAHAs only).	✔	✔
	Smarter Home Visits to newly metered optant Household Properties - involves water efficiency devices, water audit and water savings plan with customer (non-LAHAs only).	✔	✔
	Smarter Home Visits to newly metered Household Properties as part of the Progressive Smart Upgrade Programme - involves water efficiency devices, water audit and water savings plan with customer (non-LAHAs only).	✔	✔
	Smarter Home Visits to current unmeasured Household Properties - involves water efficiency devices, water audit and water savings plan with customer (non-LAHAs only).	✔	✘
	Virtual Smarter Home Visit (vSHV) – As above but the customer consultation is online. Any water saving devices are mailed to the customer.	✘	
	Household water efficiency visits and wastage repairs to mini bulk metered properties, targeted based on high use and continuous flow.	✔	✘
	Household water efficiency visits and wastage repairs to bulk metered properties, targeted based on high use and continuous flow.	✔	✘
	Housing Association fixes problems found at Household properties (LAHAs only).	✘	
	Wastage Fixes - Free leak fixes for all customers with internal leakage (i.e. leaky-loos and leaking taps).	✔	✔
	Appliance exchange programme	✘	
	Plumber assisted installation of tap inserts	✔	✘
	Replacement - installation of a dual flush toilet	✔	✘
	Replacement - installation of a low flush toilet	✔	✘
	Replacement - installation of self-closing taps	✔	✘
	Replacement - installation of a shallow trap toilet	✔	✘
	Replacement - installation of a composting toilet	✔	✘
	Retrofit - installation of a dual flush toilet device	✔	✘

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	Retrofit - installation of 'smart devices' (such as taps) that can send data to the customer portal.	✗	
	Replacement - installation of instantaneous water heaters/boilers.	✗	
	Household Innovation and Tariffs	✓	✓
	Trial installation of whole house flow restrictors in high pressure areas.	✓	✗
	Installation of water efficiency devices and internal leak repairs embedded into other internal visits such as internal meter repairs and CSL.	✓	✗
Partner Efficiency Goods and Installation	Partner controlled domestic plumbing installs	✓	✗
	Partnership projects with national organisations	✓	✗
	Partnership projects with public and third sector organisations	✓	✗
	Partnership projects with utility companies	✓	✗
	Partnership with retailers for more efficient white goods	✓	✗
	Partnership working benefits	✓	✗
	Subsidy to appliance manufacturers	✗	
Non-Domestic Advice and Assistance	Benchmark to help drive water efficient behaviours (non-domestic)	✗	
	Smarter Business Visits to Non-Household Properties - company funded. Includes wastage repair offer for non-household customers with continuous flow.	✓	✓
	Smarter Business Visits to Non-Household Properties - customer funded	✗	
	Exploit retail and loan funding opportunities for non-domestic water saving.	✗	
	Free water efficiency goods and advice to all newly metered businesses	✗	
	Introduce training for non-domestic customers about wise water use	✗	
	Non-Domestic water saving advice and assistance	✗	
	Provision of water butts	✗	
	Replacement - installation of a new toilet	✓	✗
	Replacement - installation of a waterless urinals	✓	✗
	Replacement - installation of self-closing taps	✓	✗
	Replacement - installation of a shallow trap toilet	✓	✗
	Replacement - installation of a composting toilet	✓	✗
	Replacement - installation of timing devices	✓	✗
	Optimising water using processes	✗	
	Whole farm water efficiency programme	✗	

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	Trial installation of innovative water efficient products in non-household premises.	✗	
	Discretionary Water use - using non potable water for large users such as golf courses.	✓	✗
Non-Domestic Advice and Assistance	Non-Household Continuous Flow Fixes. Continuous flow targeting, distinct from SBVs and metering, in order to prioritise those properties that are identified as having continuous flow of water. Envisioned that a dedicated element of our SBV team would be added to prioritise the identification and reduction of continuous flow elements.	✓	✓
	Non-Household New Tariff Structure. In the NHH sector, water usage tariffs are envisioned to be brought in from AMP10 and onwards. These tariffs would look to implement higher cost rates for overuse of water in the commercial sector, in order to drive down demand.	✓	✓
	Non-Household Retailer Activity. Thames will be communicating with NHH water retailers to further reduce business use by incentivising change. Likely be a combination of: • A retailer-led water efficiency scheme which, similar to tariffs, would target overuse of water. It is expected that this would be more in-depth than the tariffing, with coordination between retailers and NHH users allowing for further savings. A revised retail exit code, which could better enable NHH Retailer demand reduction activity	✓	✓
Research	Continue to support ongoing research projects	✓	✗
	Ofwat water efficiency research fund	✓	✗
	Save Water Swindon and other flagship research projects	✓	✗
	Whole-town water efficiency programme	✗	
	Support the leak toilet valves project phase 2	✓	✗
	Support the research undertaken by UKWIR	✓	✗
	Support the Waterwise evidence base	✓	✗

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
Regulation	Enforce use of water efficient fittings in new buildings	✗	
	Flow restrictor charging	✗	
	Ban high water use devices	✗	
	Preventing new development	✗	
	Legislate on water use	✗	
Generic options type: Incentive Schemes			
Green Redeem (previously Targeted Incentive Scheme)	Customers are incentivised through non-financial offers (vouchers, prize draws, community rewards) to be more efficient with their water consumption.	✓	✓
Innovative Tariffs	Financial Tariff implementation - only feasible post smart metering.	✓	✗
Generic options type: Non-potable			
Rainwater Harvesting	Individual Buildings (Typology 1) - Commercial Only. Individual commercial Buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings (Typology 1) - Residential Only. Individual residential buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings (Typology 1) - Commercial and Residential. Individual commercial and residential buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings within a Development (Typology 2) - Commercial Only. A non-potable treatment system is delivered to individual commercial buildings on a new development.	✗	
	Individual Buildings within a Development (Typology 2) - Residential Only. A non-potable treatment system is delivered to individual residential buildings on a new development.	✗	
	Individual Buildings within a Development (Typology 2) - Commercial and Residential. A non-potable treatment system is delivered to individual commercial and/or residential buildings on a new development.	✗	
	Multiple Buildings within a Development (Typology 3) - Commercial only. A non-potable treatment system and network is delivered that serves multiple commercial buildings on new developments. i.e. multiple non-potable system can be delivered on the one development.	✗	

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	Multiple Buildings within a Development (Typology 3) - Residential only. A non-potable treatment system and network is delivered that serves multiple residential buildings on new developments. i.e. multiple non-potable system can be delivered on the one development.	✗	
	Multiple Buildings within a Development (Typology 3) - Commercial and Residential. A non-potable treatment system and network is delivered that serves multiple commercial buildings on new developments. i.e. there could be a number of these non-potable systems delivered on the one development.	✗	
	All Buildings within a Development (Typology 4) - Commercial and Residential. A non-potable central system and network is delivered that serves all buildings on a new development.	✗	
Stormwater Harvesting	Individual Buildings (Typology 1) - Commercial Only. Individual commercial Buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings (Typology 1) - Residential Only. Individual residential buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings (Typology 1) - Commercial and Residential. Individual commercial and residential buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings within a Development (Typology 2) - Commercial Only. A non-potable treatment system is delivered to individual commercial buildings on a new development.	✗	
	Individual Buildings within a Development (Typology 2) - Residential Only. A non-potable treatment system is delivered to individual residential buildings on a new development.	✗	
	Individual Buildings within a Development (Typology 2) - Commercial and Residential. A non-potable treatment system is delivered to individual commercial and/or residential buildings on a new development.	✗	
	Multiple Buildings within a Development (Typology 3) - Commercial only. A non-potable treatment system and network is delivered that serves multiple commercial buildings on new developments. i.e. multiple non-potable system can be delivered on the one development.	✗	

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	Multiple Buildings within a Development (Typology 3) - Residential only. A non-potable treatment system and network is delivered that serves multiple residential buildings on new developments. i.e. multiple non-potable system can be delivered on the one development.	✗	
	Multiple Buildings within a Development (Typology 3) - Commercial and Residential. A non-potable treatment system and network is delivered that serves multiple commercial buildings on new developments. i.e. there could be a number of these non-potable systems delivered on the one development.	✗	
	All Buildings within a Development (Typology 4) - Commercial and Residential. A non-potable central system and network is delivered that serves all buildings on a new development.	✗	
Greywater Recycling	Individual Buildings (Typology 1) - Commercial Only. Individual commercial Buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings (Typology 1) - Residential Only. Individual residential buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings (Typology 1) - Commercial and Residential. Individual commercial and residential buildings throughout Thames Water's supply area that are being redeveloped contain a non-potable treatment system.	✗	
	Individual Buildings within a Development (Typology 2) - Commercial Only. A non-potable treatment system is delivered to individual commercial buildings on a new development.	✗	
	Individual Buildings within a Development (Typology 2) - Residential Only. A non-potable treatment system is delivered to individual residential buildings on a new development.	✗	
	Individual Buildings within a Development (Typology 2) - Commercial and Residential. A non-potable treatment system is delivered to individual commercial and/or residential buildings on a new development.	✗	
	Multiple Buildings within a Development (Typology 3) - Commercial only. A non-potable treatment system and network is delivered that serves multiple commercial buildings on new developments. i.e. multiple non-potable system can be delivered on the one development.	✗	

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
	Multiple Buildings within a Development (Typology 3) - Residential only. A non-potable treatment system and network is delivered that serves multiple residential buildings on new developments. i.e. multiple non-potable system can be delivered on the one development.	✗	
	Multiple Buildings within a Development (Typology 3) - Commercial and Residential. A non-potable treatment system and network is delivered that serves multiple commercial buildings on new developments. i.e. there could be a number of these non-potable systems delivered on the one development.	✗	
	All Buildings within a Development (Typology 4) - Commercial and Residential. A non-potable central system and network is delivered that serves all buildings on a new development.	✗	
Wastewater (Blackwater) Recycling	Blackwater recycling at new developments	✗	
Generic Option Type: WRSE Region-wide			
Metering	Compulsory metering - Basic meters in 5 year rollout	✗	
	Compulsory metering - Hosepipes	✗	
	Compulsory metering - walk-by meters with limited fixed network in 10 year rollout.	✗	
	Meter remaining unmetered swimming pool owners	✗	
Advice and Guidance	Household water efficiency	✗	
	Media campaigns to influence water use	✗	
	Metered households proactive consumption support	✗	
Direct Efficient Goods Plumber Installation	Household water efficiency programme (Company led, home visit)	✗	
	Replacement -installation of a dual flush toilet	✗	
Self-Install	Distribution of tap inserts for self-installation	✗	
Self-Install	Free water efficiency goods and advice to all newly metered customers	✗	
Partner Efficiency Goods and Installation	Partnership projects with utility companies	✗	
Non-Domestic Advice and Assistance	Non-household and commercial water efficiency	✗	
Non-Domestic Advice and Assistance	Water Audits -Commercials (Non-process)	✗	

Sub option	Specific option	WRMP24 Primary Screening Decision	WRMP24 Secondary Screening Decision
Greywater Recycling	Treated greywater reuse in new households	✗	

Table P-3: Unconstrained demand management options


Thames
Water