



APPENDIX C

Strategic Resource Options and Water Transfers

This appendix provides a high-level overview of the strategic resource options (see Table 1) and feasible transfers we have considered for selection into the draft regional plan (see Table 2).

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C.1. Strategic resource options

The table below contains a high level description for each SRO we considered for inclusion in our best value draft plan, during the reconciliation process with other regions.

Table 1. Summary of strategic resource options.

Option name	High-level option description	Collaborators	Yield (ML/d)
Grand Union Canal (GUC)	The Grand Union Canal strategic transfer looks to utilise the existing canal infrastructure to transfer water from the Midlands to areas of planning deficit in Hertfordshire and North West London. The scheme plans to utilise a treated wastewater discharge (Minworth WwTW) as the resilient source of water to supply this canal transfer, which will be transferred to the canal via a pipeline between Minworth WwTW and the discharge location.	Affinity Water, Severn Trent Water, Canal & River Trust	58ML/d – 115ML/d
Upper Derwent Valley Reservoir Enlargement	This option targets the increase in storage of the Derwent Valley Reservoir complex to ensure that the historical transfer to Yorkshire Water can continue, as well as to ensure greater resilience for supplies in Severn Trent’s Strategic Grid. This option was identified as a good alternative to ceasing the Derwent Valley transfer to Yorkshire Water.	Severn Trent Water, Yorkshire Water	30-180 ML/d



Option name	High-level option description	Collaborators	Yield (ML/d)
Minworth	<p>The concept of the Minworth Effluent Reuse SRO is to either:</p> <ul style="list-style-type: none"> provide 58 - 115 Ml/d augmentation of the River Avon flows, a tributary of the River Severn, to allow a new abstraction at Deerhurst as part of the Severn to Thames Transfer (STT) SRO <p>or</p> <ul style="list-style-type: none"> provide 58 to 115 Ml/d augmentation of the Grand Union Canal flows to allow a new abstraction to support Affinity Water's supply area as part of the Grand Union Canal Transfer SRO <p>We are also investigating the possibility of providing a raw water source for both SROs simultaneously.</p>	Severn Trent Water & Affinity Water	58-115 Ml/d
Severn Thames Transfer	<p>During periods of drought in the South East, the Severn to Thames Transfer (STT) would convey raw water from the River Severn into the River Thames via an interconnector. The primary option for the interconnector is a pipeline with pumping and raw water treatment facilities which would abstract flows from the lower freshwater River Severn at Deerhurst, near Gloucester, and discharge into the middle River Thames near Culham, Oxfordshire. A current alternative to the pipeline option would be re-constituting the disused, derelict Cotswold Canals.</p> <p>Included in the scope of the Severn Thames transfer is a separate pipeline in Shropshire, to allow transfer of water from Vyrnwy Aqueduct to the River Seven to bypass the Afon Vyrnwy.</p>	United Utilities Water, Severn Trent Water, Thames Water	300-500 Ml/d
Severn Trent Sources (Netheridge and Mythe)	<p>The Severn Trent Sources SRO looks to provide water for the Severn to Thames Transfer (STT), alongside a number of other SROs (North West Transfer, Minworth Effluent Reuse). As part of Severn Trent Sources, two options are currently under consideration: Mythe WTW and Netheridge WwTW.</p>	Severn Trent Water	Mythe – 15Ml/d Netheridge – 35 Ml/d



Option name	High-level option description	Collaborators	Yield (ML/d)
North West Transfer (Vyrnwy Aqueduct and United Utilities Sources)	In order to support the Severn Thames Transfer (STT) scheme, United Utilities have indicated that up to 205 ML/d could be released into the river network (180 ML/d from Lake Vyrnwy). During periods of transfer United Utilities would need to compensate for the loss of this water source by deploying both supply side and demand side solutions to maintain supply to customers in the North West. As part of the WRMP19 process, United Utilities identified a number of new raw water sources that could be potentially used to offset the transfer of water as part of the STT.	United Utilities Water	Up to 205 ML/d to the River Severn (180 ML/d from Lake Vyrnwy)

C.2. Summary of all water transfers

Table 2 below shows a summary of transfer options within and beyond the Water Resources West region. This includes SROs and other feasible transfers that we assessed in developing our best value plan.

Table 2. Summary of transfer options (including SROs). Please note figures have been rounded.

Transfer type	Option	Source	Recipient	Estimate Max Capacity (ML/d)	Raw or potable
Internal transfers (Severn Trent)	121	Strategic Grid zone	Forest and Stroud zone	15	Raw
	128	Strategic Grid zone	North Staffs zone	30	Raw
	128Z	Strategic Grid zone	North Staffs zone	14	Raw
	105	Shelton zone	Ruyton zone	1	Potable
	309	Wolverhampton zone	Shelton zone	18	Potable
	309z	Wolverhampton zone	Shelton zone	12	Potable
	108	North Staffs zone	Staffordshire zone	7	Potable
	110	Wolverhampton zone	Staffordshire zone	15	Potable
	111	Strategic Grid zone	Staffordshire zone	7	Potable



Transfer type	Option	Source	Recipient	Estimate Max Capacity (Ml/d)	Raw or potable
	112	North Staffordshire zone	Staffordshire zone	3	Potable
	79A	Wolverhampton zone	Strategic Grid zone	30	Potable
	79B	Wolverhampton zone	Strategic Grid zone	10	Potable
	104	Nottinghamshire zone	Newark zone	5	Potable
	304	Strategic Grid zone	Nottinghamshire zone	30	Potable
	305	Strategic Grid zone	Nottinghamshire zone	30	Potable
	132	Strategic Grid zone	Forest and Stroud zone	5	Potable
Internal transfers (United Utilities)	WR128	North Eden zone	Carlisle zone	2	Raw
	WR084	Carlisle zone	North Eden zone	3	Potable
External transfers (within region)	101	United Utilities	Severn Trent	1	Potable
	303A	United Utilities	Severn Trent	68	Raw
	303B	United Utilities	Severn Trent	36	Raw
	522	United Utilities	Severn Trent	1	Potable
	523	United Utilities	Severn Trent	2	Potable
	549A	United Utilities	Severn Trent	10	Raw
	549B	United Utilities	Severn Trent	10	Potable
	117	United Utilities	Severn Trent	5	Potable
	301A	United Utilities	Severn Trent	12	Potable
	301B	United Utilities	Severn Trent	25	Potable
	7.5.1.1	United Utilities	South Staffs	14	Raw
	7.5.1.2	United Utilities	South Staffs	27	Raw
	7.5.1.3	United Utilities	South Staffs	45	Raw
	7.5.1.4	United Utilities	South Staffs	75	Raw
	8.1.1	Coors Brewery	South Staffs	3	Raw
	7.1.2.1	Canal & River Trust	South Staffs	5	Raw



Transfer type	Option	Source	Recipient	Estimate Max Capacity (Ml/d)	Raw or potable
	7.1.5	Canal & River Trust	South Staffs	5	Raw
	WR816	Canal & River Trust	United Utilities	5	Raw
	WR817	Canal & River Trust	United Utilities	15	Raw
	WR820	Canal & River Trust	United Utilities	10	Raw
	WR188b1	Canal & River Trust	United Utilities	2	Raw
	WR188b2	Canal & River Trust	United Utilities	2	Raw
	WR823	Coal Authority	United Utilities	2	Raw
	WR824	Coal Authority	United Utilities	1	Raw
	WR825	Coal Authority	United Utilities	4	Raw
	WR826	Coal Authority	United Utilities	2	Raw
	WR831	Coal Authority	United Utilities	2	Raw
	WR833	Coal Authority	United Utilities	3	Raw
	WR845	Nestle	United Utilities	1	Raw
External transfers (to other regions)	STTA4 (North West Transfer)	United Utilities	Water Resources South East/West Country Water Resources	205	Raw
	Severn Trent Sources (Mythe)	Severn Trent	Water Resources South East/West Country Water Resources	15	Raw
	Severn Trent Sources (Netheridge)	Severn Trent	Water Resources South East/West Country Water Resources	35	Raw
	Minworth (via River Severn)	Severn Trent	Water Resources South East/West Country Water Resources	115	Raw
	Grand Union Canal (supported by Minworth)	Severn Trent	Affinity Water	115	Raw
	Severn Thames Transfer	Water Resources West	Water Resources South East	500	Raw



Transfer type	Option	Source	Recipient	Estimate Max Capacity (Ml/d)	Raw or potable
	169 (Cease existing Derwent Valley Transfer)	Severn Trent Water	Yorkshire Water	35	Raw
Inter-regional (from other regions to WRW)	WR810a	Northumbrian Water	United Utilities	49	Raw
	WR810b	Northumbrian Water	United Utilities	49	Raw
	WR811	Northumbrian Water	United Utilities	9	Raw
	WR812a	Northumbrian Water	United Utilities	129	Raw
	WR812b	Northumbrian Water	United Utilities	129	Raw
	WR812c	Northumbrian Water	United Utilities	129	Raw
	WR812d	Northumbrian Water	United Utilities	100	Raw