



Water Resources Management Plan 2024

Resource Options – Inter-zonal Water Transfers
Feasibility Report Addendum

Contents

Executive Summary	1
Introduction	2
Structure of this report.....	2
Updates since WRMP19.....	3
Option Identification	3
Feasibility Screening Criteria.....	3
Feasibility Screening Updates	10
Updated Feasibility Assessment	13
Feasibility Assessment Approach.....	13
Stage 1 Assessment Results.....	13
Stage 2 assessment results	19
Stage 3 assessment results	21
Option Verification and Conclusion	24
Confirmation of feasible list of options.....	24
Summary of Further Screening	24
A. Reference information	25

Tables

Table 1: Structure of this report.....	2
Table 2: Criteria for Stage 1	4
Table 3 Criteria for Stage 2 and basis for assessment of site performance.....	7
Table 4: Criteria for Stage 3 and basis for assessment of site performance.....	9
Table 5: Option changes since WRMP19	12
Table 6: Stage 1 assessment of all options	18
Table 7: Stage 2 assessment of all options	20
Table 8: Stage 3 assessment.....	22

Executive Summary

- 1 This report provides a summary of changes that have been made to the Inter-Zonal transfer options since Thames Water's 2019 Water Resources Management Plan (WRMP19) as part of the 2024 Water Resources Management Plan (WRMP24) development.
- 2 This report acts as an addendum to Thames Water WRMP19 Resource Options Inter-Zonal Water Transfers Feasibility report, February 2018, Rev 01.
- 3 Four new Inter-Zonal transfer options have been identified at WRMP24. The updated WRMP24 feasibility assessment presents the WRMP19 options and the new WRMP24 options. The following list of options are the confirmed list of feasible Inter-Zonal transfer options for WRMP24:
 - Transfer 2.28 MI/d treated water from Pangbourne WTW (Kennet Valley) to Cleeve WTW Swindon and Oxfordshire (SWOX)
 - Transfer 6.74 MI/d treated water from Pangbourne WTW (Kennet Valley) to Cleeve WTW (SWOX)
 - Transfer 2.37 MI/d from Sheeplands WTW (Henley) to Hambleden WTW (SWA)
 - Transfer 5 MI/d from Sheeplands WTW (Henley) to Hambleden WTW (SWA)
 - Transfer 2.37 MI/d from New Farm SR (Henley) to Nettlebed SR (SWOX)
 - Transfer 5 MI/d from New Farm SR (Henley) to Nettlebed SR (SWOX)
 - Transfer 10 MI/d from Hogsback SR (South East Water - SEW) to Mount SR (TW-Guildford).
 - Transfer 2.9 MI/d from Charlton WTW to Minety SR (Wessex) and from there to Flaxlands SR in South Swindon (SWOX)
 - Transfer 10 MI/d from Thames to Southern Transfer (T2ST) pipeline to Speen WTW (Kennet Valley) (new option in WMRP24)
 - Transfer 5 MI/d from Reigate (Sutton and East Surrey Water - SES) to Guildford (GUI)
 - Transfer 20 MI/d from Reigate (Sutton and East Surrey Water - SES) to Guildford (GUI) (new option in WMRP24)
 - Transfer 15 MI/d from Cheam (Sutton and East Surrey Water - SES) to Merton (LON)
 - Transfer 10 MI/d from Woodmansterne WTW (Sutton and East Surrey Water - SES) to Epsom Downs (LON)

Introduction

- 4 Thames Water is developing options for the 2024 Water Resources Management Plan (WRMP24). These options build on options developed as part of Thames Water's 2019 Water Resources Management Plan (WRMP19). This report provides a summary of changes that have been made to the Inter-Zonal (treated) Water Transfers options since WRMP19 and as part of WRMP24 development.
- 5 This report acts as an addendum to Thames Water WRMP19 Resource Options Inter-Zonal Water Transfers Feasibility report, February 2018, Rev 01. This report should be read alongside the WRMP19 report. Information in this report supersedes information provided in the WRMP19 report.
- 6 Changes to the WRMP19 Inter-Zonal Water Transfers Options have been detailed in Section 2. A backchecking exercise has been completed to assess if any changes are required to WRMP19 options list as a result of identification of the new options or developments since WRMP19. Backchecking also provides the opportunity to take into account any changes of circumstance that might affect how an option is considered. This might include a change in the planning and environmental status of a site, changes in national and local planning policy and the emergence of viable technical solutions that were unavailable at the time the original assessment was undertaken.
- 7 The WRMP24 screening, option development and backchecking methodology is summarised in WRMP24 Section 7 - Appraisal of Resource Options.
- 8 This report summarises changes to the Inter-Zonal Water Transfers options up to the end of feasibility screening.

Structure of this report

Table 1 summarises the structure of this report.

Section	Name	Description
	Executive summary	Summary of addendum report.
1	Introduction	This section.
2	Updates since WRMP19	Summary of the changes made to the options list since WRMP19, including changes to WRMP19 options and new WRMP24 options.
3	Updated feasibility assessment	Provides a summary of the current feasibility assessment for all options including options identified at both WRMP19 and WRMP24.
4	Option verification and conclusion	Validation of risk and uncertainty for all options and the confirmation of the feasible list of options.
App A	Reference information	A list of useful links and references.

Table 1: Structure of this report

Updates since WRMP19

Option Identification

- 9 To ensure Thames Water is aligned with the WRSE approach, the following updates have been made to option identification for WRMP24:
- The WRMP19 rejection register has been revisited to ensure that the rejection reasoning remains robust for all rejected options taking into consideration the move to take into account regional need.
 - Rejected options have been reviewed against updated WRMP24 requirements to identify any options which should be revisited due to potential for regional benefits, particularly in light of changes in requirements to plan for 1:500 drought resilience (previously 1:200 at WRMP19) and the need to plan for a long-term environmental destination that achieves and maintains a sustainable level of abstraction by 2050.
 - A review has been undertaken by WRSE to identify new options to be considered in addition to the existing WRMP19 options, three new Inter-Zonal transfer options were identified through this process:
 - Reigate to Guildford
 - Cheam to Merton
 - Woodmansterne to Epsom Downs
 - In addition the Thames to Southern Transfer (T2ST) Strategic Resource Option (SRO) has developed options for a spur pipeline from the main transfer to supply Kennet Valley.

Feasibility Screening Criteria

- 10 The following tables detail the criteria used for feasibility screening, which is further detailed in the WRMP19 Inter-zonal Water Transfer Feasibility Report. This is a 3-stage process.
- Stage 1 – Option identification and assessment of absolute and other key constraints
 - Stage 2 - Assessment of site performance and compilation of short list
 - Stage 3 - Further detailed assessment
- 11 Stage 1 has two phases:
- Option identification – the criteria for which is detailed in Table 2
 - Assessment of the options identified against absolute and other key constraints to the development of a new Inter-Zonal Transfer - the criteria for which is detailed in Table 3. This is a pass / fail assessment for each criterion
- 12 At stages 2 and 3 the assessed performance of each option is reviewed against a red / amber / green classification system, as
- **Red** – issue or constraint can be overcome, but will be very challenging
 - **Amber** – issue or constraint can be overcome
 - **Green** – no constraint posed



- 13 Additionally, Stage 3 allows for costing of each option to provide a comparison across all water resource options. The Stage 2 criteria are shown in Table 3 and the Stage 3 criteria are shown in Table 4.

Inter-zonal transfers Stage 1 assessment criteria	Basis for assessment
Water Availability (WRZ export potential)	Availability of surplus water at the donor zone throughout the planning horizon of works

Table 2: Criteria for Stage 1

Criterion Title	Stage 2 Criteria	Basis for assessment		
		Green	Amber	Red
Property & legal criteria				
Ownership of site & tenancies	Is there sufficient space required to build the facilities? Is there sufficient space to accommodate future growth and permit changes?	Existing TW land is available and sufficient unconstrained space is available both for now and the future.	Some TW land is available, additional land may also be acquired for treatment sites and/or pipe laying required in private land under Statutory Notice. Space is available but is constrained both for now and the future.	No TW land available. Private land will need to be acquired. Pipe laying required in land that cannot be served with Statutory Notice. No extra space for growth/there is not enough space for the maximum Scheme Capacity.
Planning, socio-economic & environmental criteria				
Flood plain encroachment (loss of floodplain / need for compensation storage)	Percentage of site covered by flood plain.	Less than 25% of the site within Flood Zones 2 or 3 or site solely located within flood zone 1.	Between 25-50% of the site located within Flood Zones 2 or 3.	Over 50% of the site located within Flood Zones 2 or 3.
Landscape character sensitivity	Are any landscape designations affected?	No designations likely to be affected or effect likely to be positive. Site unlikely to affect a national landscape designation and not covered by a local landscape designation.	Designation of regional or local importance likely to be affected. The site lies within a locally designated landscape (e.g. Strategic Landscape Area).	Designation of national importance likely to be affected. Site lies wholly or partly within or is likely to impact the setting of a national landscape designation (National Park or AONB).
Views and visual amenity	Are any visually sensitive viewpoints affected?	Important / recognised viewpoints unlikely to be affected. Site lies at a distance greater than 5km from recognised viewpoints.	Important / recognised viewpoints may be affected. Site lies at a distance of between 3km and 5km from recognised viewpoints.	Highly visible / panoramic views likely to be affected. Site lies at a distance less than 3km from recognised viewpoints.
Nature conservation and biodiversity	Are any designated areas of nature conservation/biodiversity importance affected?	No national, regional or local designations likely to be adversely affected, or	Designation of regional or local importance likely to be adversely affected. Site	Designation of national importance and/or Ancient

Criterion Title	Stage 2 Criteria	Basis for assessment		
		Green	Amber	Red
		effect likely to be positive. Site does not contain sites of nature conservation importance.	includes or lies within a regionally designated site (County Wildlife Site, Local Nature Reserve).	Woodland likely to be adversely affected.
Archaeology and the historic environment	Are any heritage assets affected?	Heritage interest low. Site has heritage assets of low sensitivity or no records present.	Designation of regional or local importance likely to be adversely affected. No statutory designated sites present but site contains known non-designated heritage assets of high or moderate sensitivity.	Nationally Designated Heritage Assets likely to be affected. Site includes a national heritage asset (Listed Building, Registered Historic Park or Garden, Listed battlefield site, conservation area).
Impact on recreation	Are recreational sites or rights of way affected?	No recreational resource / right of way disrupted or affected. Sites with no formal recreational activities.	Recreational resource / right of way of local importance disrupted or affected. The site is likely to affect public rights of way.	Recreational resource / right of way of national or regional importance disrupted or affected. The site is likely to affect major recreational activities.
Impact of construction on traffic	Will construction traffic affect local roads / built up areas?	Route largely not through built up areas and/or likely to have limited impacts on local traffic.	Route partly through built up areas and/or likely to have moderate impacts on local traffic.	Route predominantly through built up areas and/or likely to have substantial impacts on local traffic.
Engineering criteria				
Network reinforcement requirements	Are significant network reinforcements likely to be needed to distribute water in the receiving water zone.	No change to existing infrastructure.	Limited modifications to existing network infrastructure.	Significant network reinforcement required.
Length of conveyance routes	Total length of all pipework in the donor zone that will be needed for the transmission of treated water to the receiving zone.	The length of the transfer is less than 10km.	The length of the transfer is between 10-20km.	The length of the transfer is more than 20km.
Pumping Head	Pumping head - Is the pumping head significant?	The pumping head is <50m.	The pumping head is between 50m-99m.	The pumping head is in excess of 100m.

Criterion Title	Stage 2 Criteria	Basis for assessment		
		Green	Amber	Red
Access during construction and operation	Are the means of access suitable, both for construction and operation?	Existing access arrangements are available and suitable for both construction and operation.	Existing access will be suitable for operations, temporary modifications will be needed for construction activities.	Existing access will require significant modification to make it suitable for both construction and operation.
Construction Complexity	Adverse ground conditions, major crossings, potential need for exceptional construction techniques.	No major crossings required or contaminated land risks identified.	1-5 major crossings required or contaminated land risks identified.	>5 major crossings required or significant contaminated land risks identified.
Operational Complexity	Option requires operational capabilities that are outside TW standard operating practices or outside TW supply area.	No issues/ Typical O&M procedures.	Operation of average complexity, with relatively complex processes/ operations and requirement for relatively substantial O&M procedures.	Operation of high complexity, with complex processes/ operations and requirement for major O&M procedures at regular intervals.

Table 3 Criteria for Stage 2 and basis for assessment of site performance

Criterion Title	Stage 3 Criteria	Basis for assessment		
		Green	Amber	Red
Property & legal criteria				
Ownership of site & tenancies	Assessment of ownership and tenancy constraints to any development	Land involved is under a single freehold title	Land involved has between 1 and 5 titles	More than 5 land titles involved
Planning, socio-economic & environmental criteria				
Flood plain encroachment	Are there likely effects on the floodplain?	No constraint posed	Issue or constraint can be overcome	Issue or constraint can be overcome, but will be very challenging
Landscape character sensitivity	Extent to which likely effects on landscape character & designations may be mitigated.	No mitigation required	Mitigation may be employed to reduce impacts to an acceptable level.	Adverse effects cannot be mitigated or constraint overcome resulting in adverse effects post mitigation
Views and visual amenity	Extent to which likely effects on visually sensitive receptors may be mitigated.	No mitigation required	Mitigation may be employed to reduce impacts to an acceptable level	Adverse effects cannot be mitigated or constraint overcome resulting in adverse effects post mitigation
Archaeology and the historic environment	Are there likely effects on heritage assets, including overall setting	No constraint posed	Issue or constraint can be overcome	Issue or constraint can be overcome, but will be very challenging
Nature conservation and biodiversity	Are there likely effects on sites / habitats	No constraint posed	Issue or constraint can be overcome	Issue or constraint can be overcome, but will be very challenging
Impact on recreation	Are there likely effects on recreational activities	No constraint posed	Issue or constraint can be overcome	Issue or constraint can be overcome, but will be very challenging
Non-traffic impact of construction on local residents	Potential to mitigate non-traffic construction impacts on local properties.	No constraint posed	Issue or constraint can be overcome	Issue or constraint can be overcome, but will be very challenging

Criterion Title	Stage 3 Criteria	Basis for assessment		
		Green	Amber	Red
Engineering criteria				
Length of conveyance routes	Length of conveyance route (s) and scale (pipe diameter or equivalent).	Very limited need to transfer water in new infrastructure	Moderately long or large diameter water transfer conveyance and/or making use of existing infrastructure where possible	Long water transfer conveyance which is comprised of entirely new infrastructure (>20km) and / or large diameter (>500mm) and / or significant tunnelling
Normalised cost	Cost presented as £/m3	<1 £/m3	>1 £/m3	>1.5 £/m3
Construction Complexity	More detailed review of construction requirements.	Construction complexity is anticipated to have no significant impacts on construction programme and cost.	Construction complexity is anticipated to have minor impacts on construction programme and cost.	Construction complexity is anticipated to have major impacts on construction programme and cost.

Table 4: Criteria for Stage 3 and basis for assessment of site performance

Feasibility Screening Updates

- 14 The overall changes to options and approach since WRMP19 are described in Section 7 Appraisal of Resource Options report. Specific changes applicable to Inter-Zonal Water Transfers are detailed in Table 2. This table should be read alongside the WRMP19 report.

WRMP19 Option Reference and name	ID Option Reference and name	Changes to the Option	WRMP19 Feasibility Screening Outcome	WRMP24 Feasibility Screening Outcome
New option at WRMP24	Reigate to Guildford	New option to WRMP24 identified through the WRSE regional transfers option identification review.	N/A: New option at WRMP24	The option has passed the feasibility screening and has therefore been taken forward to the constrained list.
New option at WRMP24	Cheam to Merton	New option to WRMP24 identified through the WRSE regional transfers option identification review.	N/A: New option at WRMP24	The option has passed the feasibility screening and has therefore been taken forward to the constrained list. This option was reviewed at range of capacities including 30 MI/d, 50 MI/d, 100 MI/d and 200 MI/d, these capacities were rejected. The rejection reason can be found in Appendix Q, Rejection Register.
New option at WRMP24	Woodmansterne to Epsom Downs	New option to WRMP24 identified through the WRSE regional transfers option identification review.	N/A: New option at WRMP24	The option has passed the feasibility screening and has therefore been taken forward to the constrained list.
New option at WRMP24	Kennet Valley to SWOX – 8.31 MI/d	New larger capacity option included in WRMP24, in accordance with WRSE review.	WRMP19 Constrained List included 2.3 MI/d and 6.7 MI/d capacities of this option.	Option rejected at option identification stage due to the lack of available water. At WRMP19 studies into water availability confirmed there is insufficient water available to supply 8.31 MI/d. The Kennet Valley to SWOX 2.3 MI/d and 6.7 MI/d options remain on the Feasible List of options. This is unchanged from WRMP19.
New option at WRMP24	T2ST Spur: Culham to Newbury (Potable)	New option at WRMP24	New option at WRMP24	T2ST spurs have been developed by the T2ST SRO as part of the Gate 2 process, these were identified too late in the process to complete the feasibility assessment in advance of WRMP24. Options have therefore not been assessed against feasibility criteria at this time. This will be revisited at WRMP29.

WRMP19 Option Reference and name	ID Option Reference and name	Changes to the Option	WRMP19 Feasibility Screening Outcome	WRMP24 Feasibility Screening Outcome
New option at WRMP24	T2ST Spur: Reading to Fobney (Potable)	New option at WRMP24	New option at WRMP24	Option was rejected at Stage 1. The rejection reasoning can be found in Appendix Q.

Table 5: Option changes since WRMP19

Updated Feasibility Assessment

Feasibility Assessment Approach

- 15 This section of the report outlines the updates made in WRMP24 to the WRMP19 feasibility assessment. This should be read alongside the WRMP19 Inter-Zonal Water Transfers feasibility report. Where options have been rejected through the screening process the rejection reason is recorded in Appendix Q rejection register.
- 16 A three-stage feasibility screening approach was taken at WRMP24, this approach is unchanged from WRMP19, details of the approach can be found in the WRMP19 Inter-Zonal Water Transfers feasibility report.
- 17 At WRMP19, fine screening was undertaken for all options which passed the feasibility screening. The WRMP19 fine screening took account of the estimated volume of water resources needs of Thames Water and, where applicable, neighbouring companies. However, the predicted water resources need for the region at WRMP24¹ is significantly higher than at WRMP19, owing to:
- increased sustainability reductions
 - a change to planning for water supply resilience for a 1 in 500 year drought from 1 in 200 at WRMP19²
- 18 Furthermore, potential new transfers identified by WRSE would allow new resource options in the Thames Water supply area to supply more of the WRSE region than was considered at WRMP19. For these reasons, the potential resource need is not being used as a consideration in the screening process at WRMP24. This is to avoid rejecting options based on Thames Water's need where there could be a regional benefit. At WRMP24 the fine screening stage has therefore been replaced by use of the WRSE investment model to compare options against cost, environmental, and resilience criteria.
- 19 The Stage 1, 2 and 3 assessment detailed in this report is unchanged from the methodology followed at WRMP19.

Stage 1 Assessment Results

- 20 At WRMP19 a total of 12 options were identified through the top-down and bottom-up investigations (as detailed in WRMP19 Inter-zonal Water Transfer feasibility report) for assessment at Stage 1. Three new transfer options were identified by WRSE:
- Reigate to Guildford Transfer (new option)
 - Cheam to Merton Transfer (new option)
 - Woodmansterne to Epsom Downs
- 21 In addition, two Thames to Southern Transfer spurs have been identified to supply water to Kennet Valley. These spurs have been developed by the T2ST SRO as part of the Gate 2 process.

¹ <https://wrse.uk.engagementhq.com/the-challenge>

² A 1 in 500 year event explained: This does not refer to an event that will occur every 500 years, it is better considered an event where there is a 1 in 500 chance of the event occurring in a given year, or a 0.2% chance. The probability of it happening in one year remains the same in each of the following years.

- 22 The T2ST spur options were identified too late in the process to complete the feasibility assessment in advance of WRMP24. Options have therefore been included in the regional investment model.
- 23 No changes have been made to the RAG status of the options assessed in WRMP19.
- 24 The Stage 1 assessment of all WRMP19 and WRMP24 options is presented in Table 3.1 according to the assessment of the criteria described in the WRMP19 Inter-Zonal Water Transfers feasibility report. Seven options passed the Stage 1 assessment.

From WRZ	To WRZ	WRSE ID	WRMP 19 ID	Description	Pass / Fail
Slough, Wycombe and Aylesbury (SWA)	SWOX (North)	N/A	N/A – rejected at Stage 1 in WRMP19. (WRMP14 option ID BS-IZTI-01)	Transfer water from Hambleden WTW to Long Crendon SR and from there to an existing pipeline at Milton. Option identified within WRMP14 (BS-IZTI-01)	Fail
SWA	SWOX (North)	N/A	N/A – rejected at Stage 1 in WRMP19. (WRMP14 option ID BS-IZTI-02)	Transfer water from Hambleden WTW to Long Crendon SR and from there to an existing service reservoir at Shotover. Option identified within WRMP14 (BS-IZTI-02)	Fail
SWA	SWOX (North)	N/A	N/A – rejected at Stage 1 in WRMP19. (WRMP14 option ID BS-IZTI-03)	Transfer water from Hambleden WTW to Long Crendon SR and from there to an existing pipeline at Marston. Option identified within WRMP14 (BS-IZTI-03)	Fail
SWA	SWOX (South)	TWU_SWA_EF-TFR_RE1_ALL_swoxswa south	N/A – rejected at Stage 1 in WRMP19. (WRMP14 option ID BS-IZTI-04)	Transfer water from Hambleden WTW to Nettlebed service reservoir and from there to Beggarsbush service reservoir at South Oxford area. Option identified within WRMP14 (BS-IZTI-04)	Fail
SWOX	SWA	N/A	N/A – rejected at Stage 1 in WRMP19.	Option identified within WRMP14 (BS-IZTI-05).	Fail

From WRZ	To WRZ	WRSE ID	WRMP 19 ID	Description	Pass / Fail
			(WRMP14 option ID BS-IZTI-05)	No pipeline route had been drawn.	
Henley	SWOX	TWU_SWX_HI-TFR_HEN_ALL_henley-swox2.4 TWU_SWX_HI-TFR_HEN_ALL_henley-swox5	RES-IZT-HEN-SWOX-NET	Transfer water from New Farm SR to Nettlebed service reservoir. Option identified within WRMP14 (BS-IZTI-06).	2.37 MI/d: Pass 5 MI/d: Pass
Kennet Valley	SWOX	TWU_SWX_HI-TFR_KVZ_ALL_kennet-swox2.3 TWU_SWX_HI-TFR_KVZ_ALL_kennet-swox6.7 TWU_SWX_HI-TFR_KVZ_ALL_kennet-swox8.31	RES-IZT-KEN-SWOX-CLV-2.28 RES-IZT-KEN-SWOX-CLV-6.74 8.31 MI/d is new to WRMP24	Transfer water from Pangbourne WTW to Cleeve WTW. Option identified within WRMP14 (BS-IZTI-07). Transfer water from Kennet Valley to SWOX – 8.31 MI/d. Option rejected due to lack of available water.	2.28 MI/d: Pass 6.74 MI/d: Pass 8.31 MI/d: Fail
Henley	SWA	TWU_SWA_HI-TFR_HEN_ALL_henley-swa2.4 TWU_SWA_HI-TFR_HEN_ALL_henley-swa5	RES-IZT-HEN-SWA-HAM	Transfer water from Sheeplands WTW to Hambleden WTW. Identified within WRMP14 (BS-IZTI-08), but with a different direction (From SWA to Henley). Two capacities identified at 2.4 MI/d and 5 MI/d both capacities of the option passed screening.	Pass
SWA	Kennet Valley	N/A	N/A – rejected at Stage 1 in WRMP19. (WRMP14 option ID BS-IZTI-09)	Option identified within WRMP14 (BS-IZTI-09). No pipeline route had been drawn.	Fail

From WRZ	To WRZ	WRSE ID	WRMP 19 ID	Description	Pass / Fail
Henley	Kennet Valley	N/A	RES-IZT-HEN-KEN-ERL	Transfer water from Sheeplands WTW to Early SR. Option identified within WRMP14 (BS-IZTI-10).	Pass
London	Other zones	N/A	N/A – rejected at Stage 1 in WRMP19. (WRMP14 option ID BS-IZTI-11)	Option identified within WRMP14 (BS-IZTI-11). No pipeline route had been drawn.	Fail
Guildford	Other zones	N/A	N/A – rejected at Stage 1 in WRMP19. (WRMP14 option ID BS-IZTI-12)	Identified within WRMP14 (BS-IZTI-12). No pipeline route had been drawn.	Fail
Cheam (SES)	Merton (LON)	TWU_LON_HI-TFR_SES_ALL_cheam-merton		Transfer water from Cheam (SES) to London ring main shaft at Merton (Thames Water). Option identified through the WRSE regional transfers option identification review and screened in WRMP24.	15 MI/d: Pass 30 MI/d: Fail 50 MI/d: Fail 100 MI/d: Fail 200 MI/d: Fail
Reigate (SES)	Guildford (GUI)	TWU_GUI_EF-TFR_REP_ALL_reigateto guires TWU_GUI_HI-TFR_SES_ALL_reigateto guildford20 TWU_GUI_HI-TFR_SES_ALL_reigateto guildford5		Transfer water from Reigate (SES) to Guildford (Thames Water). Option identified through the WRSE regional transfers option identification review and screened in WRMP24.	5 MI/d: Pass 10 MI/d: Pass
Woodmansterne (SES)	WTW Epsom Downs (LON)	TWU_LON_HI-TFR_SES_ALL_woodwtw-epsomdowns		Transfer water from Woodmansterne WTW (SES) to Epsom Downs (Thames Water). Option	Pass

From WRZ	To WRZ	WRSE ID	WRMP 19 ID	Description	Pass / Fail
		TWU_LON_EF- TFR_REP_ALL_woodeps omres		identified through the WRSE regional transfers option identification review and screened in WRMP24.	

Table 6: Stage 1 assessment of all options

- 25 Eight options and five capacity sub-options failed the Stage 1 assessment; the reasons for the option rejection are included in the WRMP24 Appendix Q - Scheme Rejection Register.
- 26 The T2ST spur: Reading to Fobney (Potable) was rejected at Stage 1 as Thames to Southern Transfer (T2ST) SRO has selected potable transfer from Culham as the preferred option whereas this option is a spur from a T2ST water transfer from Reading.
- 27 The following inter-zonal options are taken forward to Stage 2 (no change from WRMP19):
- Henley to SWOX
 - Kennet Valley to SWOX (up to 6.7 Ml/d)
 - Henley to SWA
 - Henley to Kennet Valley
- 28 The following inter-company options are taken forward to Stage 2 (no change from WRMP19):
- Wessex Water to SWOX (Flaxlands)
 - Wessex Water to SWOX (Ashton Keynes)
 - Wessex Water to SWOX (Blunsdon)
 - South East Water (Surrey Hills) to Guildford
 - South East Water (Hogsback) to Guildford
 - Sutton and East Surrey Water (Reigate) to Guildford (GUI)
 - Sutton and East Surrey Water (Cheam) to Merton (LON)
 - Sutton and East Surrey Water (Woodmansterne WTW) to Epsom Downs (LON)
- 29 Further details regarding the Stage 1 assessments are included for WRMP19 options in the Inter-Zonal Water Transfers Feasibility Reports.

Stage 2 assessment results

- 30 The Stage 2 assessment of the WRMP19 and WRMP24 options that passed Stage 1 is presented Table 3.2 providing the red, amber, green assessment of the criteria described in the WRMP19 Inter-Zonal Water Transfers Feasibility Reports. Thirteen options passed the Stage 2 assessment. Further details are included in the WRMP19 Inter-Zonal Water Transfers Feasibility report
- 31 No changes were made to the WRMP19 RAG assessment.

Criteria	Kennet Valley to SWOX -2.3	Kennet Valley to SWOX-6.7	Henley to SWA-2.37	Henley to SWA-5	Henley to Kennet Valley-2.37	Henley to SWOX-2.37	Henley to SWOX-5	South East Water to Guildford-10	South East Water to Guildford -10	WSX to SWOX 2.9	WSX to SWOX2.9	WSX to BLU-2.9	SES Reigate) to Guildford - 5	SES (Reigate) to Guildford – 20	SES (Cheam) to Merton – 15	SES (Woodmansterne WTW) to Epsom Downs – 10
Ownership of site and tenancies																
Floodplain encroachment																
Landscape character																
Views and visual amenity																
Nature Conservation and biodiversity																
Archaeology/historic environment																
Recreational impact																
Impact of construction on traffic																
Network reinforcements (downstream)																
Length of conveyance routes (upstream)																
Pumping head																
Suitable access																
Construction complexity																
Operational complexity																
Option taken through to Stage 3	P	P	P	P	T	P	P	P	T	P	P	T	P	P	P	P

Table 7: Stage 2 assessment of all options

- 32 Three options were rejected at Stage 2; the reasons for the option rejection are included in the WRMP24 Appendix Q - Scheme rejection register.
- 33 The following inter-zonal options are taken forward to Stage 3 (no change from WRMP19):
- Henley to SWOX (2.37 MI/d)
 - Henley to SWOX (5 MI/d) – capacity option added at WRMP19 after the feasibility assessment, therefore not included in the WRMP19 Feasibility Report
 - Kennet Valley to SWOX (2.3 MI/d)
 - Kennet Valley to SWOX (6.7 MI/d)
 - Henley to SWA (2.37 MI/d)
 - Henley to SWA (5 MI/d) – capacity option added at WRMP19 after the feasibility assessment, therefore not included in the WRMP19 Feasibility Report
- 34 The following inter-company options are taken forward to Stage 3 (no change from WRMP19):
- Wessex Water to SWOX, Flaxlands (2.9 MI/d)
 - Wessex Water to SWOX, Ashton Keynes (2.9 MI/d)
 - South East Water, Hogsback to Guildford (10 MI/d)
 - Sutton and East Surrey Water, Reigate to Guildford (5 MI/d)
 - Sutton and East Surrey Water, Reigate to Guildford (20 MI/d)
 - Sutton and East Surrey Water, Cheam to Merton (15 MI/d)
 - Sutton and East Surrey Water, Woodmansterne WTW to Epsom Downs (10 MI/d)

Stage 3 assessment results

- 35 Assessment against Stage 3 criteria of options has been undertaken for all options that passed Stage 2.
- 36 The Stage 3 assessment of the options that passed Stage 2 is presented in Table 3.3 providing the red, amber, green assessment of the criteria described in WRMP19 Inter-Zonal Water Transfers Feasibility report. Twelve options passed the Stage 3 assessment. Further details are included in the WRMP19 Inter-Zonal Water Transfers Feasibility report.
- 37 No changes were made to the WRMP19 RAG assessment.

Criteria	Kennet Valley to SWOX-2.3	Kennet Valley to SWOX6.7	Henley to SWA-2.37	Henley to SWA-5	Henley to SWOX-2.37	Henley to SWOX-5	SEW to Guildford-10	WSX to SWOX--2.9	SES Reigate) to Guildford - 5	SES Reigate) to Guildford - 20	SES Reigate) to Guildford - 20	SES (Cheam) to Merton - 15	SES (Woodmansterne WTW) to Epsom Downs - 10
Property and legal criteria													
Ownership of site and tenancies				TBC*	TBC*								
Engineering Criteria													
Floodplain encroachment													
Landscape character													
Views and visual amenity													
Nature Conservation and biodiversity													
Archaeology/historic environment													
Recreational impact													
Length of conveyance routes													
Normalised cost													
Construction complexity													
Option taken through to Further Screening	?	?	?	?	?	?	?	?	?	?	?	?	?

Table 8: Stage 3 assessment

*Note: The ownership of site and tenancies is TBC for this site as there is no available information around the registration of the land

- 38 One option was rejected at Stage 3; the reasons for the option rejection are included in the WRMP24 Appendix Q - Scheme rejection register.

The following inter-zonal options passed Stage 3 (no change from WRMP19):

- Henley to SWOX (2.37 MI/d)
- Henley to SWOX (5 MI/d) – capacity option added at WRMP19 after the feasibility assessment, therefore not included in the WRMP19 Feasibility Report
- Kennet Valley to SWOX (2.3 MI/d)
- Kennet Valley to SWOX (6.7 MI/d)
- Henley to SWA (2.37 MI/d)
- Henley to SWA (5 MI/d) – capacity option added at WRMP19 after the feasibility assessment, therefore not included in the WRMP19 Feasibility Report

- 39 The following inter-company options passed Stage 3 (no change from WRMP19):

- Wessex Water to SWOX, Flaxlands (2.9 MI/d)
- South East Water, Hogsback to Guildford (10 MI/d)
- Sutton and East Surrey Water, Reigate to Guildford (5 MI/d)
- Sutton and East Surrey Water, Reigate to Guildford (20 MI/d)
- Sutton and East Surrey Water, Cheam to Merton (15 MI/d)
- Sutton and East Surrey Water, Woodmansterne WTW to Epsom Downs (10 MI/d)

Option Verification and Conclusion

- 40 The validation discussion of risk and uncertainty in Section 7 of the WRMP19 Interzonal Transfer feasibility report remains unchanged. Where options have been rejected through the screening process the rejection reason is recorded in the WRMP24 Appendix Q rejection register.

Confirmation of feasible list of options

- 41 The following list of options are the confirmed list of feasible Inter-Zonal transfer options for WRMP24:
- Transfer 2.28 MI/d treated water from Pangbourne WTW (Kennet Valley) to Cleeve WTW (SWOX)
 - Transfer 6.74 MI/d treated water from Pangbourne WTW (Kennet Valley) to Cleeve WTW (SWOX)
 - Transfer 2.37 MI/d from Sheeplands WTW (Henley) to Hambleden WTW (SWA)
 - Transfer 5 MI/d from Sheeplands WTW (Henley) to Hambleden WTW (SWA)
 - Transfer 2.37 MI/d from New Farm SR (Henley) to Nettlebed SR (SWOX)
 - Transfer 5 MI/d from New Farm SR (Henley) to Nettlebed SR (SWOX)
 - Transfer 10 MI/d from Hogsback SR (SEW) to Mount SR (TW- Guildford).
 - Transfer 2.9 MI/d from Charlton WTW to Minety SR (Wessex) and from there to Flaxlands SR in South Swindon (SWOX)
 - T2ST Spur: Culham to Newbury (Potable)
 - Transfer 5 MI/d from Reigate (Sutton and East Surrey Water - SES) to Guildford (GUI)
 - Transfer 20 MI/d from Reigate (Sutton and East Surrey Water - SES) to Guildford (GUI)
 - Transfer 15 MI/d from Cheam (Sutton and East Surrey Water - SES) to Merton (LON)
 - Transfer 10 MI/d from Woodmansterne WTW (Sutton and East Surrey Water - SES) to Epsom Downs (LON)

Summary of Further Screening

- 42 This report summarises changes to the Interzonal transfer options up to the end of feasibility screening.
- 43 It should be noted that **the transfer of 2.9 MI/d from Charlton WTW to Minety SR (Wessex) and from there to Flaxlands SR in South Swindon (SWOX)** was rejected following further screening as Wessex Water have confirmed that the water is no longer available for transfer in 2040.

A. Reference information

The WRMP24 and Technical Appendices can be found on the Thames Water website at:
[Water resources](#) | [Regulation](#) | [About us](#) | [Thames Water](#)

Please contact consultation@thames-wrmp.co.uk for access to WRMP19 reports

