



Draft Water Resources Management Plan 2024

Resource Options – Inter-zonal Water Transfers
Feasibility Report Addendum

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Executive Summary

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.

This report acts as an addendum to Thames Water WRMP19 Resource Options Inter-Zonal Water Transfers Feasibility report, February 2018, Rev 01.

Three new Inter-Zonal transfer options have been identified at WRMP24, one new option and one new capacity of a WRMP19 option. 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 and from there to Flaxlands SR in South Swindon

In addition to the above feasible list the following new options have also been included in the WRSE investment model:

- two spurs from Thames to Southern Transfer to Kennet Valley
- Reigate to Guildford Transfer
- Cheam to Merton Transfer
- Woodmansterne to Epsom Transfer

These options were identified too late in the process to complete the feasibility assessment in advance of dWRMP24. Options have therefore not been assessed against feasibility criteria at this time. This will be further developed before the final issue of the WRMP.

1 Introduction

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.

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.

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 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.

The WRMP24 screening, option development and backchecking methodology is detailed in WRMP24 Section 7 - Appraisal of Resource Options.

This report summarises changes to the Inter-Zonal Water Transfers options up to the end of feasibility screening.

1.1 Structure of this report

Table 1.1 summarises the structure of this report.

Table 1.1 - 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

2 Updates since WRMP19

2.1 Option Identification

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.
- 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 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

2.2 Feasibility Screening Updates

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 2.1. This table should be read alongside the WRMP19 report.



Table 2.1: Option changes since WRMP19

WRMP19 Option Reference and name	WRSE 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.	New option at WRMP24	Reigate to Guildford option was included in investment modelling however due to reliance on demand reduction option is currently considered to be high risk. Option has therefore not been assessed against feasibility criteria at this time. This will be further developed before the final issue of the WRMP.
New option at WRMP24	Cheam to Merton	New option to WRMP24 identified through the WRSE regional transfers option identification review.	New option at WRMP24	Cheam to Merton was identified late in the WRMP process and has therefore not been screened at the time of issuing the draft WRMP document. This will be further developed before the final issue of the WRMP.
New option at WRMP24	Woodmansterne to Epsom	New option to WRMP24 identified through the WRSE regional transfers option identification review.	New option at WRMP24	Woodmansterne to Epsom was identified late in the WRMP process and has therefore not been screened at the time of issuing the draft WRMP document. This will be further developed before the final issue of the WRMP.
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 dWRMP24. Options have therefore not been assessed against feasibility criteria at this time. This will be further developed before the final issue of the WRMP.
New option at WRMP24	T2ST Spur: Reading to Fobney (Potable)	New option at WRMP24	New option at WRMP24	

3 Updated Feasibility Assessment

3.1 Feasibility Assessment Approach

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 the rejection register.

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.

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.

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.

The Stage 1, 2 and 3 assessment detailed in this report is unchanged from the methodology followed at WRMP19.

3.2 Stage 1 Assessment Results

At WRMP19 a total of 12 options were identified through the top-down and bottom-up investigations for assessment at Stage 1. One new capacity of a WRMP19 option was identified at WRMP24:

- Kennet Valley to SWOX 8.31 Ml/d (new option capacity)

Three new transfer options were identified by WRSE:

- Reigate to Guildford Transfer (new option)³

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.

³ Reigate to Guildford option included in investment modelling however due to reliance on demand reduction option is currently considered to be high risk. Option has therefore not been assessed against feasibility criteria at this time. This will be further developed before the final issue of the WRMP.



- Cheam to Merton Transfer (new option) ⁴
- Woodmansterne to Epsom⁵

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.

Both the WRSE transfer options and the T2ST spur options these were identified too late in the process to complete the feasibility assessment in advance of dWRMP24. Options have therefore not been assessed against feasibility criteria at this time, but have been included in the regional investment model. This will be further developed before the final issue of the WRMP.

No changes have been made to the RAG status of the options assessed in WRMP19. The new WRMP24 Kennet Valley to SWOX 8.31 MI/d option was rejected due to water resource availability.

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. Four options passed the Stage 1 assessment.

⁴ Cheam to Merton was identified late in the WRMP process and has therefore not been screened at the time of issuing the draft WRMP document. This will be further developed before the final issue of the WRMP.

⁵ Woodmansterne to Epsom was identified late in the WRMP process and has therefore not been screened at the time of issuing the draft WRMP document. This will be further developed before the final issue of the WRMP



Table 3.1: Stage 1 assessment of all options

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 Hambleton 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 Hambleton 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 Hambleton 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_swoxswasouth	N/A – rejected at Stage 1 in WRMP19. (WRMP14 option ID BS-IZTI-04)	Transfer water from Hambleton 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. (WRMP14 option ID BS-IZTI-05)	Option identified within WRMP14 (BS-IZTI-05). No pipeline route had been drawn.	Fail
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 Hambleton WTW. Identified within WRMP14 (BS-IZTI-08), but with a different direction (From SWA to Henley). Two capacities	Pass



From WRZ	To WRZ	WRSE ID	WRMP 19 ID	Description	Pass / Fail
				identified at 2.4 MI/d and 5 MI/d both capacities of the option passed screening.	
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
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

Eight options and one capacity sub-option failed the Stage 1 assessment; the reasons for the option rejection are included in the WRMP24 Appendix Q - Scheme Rejection Register.

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

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

Further details regarding the Stage 1 assessments are included for WRMP19 options in the Inter-Zonal Water Transfers Feasibility Report.

3.3 Stage 2 assessment results

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 Report. Seven options passed the Stage 2 assessment. Further details are included in the WRMP19 Inter-Zonal Water Transfers Feasibility report.

No changes were made to the WRMP19 RAG assessment.



Table 3.2: Stage 2 assessment of all options

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
Ownership of site and tenancies	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Floodplain encroachment	Yellow	Yellow	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Landscape character	Red	Red	Red	Red	Green	Red	Red	Red	Red	Green	Green	Green
Views and visual amenity	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Green	Green	Green
Nature Conservation and biodiversity	Green	Green	Yellow	Yellow	Green	Red	Red	Green	Red	Green	Green	Green
Archaeology/historic environment	Green	Green	Red	Red	Red	Green	Green	Green	Green	Green	Green	Green
Recreational impact	Red	Red	Red	Red	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow
Impact of construction on traffic	Yellow	Yellow	Yellow	Yellow	Red	Green	Green	Green	Green	Green	Green	Yellow
Network reinforcements (downstream)	Yellow	Yellow	Yellow	Yellow	Green	Green	Green	Green	Yellow	Green	Green	Green
Length of conveyance routes (upstream)	Yellow	Yellow	Green	Green	Yellow	Green	Green	Green	Red	Yellow	Yellow	Red
Pumping head	Red	Red	Yellow	Yellow	Yellow	Red	Red	Yellow	Red	Yellow	Yellow	Yellow
Suitable access	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Construction complexity	Yellow	Yellow	Yellow	Yellow	Red	Yellow	Yellow	Yellow	Red	Green	Yellow	Red
Operational complexity	Green	Green	Green	Green	Green	Green	Green	Yellow	Yellow	Green	Green	Green
Option taken through to Stage 3	✓	✓	✓	✓	✗	✓	✓	✓	✗	✓	✓	✗

Three options were rejected at Stage 2; the reasons for the option rejection are included in the WRMP24 Appendix Q - Scheme rejection register.

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

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)

3.4 Stage 3 assessment results

Assessment against Stage 3 criteria of options has been undertaken for all options that passed Stage 2.

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. Six options passed the Stage 3 assessment. Further details are included in the WRMP19 Inter-Zonal Water Transfers Feasibility report.

No changes were made to the WRMP19 RAG assessment.



Table 3.3: Stage 3 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	WSX to SWOX- 2.9
Property and legal criteria									
Ownership of site and tenancies			TBC*	TBC*					
Environmental criteria									
Floodplain encroachment									
Landscape character									
Views and visual amenity									
Nature Conservation and biodiversity									
Archaeology/historic environment									
Recreational impact									
Engineering criteria									
Length of conveyance routes									
Normalised cost									
Construction complexity									
Option taken through to Fine Screening	✓	✓	✓	✓	✓	✓	✓	✓	✗

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



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

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)

4 Option Verification and Conclusion

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.

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)

In addition to the above feasible list the following new options have also been included in the WRSE investment model:

- two spurs from Thames to Southern Transfer to Kennet Valley
- Reigate to Guildford Transfer
- Cheam to Merton Transfer
- Woodmansterne to Epsom

These options were identified too late in the process to complete the feasibility assessment in advance of dWRMP24. Options have therefore not been assessed against feasibility criteria at this time. This will be further developed before the final issue of the WRMP.



A. Reference information

The draft 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

