

Regulators' Alliance for Progressing
Infrastructure Development

May 2023



Updated Strategic Resource Option (SRO) Information from RAPID Gate Two Draft Decisions



Contents

Background	2
Strategic resource options (SRO)	3
1: South Lincolnshire Reservoir (SLR)	3
2: Fens Reservoir	3
3: South East Strategic Reservoir Option (SESRO)	4
4: Severn to Thames Transfer (STT)	4
5: Thames to Southern Transfer	5
6: Anglian to Affinity (A2AT)	5
7: Severn Trent Sources (STS)	6
8: Thames to Affinity Transfer (T2AT)	6
9: Grand Union Canal (GUC)	7
10: Minworth	7
11: Northwest Transfer	8
12: London Water Recycling (London Effluent Reuse)	8
13: Cheddar 2 Source and Transfer (previously West Country North Sources)	9
14: Poole Effluent Recycling and Transfers	10

Background

In November 2022, we received 14 Gate Two submissions as part of the RAPID Gated Process. RAPID's [draft decisions](#) for these have now been published, which are summarised in this document. Final decisions for these solutions are expected to be made in June 2023 unless stated otherwise.

Please note that the Upper Derwent Valley Reservoir Expansion and Mendip Quarries have not been included due to their Gate Two submissions being expected in July 2023.

All Net Present Value (NPV) expenditure information included in this document is in 2020/21 prices. It is important to recognise that the dates displayed for procurement and construction are those proposed by promoting companies and these are subject to change when RAPID and Ofwat consider the most appropriate sequencing of solutions to smooth out the pipeline as the projects progress.

To note on the competitive delivery side, Ofwat also published the [PR24 Final Methodology](#) in December 2022. Here, the competitive procurement approach sets out that companies should assess discrete projects as DPC, by default, for projects that are at least **£200 million totex**.

Strategic resource options (SRO)

1: South Lincolnshire Reservoir (SLR)

SLR is a new reservoir project which is being promoted by Anglian Water. Affinity Water will formally cease to be a solution partner from Gate Two onwards.

This solutions' proposed water to be abstracted when river flows allow and transferred to the newly constructed reservoir. SLR will have a potential reservoir capacity of 50,000 MI.

Preferred delivery route: **SIPR**

South Lincolnshire Reservoir (SLR)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Reservoir	£2.33 billion	Q4 2025	2029	2040	Estimated as 250 years

2: Fens Reservoir

The Fens Reservoir is being promoted by both Anglian Water and Cambridge Water. The proposed site for this is within the Fenland District of Cambridgeshire. It is proposed to be used for winter storage and could have a capacity of 50,000 MI and a supply of 87 MI/day, which would benefit 250,000 homes in Cambridgeshire. Water will be abstracted from the River Great Ouse and River Delph when flows allow. The reservoir must be in supply by 2035 – 2037 and is expected to have a construction programme of eight years.

A final decision on whether Fens can progress to Gate Three in the RAPID process is expected to be made in January 2024 on the basis of a Conditional Review Point¹.

Preferred delivery route: **SIPR**

¹ A Conditional Review Point may be set in between the gated assessments. They are not automatically set for all solutions but are used where partner regulators want more information before making a final recommendation. Based on the extra evidence the solutions provide in response to priority actions, partner regulators will make a final recommendation on progression beyond the Conditional Review Point to Ofwat.

Fens Reservoir					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Reservoir	£1.96 billion	Q3 2025	Q2 2029	2037	Estimated as 250 years

3: South East Strategic Reservoir Option (SESRO)

SESRO is a new reservoir in Oxfordshire being developed by Thames Water and Affinity Water (and delivered by Thames Water only), which is expected to be built by the end of 2038 at the latest. The preferred option for this asset could store up to 150mm³ of water and supply a maximum of 185 Ml/d once complete. It proposes to provide storage and a resilient supply of raw water to the River Thames during periods of low flow for release and subsequent re- abstraction in London or for transfer to other water companies in the South East.

This solution is also linked to Severn to Thames Transfer (STT), Thames to Southern Transfer (T2ST) and the Thames to Affinity Transfer (T2AT).

Preferred delivery route: **SIPR**

South East Strategic Reservoir Option (SESRO)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Reservoir	£2.3 billion	Q1 2026	2029	2038	Estimated as 145 years

4: Severn to Thames Transfer (STT)

The STT solution is being developed by Severn Trent Water, United Utilities and Thames Water. The solution is a water transfer from sources in the north west of England and the midlands to the south east, to help support this area during droughts. The solution proposes to link the River Severn (with additional sources of water provided by Severn Trent Water and United Utilities) to the River Thames via new pipeline.

Preferred delivery route: **DPC**

Severn to Thames Transfer (STT)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water transfer	£ 1.47 billion	Q2 2024 for Vyrnwy Bypass Pipeline Q4 2028 for interconnector	2027 for Vyrnwy Bypass Pipeline 2029 for interconnector	2029 for Vyrnwy Bypass Pipeline* 2033 for interconnector	Estimated as 50 years +

5: Thames to Southern Transfer

This solution is being developed by Thames Water and Southern Water. It proposes two preferred options for a new transfer for water from Thames Water's Swindon and Oxfordshire area to Southern Water's Hampshire area to help improve resilience, with the earliest commissioning date of 2040. The transfer will be dependent on the development of STT and SESRO. This scheme could have a maximum capacity of 120 Ml/d.

It has been recommended that post Gate Two, Southern Water take on greater responsibility for this solution with a 90:10 split (previously 50:50) between the two companies.

Preferred delivery route: **DPC**

Thames to Southern Transfer					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water transfer	£877 million	Q1 2027	2030	2036	Estimated as 100 years

6: Anglian to Affinity (A2AT)

The A2AT is a project being developed by Anglian Water. Affinity Water will formally cease to be a solution partner from Gate Two onwards.

The remaining scope of the solution proposes a transfer from Peterborough to Grafham (up to 150 Ml/d option) as part of the SLR solution, taking water to Anglian's customers in the Ruthamford area. This is recommended to be progressed to Gate Three.

Preferred delivery route: **DPC**

Anglian to Affinity (A2AT)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water transfer	£275.9 million	Q3 2025	Q1 2032	2039 - 2041	Estimated as 20 years +

7: Severn Trent Sources (STS)

This solution is being developed by Severn Trent Water. This will utilise treated final effluent from the Netheridge Wastewater Treatment Works to provide raw water support to STT. The solution forms part of the wider River Severn to River Thames Transfer system composed of STS River Severn to River Thames Transfer (STT) and North West Transfer (NWT). This scheme has been deemed unsuitable for competitive delivery based on discreteness.

This solution is expected to progress to Gate Three subject to Severn Trent addressing a number of actions.

Preferred delivery route: **In-House**

Severn Trent Sources (STS)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water recycling	£139.1 million	Q1 2027	2029	2031	Estimated as 80 years

8: Thames to Affinity Transfer (T2AT)

The solution T2AT being developed Thames Water and Affinity Water proposes to transfer raw water from a number of potential sources available from Thames Water in the London region to Affinity Water's Central supply region. The preferred solution proposes transferring up to 100 Ml/d annual average to Affinity Water. It has been recommended that the scope of this solution is reduced post Gate Two to just one option:

- Lower Thames Reservoir (LTR) (Preferred): Water will be abstracted from the River Thames (supplemented by SESRO) and transported to a new water treatment works in the Iver region via the new connection.

Preferred delivery route: **DPC**

Thames to Affinity Transfer (T2AT)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water transfer	£450 million	Q3 2031	2034	2040	Estimated as 100 years

9: Grand Union Canal (GUC)

This solution is being developed by Affinity Water, Severn Trent Water and the Canal and River Trust. This solution proposes to transfer surplus water from Severn Trent Water's supply area to areas of water deficit in Affinity Water's supply area. It is dependent on the delivery of Minworth (see below).

It will use the existing canal infrastructure and a new pipeline to convey a source of raw water from the Minworth SRO to the GUC. The south section of the GUC will have water abstracted from it and treated, before being distributed to Affinity Water's customers. This solution has been deemed unsuitable for competitive delivery by the companies based on the discreteness test.

This solution is recommended to be progressed to Gate Three, subject to the decision made on Minworth.

Preferred delivery route: **In-House**

Grand Union Canal (GUC)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water Transfer	£234 - £417 million (depending on option)	Q1 2026	Q1 2029	Q4 2032	Estimated as 100 years (pipeline) and 250 years for embankment works

10: Minworth

The solution is a joint development from Affinity Water and Severn Trent. The solution will provide a supply of raw water to either the Grand Union Canal (GUC) SRO, the Severn Thames Transfer (STT) SRO, or a combination of both. The combined option could have an output of up to 215Ml/d. Minworth consists of a new treatment process at Minworth WwTW, with treated wastewater transferred via new pumping stations and pipelines to the Coventry Canal, the River Avon, or both.

This solution is expected to progress to Gate Three subject to Severn Trent addressing a number of actions.

Preferred delivery route: **DPC**

Minworth					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water recycling	£285 million - £322.3 million depending on the option	Q4 2024	Q4 2027	Q1 2031	Estimated as 100 years

11: Northwest Transfer

This solution is being developed by United Utilities. The solution forms part of the wider Severn to Thames Transfer system composed of NWT, River Severn to River Thames Transfer (STT) and Severn Trent Sources (STS). It involves developing new water sources to offset water made available for transfer and enabling works on part of the Vyrnwy Aqueduct (UU's distribution system). It will be used to maintain supply resilience within the Water Resources West region as well as the south east via the STT SRO. This solution has a proposed capacity of 205 Ml/d.

This solution is expected to progress to Gate Three subject to United Utilities addressing a number of actions.

Preferred delivery route: **DPC**

Northwest Transfer					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water transfer	£852.45 million	2024	2026	2033	Estimated as 80 years

12: London Water Recycling (London Effluent Reuse)

This solution is being led by Thames Water. It aims to provide a reliable and sustainable supply of water to support the flow in the River Thames, using treated wastewater. It has been recommended that three potential schemes progress to Gate Three:

- Mogden Water Recycling Scheme
- Beckton Water Recycling Scheme
- Teddington Direct River Abstraction (DRA)

Abstracted effluent in these schemes would be treated through an Advanced Water Recycling Plant or Tertiary Treatment Plan and discharged into the River Thames or River Lee Diversion, where it can be abstracted as a raw water resource. It is proposed that Beckton could have a maximum capacity of 300 Ml/d and Teddington and Mogden combined could be 200 Ml/d. It has been recommended by Thames Water that the Teddington scheme remains in house.

Preferred delivery route: **In-House**

London Water Recycling (London Effluent Reuse)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water recycling	£237 million to £913 million depending on option	Q4 2025	Q1 2027	2031	Estimated as 100 years (pipeline) and 250 years for embankment works

13: Cheddar 2 Source and Transfer (previously West Country North Sources)

This solution is being developed by Bristol Water and Wessex Water and involves the construction of a second reservoir in the Cheddar region. This has a potential capacity of 9,000 Ml. Water would then be treated at a new treatment works and transferred via a 55km pipeline to a strategic service reservoir in Wessex Water's eastern region, helping to boost resilience across the whole south west region.

Final decisions for Gate Two are expected to be published in July 2023.

Preferred delivery route: **DPC**

Cheddar 2 Source and Transfer (previously West Country North Sources)					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
New reservoir and water transfer	£589.3 million	Q4 2027	2030	2035	Estimated as 60 years


14: Poole Effluent Recycling and Transfers

This solution is also being promoted by South West Water and Wessex Water. The design includes a new pumping station at Poole STW, approximately 7km of pipeline to transfer the diverted effluent to a water recycling plant which provides supplementary treatment before discharging the water to the River Stour via a constructed wetland. The abstraction at Longham lakes will then be increased to enable the additional water to be taken alongside the existing licence quantities.

Final decisions for Gate Two are expected to be published in July 2023.

Preferred delivery route: **DPC**

Poole Effluent Recycling and Transfers					
Type	NPV of capex	Proposed procurement start date	Proposed construction start date	Proposed operational date	Asset life
Water transfer and water recycling	£136.7 million	Q1 2028	2030	2035	Estimated as 80 years



Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA
Phone: 0121 644 7500

© Crown copyright 2023

This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3.

Where we have identified any third party copyright information, you will need to obtain permission from the copyright holders concerned.

This document is also available from our website at www.ofwat.gov.uk.

Any enquiries regarding this publication should be sent to mailbox@ofwat.gov.uk.

OGI