

**Reference:** Strategic Planning / Water

**Oxfordshire County Council  
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Ofwat

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**Corporate Director for  
Environment and Place**

**28 October 2021**

Dear Sir / Madam

**Regulators' Alliance for Progressing Infrastructure Development (RAPID)  
Draft Decisions for Strategic Resource Options – Gate One to Gate Two  
Representations closing date: 29 October 2021**

Further to the opportunity to comment on RAPID's draft decisions on the gate one submissions for strategic water supply options, please find attached as Appendix 1 to this letter, comments from Oxfordshire County Council.

Given the initially short representation period, from 14 September to 8 October 2021, the comments have been put together by officers. These representations do not fetter any future position the County Council may wish to take on the various proposals. We acknowledge that the representation period was extended to 29 October 2021 and have further considered our comments over the extended time. We have seen the comments made by Vale of White Horse District Council, the Group Against Reservoir Development (GARD) and Drayton District Councillor  all of which we recommend to RAPID.

We understand that in respect of the South East Strategic Reservoir Option (SESRO), RAPID is reviewing the redactions to the documents and that the representation period in respect of that option is extended to 19 November 2021. We therefore may lodge further comments before 19 November 2021. We understand that Ofwat's final decisions will be published on 8 December 2021.

We note that RAPID's gate two submissions are due on 31 October 2022 and that there will also be a representation period on that, which is expected between 31 January 2023 and 14 March 2023. We also expect public consultation on the joint water company regional plans and individual water company plans during 2022.

Yours faithfully

  
**Assistant Director Strategic Infrastructure and Planning**

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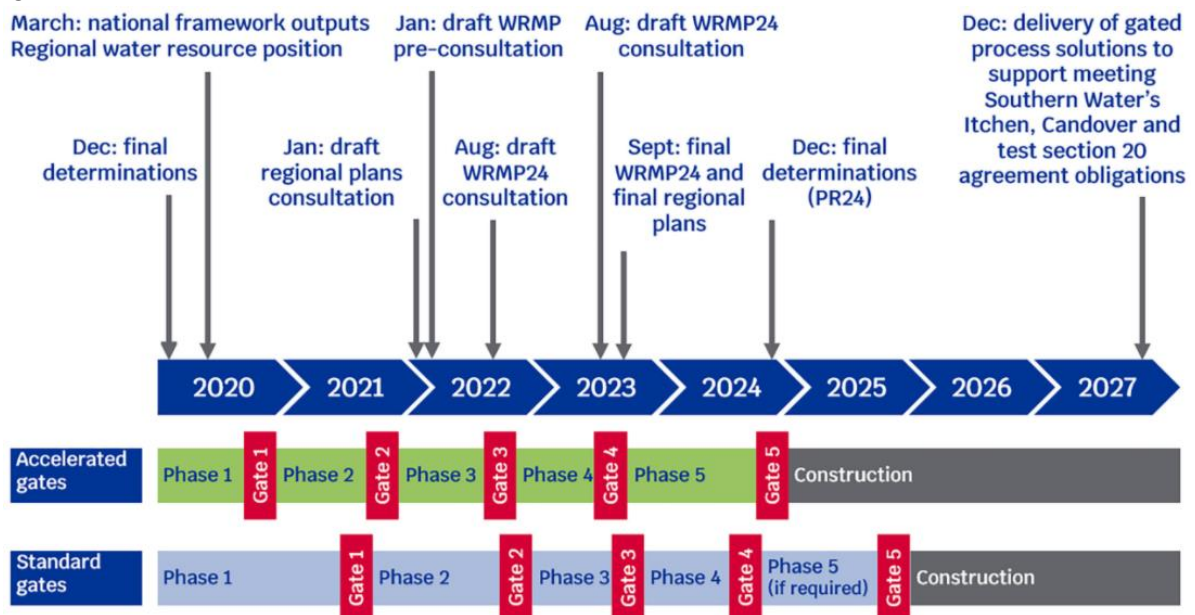
## APPENDIX 1

### OXFORDSHIRE COUNTY COUNCIL RESPONSE ON RAPID'S DRAFT DECISIONS October 2021

#### The Gated Process

- Figure 1 below from Ofwat's website shows the gated process that the Regulators' Alliance for Progressing Infrastructure Development (RAPID) is undertaking. Oxfordshire County Council's interest is predominantly in the options which are progressing through the standard gates. The standard gate one submissions from the water companies closed on 5 July 2021. Our comments below are on RAPID's draft decisions released on 14 September 2021. At gate one, all proposals are expected to proceed to gate two, meaning that companies can continue to spend ring-fenced funding on their investigations to gate two which closes on 31 October 2022. RAPID's final gate one decisions, which are expected on 8 December 2021 will indicate what the regulators expect by the gate two deadline.

Figure 1



- In 2019, Ofwat determined how much total funding would be available to the water companies to develop the various proposals going through the gated process. The maximum allowance to develop the schemes with reference to the Ofwat document<sup>1</sup> is as follows in Table 1 (listed in order of maximum funding). Of the list below, it is clear that the South East Strategic Reservoir is the biggest and most complex scheme given that a significant amount of public funding has been apportioned to investigating it.

Table 1

Name	Companies	Maximum funding
South East Strategic Reservoir	Thames Water / Affinity Water	£121.7m
Severn to Thames Transfer	Thames Water / Severn Trent Water / United Utilities	£66.6m

<sup>1</sup> [PR19-final-determinations-Strategic-regional-water-resource-solutions-appendix.pdf \(ofwat.gov.uk\)](#)

London Effluent Reuse	Thames Water	£62.9m
South Lincolnshire Reservoir	Anglian Water / Affinity Water	£38.6m
Fenland Reservoir	Anglian Water / Cambridge Water	£22.68m (new 2021)
Grand Union Canal Transfer	Severn Trent Water / Affinity Water	£18.0m
Thames to Southern Transfer	Thames Water / Southern Water	£15.0m
Vyrnwy Reservoir	United Utilities	£14.7m
Anglian to Affinity Transfer	Anglian Water / Affinity Water	£11.5m
Thames to Affinity Transfer	Thames Water / Affinity Water	£10.9m
Minworth Effluent Reuse	Severn Trent Water / Affinity Water	£9.0m
Severn Trent Water sources	Severn Trent Water	£5.3m

## Overview Document<sup>2</sup>

3. The overview document provided on Ofwat's website about the September draft decisions compares the range of estimated costs of each of the 15 strategic water resource options as per Table 2 below. The costs have not been material to RAPID's draft decisions, but costs will be an important factor in the regional planning process. The South East Strategic Reservoir Option (SESRO) is one of the most expensive options using any of the measures in Table 2. The Severn to Thames Transfer (STT) is another one of the expensive options. Both of those options (which could potentially both be used) affect Oxfordshire. We accept that cost has not been considered in RAPID's determinations but note that we may comment on this during the regional plan process. In addition, we consider that any strategic option should only be pursued with a full understanding of the forecast need for additional water and the water savings that can first be achieved through reduced pipe leakage, innovation and reduced water consumption.

Table 2

		Gate one Submission			
		Min Solution Cost NPV (£ million)	Max Solution Cost NPV (£ million)	Min £/Ml	Max £/Ml
Package 1	SESRO	£ 1,051.4	£ 1,437.7	804.79	2,472.35
	T2AT	£ 184.2	£ 402.6	413.81	756.17
	T2ST	£ 604.5	£ 1,307.9	930.45	2,107.95
Package 2	SLR	£ 1,257.7	£ 1,814.4	1,189.32	2,044.68
	A2AT	£ 622.5	£ 1,229.5	892.01	1,974.21
	Fenland	£ 1,154.9	£ 1,471.3	2,008.48	2,558.73
	GUC	£ 500.0	£ 1,160.0	-	-
Package 3	London Reuse	£ 275.5	£ 2,381.7	448.50	1,820.32
	Minworth	£ 25.8	£ 482.6	32.54	364.13
Package 4	Vrynwy	£ 25.1	£ 271.1	35.91	177.89
	UU Sources	£ 9.2	£ 545.3	115.11	1,094.49
	STW Sources	£ 27.3	£ 80.5	96.45	215.08
	STT	£ 67.0	£ 1,706.0	89.85	1,978.42
Package 5	WCS Sources	£ 174.2	£ 967.0	-	-
	WCS Transfer	£ 168.6	£ 277.0	-	-

<sup>2</sup> [Standard gate one key themes and assessment overview - Ofwat](#)

4. Table 3 below shows that RAPID’s allowance for spend was highest for SESRO and second highest for STT. All solutions underspent against their gate one allowances.

Table 3

Solution	SESRO	T2AT	T2ST	SLR	A2AT	GUC	London Reuse	Minworth	United Utilities sources	Vyrnwy Aqueduct	Severn Trent Sources	Severn To Thames Transfer	WCS Sources	WCS Transfer
Gate one allowance, (£m) (2017-18 prices)	12.17	1.09	1.50	3.86	1.15	1.80	6.29	0.9	0.72	1.47	0.53	6.66	0.55	0.40
Gate one spend, (£m) (2017-18 prices)	1.75	0.86	0.80	2.50	0.55	1.62	2.78	0.74	0.67	1.09	0.31	4.49	0.52	0.31

5. The overview document indicates that gate two submissions will be expected to include further consideration of the wider resilience, social and economic benefits of solutions and that this should include local economic and amenity value. For each option pursued, we agree that there is a need for further assessment of effects as we have concerns about the solutions and their local economic, social and amenity effects. We are particularly concerned at the permanent transport, flood risk, biodiversity, heritage, landscape effects, and temporary construction effects of options affecting Oxfordshire.
6. We favour the use of existing or refurbished infrastructure, such as the canal transfers, or infrastructure which is underground, such as pipes. RAPID should ask that assessments identify the impacts of the various options on local populations, both during construction and afterwards. Of all the options, we consider that SESRO sticks out as impacting on large numbers of residents, in a relatively densely populated area that is subject to further development proposals.
7. Gate one submissions did not include much water resources modelling and the regional reconciliation process only began in earnest in September 2021. A Water Resources South East webinar has now been held for those interested in the regional reconciliation process (30 September 2021). RAPID is seeking that modelling be accelerated as this is needed for the refinement of solutions and investigations of their likely utilisation i.e. the frequency and volume at which a solution is used. RAPID is also seeking in-combination assessments for gate two reviewing the potential environmental impacts and benefits of various combinations of options. For each option pursued, we agree that there is a need to further investigate the likely utilisation of each and the in-combination effects.
8. RAPID is seeking gate two assessment evidence driving down whole-life carbon within design. RAPID would like to see solutions embracing innovative designs and opportunities to generate or be powered by renewable energy and/or sequester

carbon. For each option pursued, we agree that there is a need for comparable carbon assessments as we expect a focus on meeting net zero carbon commitments, and the carbon footprint of each may be a key factor in choosing between options.

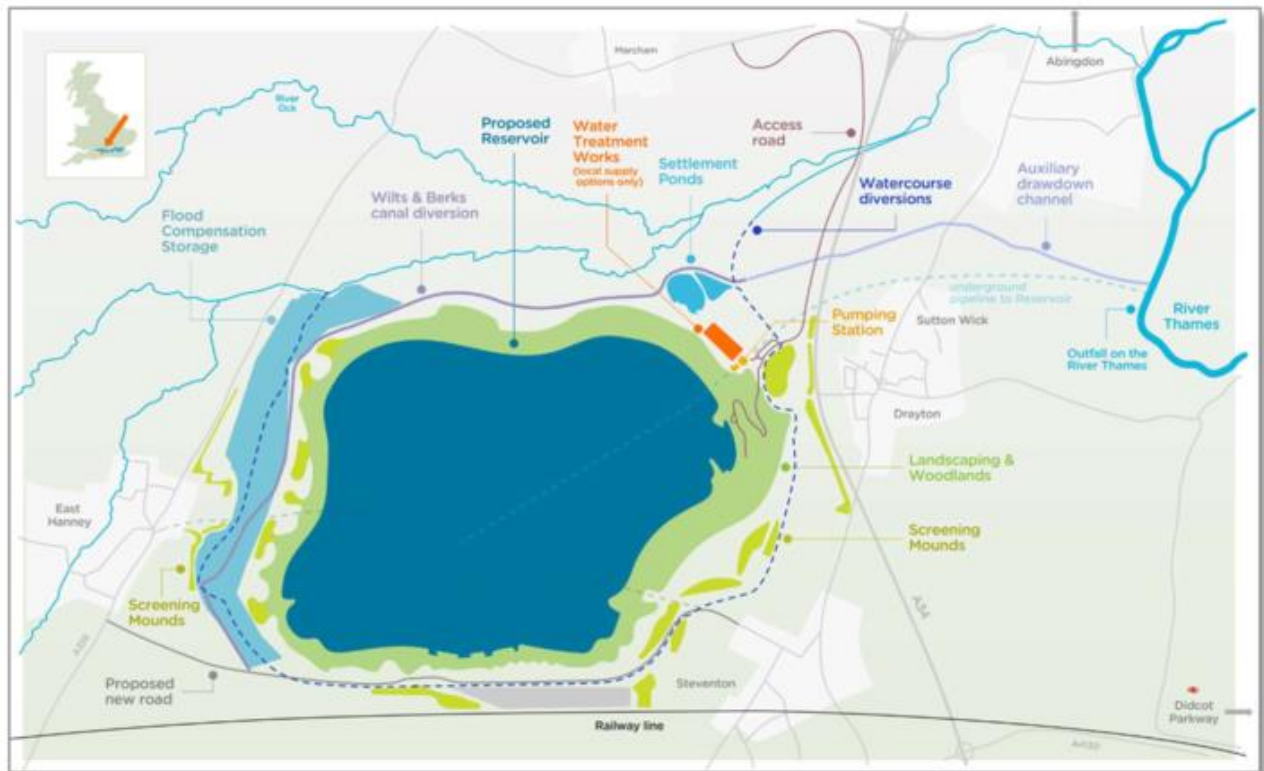
9. RAPID should require that options are assessed so as to compare energy use. We note that the period of construction for different uses will vary, and SESRO is likely to be the longest. Over the coming years, there could be energy shortages and certainly there will be a limited supply of renewable or zero carbon power. Even if renewable power is envisaged, there will be an opportunity cost at the moment as that renewable power could otherwise decarbonise the grid. Therefore, there should be accounting on when construction happens in relation to the amount of renewable energy sourcing the national grid which is currently only about 26%. Whether low carbon hydrogen will be available and used, for example for heavy vehicles, also needs to be considered. Low energy demand once in use will not be an effective mitigation for high energy use in construction.
10. Documents provided to RAPID should be available for public viewing unredacted wherever possible. The need to review the redactions made at gate one has resulted in an additional timeframe for comments on SESRO. While we appreciate that there are some matters which are commercially sensitive, we expect that every effort should be made to be transparent so that interested parties can review detailed information.

### **South East Strategic Reservoir Option (SESRO)**

11. This is the proposal for a reservoir to be located between Abingdon, Steventon and East Hanney in Oxfordshire covering an area of up to approximately 7km<sup>2</sup>. It would store raw water from the River Thames at times of abundant flow, to be released back into the River when needed for subsequent re-abstraction further downstream (recognising there will be losses en route). Elements of the proposal include: bunds at an estimated height of 15m to 25m above natural ground level; screening mounds; an underground pipeline from the River Thames; an auxiliary drawdown channel; new and realigned roads; a railway siding; and visitor facilities.
12. The South East Strategic Reservoir is being put forward jointly by Thames Water and Affinity Water and the maximum cost as set out in Table 2 above is some £1,400m. As it would be located in Thames Water's area, it is proposed in conjunction with a separate Thames Water to Affinity Water transfer which itself has an estimated maximum cost in Table 2 above of some £400m. Additional transfers are also said to be possible such as a Thames Water to Southern Water transfer which in Table 2 above has an additional estimated maximum cost of some £1,300m.
13. The reservoir proposal includes six options of various sizes and phasing. Figure 2 below shows the single phase largest option which would store up to 150Mm<sup>3</sup> of water. The different sized options are said to deliver a deployable output of between 68 Ml/d (30 Mm<sup>3</sup>, phase 1 of 2) and 293 Ml/d (150 Mm<sup>3</sup>, single phase) for London, which could potentially be further shared across the South East.
14. RAPID is allowing for the full claim of £1.75m for costs spent on gate one activities. RAPID's overall assessment for the submission at gate one is that it is good (meets expectations).

15. The draft decision document identifies the need for further investigations. We agree that there is a need for further investigations in respect of the South East Strategic Reservoir Option. Together with the local district councils, Oxfordshire County Council needs to be involved in considering the detail of the reservoir proposal.

Figure 2



### **Severn to Thames Transfer (STT)**

16. This is the proposal to transfer water from the River Severn to the River Thames. The maximum cost in Table 2 above is some £1,700m. In order to support transferring water from the River Severn, other supply solutions for the River Severn are also being investigated: Vyrnwy Reservoir, Minworth Effluent Reuse, and other Severn Trent Water sources, which each have separate costs as set out in Table 2.

17. The first option to get the water from the River Severn involves a pipeline from Deerhurst to Culham in Oxfordshire.

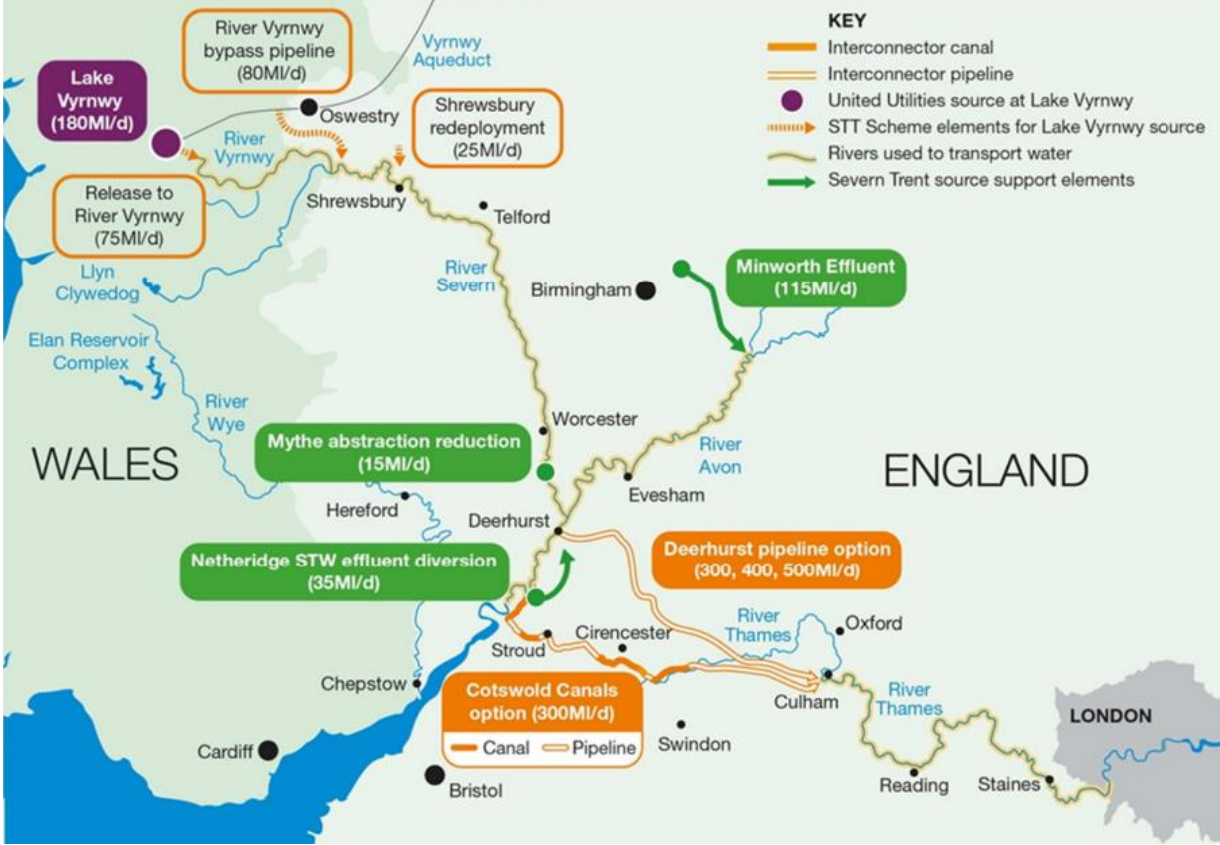
18. The second option to get the water involves reinstating parts of the Cotswold Canals from Gloucester Dock to Culham.

19. The proposal includes water treatment works at the intake locations to mitigate potential impacts on water quality or from invasive species on the River Thames. A discharge outfall structure would need to be constructed within the banks of the River Thames at Culham.

20. The Severn to Thames Transfer is being put forward jointly by United Utilities, Severn Trent and Thames Water. Either option is expected to be able to be constructed within a relatively short timeframe.

21. The diagram available as part of the gate one submission from the companies is as follows in Figure 3:

Figure 3



22. RAPID is allowing for £3.66m of the claim for £4.49m for costs spent on gate one activities. RAPID’s overall assessment for the submission at gate one is that it is satisfactory (falls short of expectations in some areas). This is the only one of the 15 strategic options where it is not proposed to allow the full costs, and where the overall assessment is that the submission did not meet expectations. There are two areas where RAPID considers submitted evidence has not been sufficient: programme management and delivery costs and tripartite company activity costs. The claim for those costs, totalling £831,000 is disallowed until evidence is provided to justify part of all of the claim. It is clear that additional work is needed on the tripartite company activities, for example in order to clearly identify who will be responsible of the transfer infrastructure and how it will be owned and operated.

23. RAPID’s evaluation of the gate one submission indicates that it insufficiently discussed and compared the two routing options and did not fully consider all the enabling supply solutions. RAPID has also indicated that there are significant risks with regard to compliance with Habitats Regulations as there is insufficient evidence at this stage to conclude no significant impact on the integrity of the Severn Estuary Special Area of Conservation (SAC) and its linked habitat.

24. We agree that there is a need for the further investigations identified by RAPID in respect of the Severn to Thames Transfer and consider there is also a need to further investigate local effects in Oxfordshire. This proposal is clearly a very complex one (the costs of investigation and the costs of the scheme are high) and together with the local district councils, Oxfordshire County Council needs to be involved in considering the detail of the proposal.

### **South Lincolnshire Reservoir**

25. This is the proposal for a reservoir being put forward jointly by Anglian Water and Affinity Water. Three potential concept design variants at three indicative sites have been evaluated to deliver a deployable output of between 151MI/d and 182ML/d for Anglian Water; increasing to between 193MI/d and 229MI/d if there is a maximum transfer to Affinity Water of 100MI/d.

26. The proposal is of interest to Oxfordshire County Council as we think that the transfer to Affinity Water could be an alternative to that proposed for Affinity Water in conjunction with a South East Strategic Reservoir.

27. Water would be taken from the River Trent and transferred to the River Witham via a 9.3km, 1.7m diameter pipeline before being pumped into a reservoir.

28. The reservoir location would be a rural one somewhere between Grantham, Sleaford, Boston and Spalding.

29. RAPID is allowing for the full claim of £2.5m for costs spent on gate one activities. RAPID's overall assessment for the submission at gate one is that it is good (meets expectations).

30. RAPID's evaluation appears to indicate no major barriers to progressing this proposal. The actions and recommendations for investigations to gate two are mostly focused on identifying the preferred solution and detailed matters such as amenity features.

31. We agree that this South Lincolnshire Reservoir proposal should be progressed to gate two. We consider that this proposal could provide significant benefit not only within the Water Resources East area, but also to the Water Resources South East area given the linked proposal to transfer water to Affinity Water for London. This could give us further cause to question any need for a South East Strategic Reservoir in Oxfordshire, or the Severn to Thames Water Transfer.

### **Fenland Reservoir**

32. This is a proposal for a reservoir being put forward jointly by Anglian Water and Cambridge Water. It is a new proposal which was not previously identified in the RAPID gated process. Funding has not been provided to date but will be provided going forward. The proposal has come about as a result of a broader water management strategy for the Fens. A site for the reservoir has not yet been selected but is indicatively in the rural Fenland area.



33. We agree that this Fenland Reservoir proposal should be progressed to gate two. It may be that this would not provide directly for London's needs, but RAPID is recommending that the wider resilience benefits of this are fully investigated and quantified. We perceive that there could be some advantage from this proposal in respect of meeting Anglian Water's needs such that the combination of this and the South Lincolnshire Reservoir could provide even more cause to question any need for a South East Strategic Reservoir in Oxfordshire, or the Severn to Thames Water Transfer.

### **Grand Union Canal Transfer**

34. This proposal is to transfer water from Minworth wastewater treatment works to the Grand Union Canal and into the Affinity Water supply area, supplying customers with up to 100MI/d. It may even be possible to have a larger amount of water transferred, although this is not part of the current proposal. The Grand Union Canal would be upgraded as part of this and there would be connections at either end. There are three alternative locations shortlisted for the southern end at Tring, Hemel Hempstead and The Grove where there would be abstraction and treatment facilities.

35. Severn Trent Water and Affinity Water are jointly promoting this. Severn Trent Water has stated that current modelling indicates that both this option and the Severn to Thames Transfer could potentially proceed, although if they did both proceed, the Severn to Thames Transfer could not rely on the Minworth wastewater treatment works element as the spare capacity there would be needed for this proposal. This needs to be investigated in more detail for gate two.

36. RAPID is allowing for the full claim of £1.62m for costs spent on gate one activities. RAPID's overall assessment for the submission at Gate One is that it is good (meets expectations).

37. We agree that the Grand Union Canal transfer proposal should be progressed to gate two. We think this option appears to sensibly use an existing canal resource to get water from the Midlands to London. We note that the initial cost estimates for the proposal are anywhere between £500m and £1,160m but these costs are lower than the development of the SESRO proposal for example. This proposal would not impact on Oxfordshire.

### **London Effluent Reuse**

38. This option comprises four potential schemes of various sizes within London at Beckton, Mogden, and Teddington. Abstracted effluent or sewage in these schemes would be treated through an Advanced Water Recycling Plant, or a Tertiary Treatment Plant and discharged to the River Thames or the River Lee Diversion where it can be abstracted as a raw water resource, for example to the Lee Valley reservoirs.

39. A key issue that appears to be raised for this strategic option is drinking water quality, and this requires further investigation. However, it appears from Thames Water's gate one submission that the feasibility of these schemes has been thoroughly considered and there are many benefits in treating effluent efficiently in this way.

40. RAPID is allowing for the full claim of £2.78m for costs spent on gate one activities. RAPID's overall assessment for the submission at gate one is that it is good (meets expectations).
41. We agree that this London Effluent Reuse proposal should be progressed to gate two. Although the maximum cost of this set out in Table 2 above is very high, we note that the minimum cost is very low and that it could be that not all of the four potential schemes are needed. This proposal would not impact on Oxfordshire.

## Other Options

42. Of the 15 strategic water supply options, the following six have been discussed under the headings above: South East Strategic Reservoir; Severn to Thames Transfer; South Lincolnshire Reservoir; Fenland Reservoir; Grand Union Canal Transfer and London Effluent Reuse. In addition, we have also mentioned the related six Thames to Affinity Transfer; Thames to Southern Transfer; Anglian to Affinity Transfer; Vyrnwy Reservoir works; Minworth Effluent Reuse and other Severn Trent Water sources. We have no comment on the remaining three: United Utilities Sources; West Country South Sources and Transfers; and West Country Southern Water Transfer which we perceive would not affect Oxfordshire.
43. There are other options which could provide water supply which are not included in the RAPID gated process. We note, in particular, the omission of Thames Estuary desalination options. The regulators' funding should support the development of a wide range of options including smaller, more innovative and less environmentally damaging solutions. We understand that the RAPID gated process options are not the only options that are being considered by the water companies for the regional plans and we will be able to comment on all the options through the regional plan consultations.