

16 November 2021

Dear Sir/Madam

Ofwat/RAPID Gate 1 assessment

This is our response to the Environmental part of the Abingdon Reservoir Gate 1 reports which were published on RAPID's web-site on 5th July 2021 and to Ofwat/RAPID's draft decisions on the Gate 1 proposals that were published in mid-September 2021.

Since then RAPID has compelled Thames Water to release un-redacted detailed Environmental Assessment papers. This was done on 1st November 2021.

Introduction

1. This response covers the following points:

1.1. Information about the Wantage and Grove Campaign Group

- Who we are
- Where we are
- Our interest in the Abingdon Reservoir Gate 1 reports

1.2. Our feedback to the Abingdon Reservoir Gate 1 reports including:

- Water Quality
- Environmental and Social Impact
- Landscape impacts
- Adaptability
- Impact on flooding
- Construction impact

2. The Wantage and Grove Campaign Group

2.1. **Who we are**

The Wantage and Grove Campaign Group is a non-party-political group of over 1000 individuals who live in and around Wantage and Grove in Oxfordshire. We are not against any development in Wantage and Grove but:

- Developments should be proportionate and sustainable; and
- The infrastructure should enhance and improve quality of life for its residents.

2.2. **Where we are**

Wantage and Grove jointly comprised 7,635 households at the 2011 census. We are

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situated in the centre of the Vale of the White Horse. This is a predominantly rural area located in south-west Oxfordshire and is bounded to the north and the east by the River Thames and to the south by the North Wessex Downs Area of Outstanding Natural Beauty (AONB). The Vale is located between the larger centres of Swindon, to the south-west; Oxford, to the north-east; Newbury, to the south; and Didcot, to the south-east.

2.3. Our interest in the Ofwat/RAPID Gate 1 assessment

This plan affects us as residents of the area within the Vale of the White Horse very close to the proposed site of the South East Strategic Reservoir.

3. The Abingdon Reservoir Gate 1 Reports

3.1. Water Quality

The Environmental Assessment Report (EAR) recognises the danger of poor water quality in the reservoir, especially algal growth, and the potential impact from regulation water releases. However then the summary of impacts, on page 230, dismisses the reservoir algal growth problem in a single sentence:

‘Water quality assessment work has validated potential risks of algal growth within SESRO, which can be mitigated through mixing’

Given the importance of water quality, this is unacceptable and the possible impact of algal laden-reservoir releases is a major issue which should be addressed prior to Gate 2.

The EAR report and the associated Appendix A6, water quality annex, goes into considerable detail on water quality modelling and assessments to date, including proposals for further work in Gate 2. The conclusions in Section 6.5 suggest that construction impacts on water quality can be managed by good site construction practice. This may be true, but Thames Water’s record on leakage and pollution in the water ways of Oxfordshire leaves a lot to be desired. Even if best practice is followed there are likely to be some pollution incidents arising from such a huge site in a multi-year construction period.

The modelling and assessments in the report have focussed on chemical water quality and don’t appear to have covered algal growth. The conclusions in Section 6.5 of the EAR state that:

‘Current nutrients levels in the River Thames are likely to result in algal growth within SESRO. In addition there is a further risk of nutrients added by wildfowl. Engineered mitigation measures such as artificial mixing, Intermittent artificial mixing, Microfiltration & Surface Skimmers, Draw-off Control (Variable Draw-off) and sonification should be considered’.

There is no further detail and no mention of any more work for Gate 2.

Appendix 6 also states that:

‘The primary risk from storage in the reservoir comes from phytoplankton growth and the effects of this on water quality through the release of algal metabolites and toxins and disinfection byproducts. These processes have not been assessed in this study, as

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SIMCAT-SAGIS is not a suitable modelling platform so that they will need to be addressed separately'

We believe that the threat of algal growth in the reservoir and the impact of algal laden-reservoir releases is a major issue which has not been properly addressed by the EAR report. Further investigations for Gate 2 should include:

- Detailed algal modelling, both within the reservoir and in the River Thames.
- Full details of mitigation measures to manage algal growth and evidence of their effectiveness, bearing in mind shallow water depths and long reservoir retention times.
- Due consideration of the shallow depth of water in the reservoir in drought years and especially if emergency storage has to be used (average water depth about 2m), noting that in the second year of droughts the reservoir will only be about half full at the start of the 2nd year.
- Due consideration of other algal growth in other large shallow reservoirs including Farmoor, London reservoirs and Grafham.

3.2. Environmental and Social Impact

Thames Water suggests that the Leisure and Amenity possibilities of the new reservoir have a 'Major Beneficial' rating, but does not explain how this would be achieved. We understand that the 'new' recreation opportunities which the reservoir could bring would be water-based, since the area originally promised for screening, leisure areas and nature areas has been completely swallowed up by the decision to cram in the largest reservoir that can fit into the space.

In some areas, the reservoir footprint is pushed right up to the edge of the reserved planning area and alarmingly close to recent new build housing. Local water based activities are already available on the Thames and at Farmoor and at a number of the reclaimed gravel lakes that are abundant in the area so we are at a loss to see why another 'lake' would have a major beneficial effect.

The report refers to *'the mitigation and betterment features of the design as outlined in the 2018 CDR ... which has not changed significantly according to recent conversations with the Mott MacDonald design team. Examples of these features include:*

- *Formal water and land sports area and informal recreational areas;*
- *Rehabilitation of the canal (to be confirmed in Gate 2 onwards);*
- *Visitor centre and heritage/archaeological centre;*
- *School study centre and outdoor educational water science park;*
- *Extended footpaths/bridleways;*
- *Woodland, shrubland grassland and wetland areas;*
- *Lagoons and coves;*
- *Fishing and angling pond; and,*
- *Floodplain compensation and watercourse diversions amongst others.*

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As has been raised many times by many of our fellow groups of residents, yet still to be acknowledged by Thames Water, water based leisure activities may be severely curtailed by:

- Significant coverage by solar panels. These are not new and cannot be considered a benefit, as they simply replace existing solar farms which will have to be removed.
- Security issues that may limit general public access to the area.
- Concerns over the introduction of invasive species.

In addition, we do not believe there will be any land available for 'extended footpaths/bridleways' or 'woodland, shrub land, grassland and wetland areas'.

The Natural Capital Assessment report then suggests that the Gate 2 assessment will use the 2021 Conceptual Design Report (which we have not seen), but then characterises this report as having 'limited detail'. We suggest that all of this report has limited detail and that there is not, nor will be, sufficient information on which to decide the future of our community and its environment.

3.3. Landscape impacts

According to the report

'It was established that an LVIA undertaken at Gate 2 of the proposed location of SESRO would need to assess the potential scale of impact on the landscape, and the visual impact of the proposed location of SESRO in relation to the setting of the North Wessex Downs AONB (See Figure 2.1 Location Plan in Technical Annex B1: EAR Figures).

'The LVIA would be undertaken as an initial high-level appraisal in accordance with GLVIA316, at Gate 2 that will used as the basis to inform more formal evaluation and to support future scheme promotion or EIA.'

We are however very disappointed that the report continues to state that:

'For clarification, it would focus on the AONB and would not be a full LVIA that considers all landscape and visual effects within the study area of the reservoir proposal site.'

Although we note that the reservoir would be largest thing visible from the Ridgeway, it would also be the largest thing in the Vale of the White Horse and could have a significant effect on the lives of the 50,000 residents who live here.

The Strategic Environmental Assessment presented in the Gate 1 report appears shallow, prejudiced and inconsistent with references to risk elsewhere in the report.

The downplaying of the very significant construction impact of a 10-year project on both the biodiversity and landscape of the area (classed as 'Moderate Adverse'), and the total omission of any estimation of the effects of round-the-clock noise, light pollution and transport dislocation on the residents of the area are astounding.

This will be one of the largest and longest, in terms of time to complete, construction projects in Europe, crammed into an area with either poor, or already overloaded supporting infrastructure.

As can be seen from the maps included in the report (see example overleaf) there are villages very close to the reservoir on at least three sides (East Hanney, Drayton and

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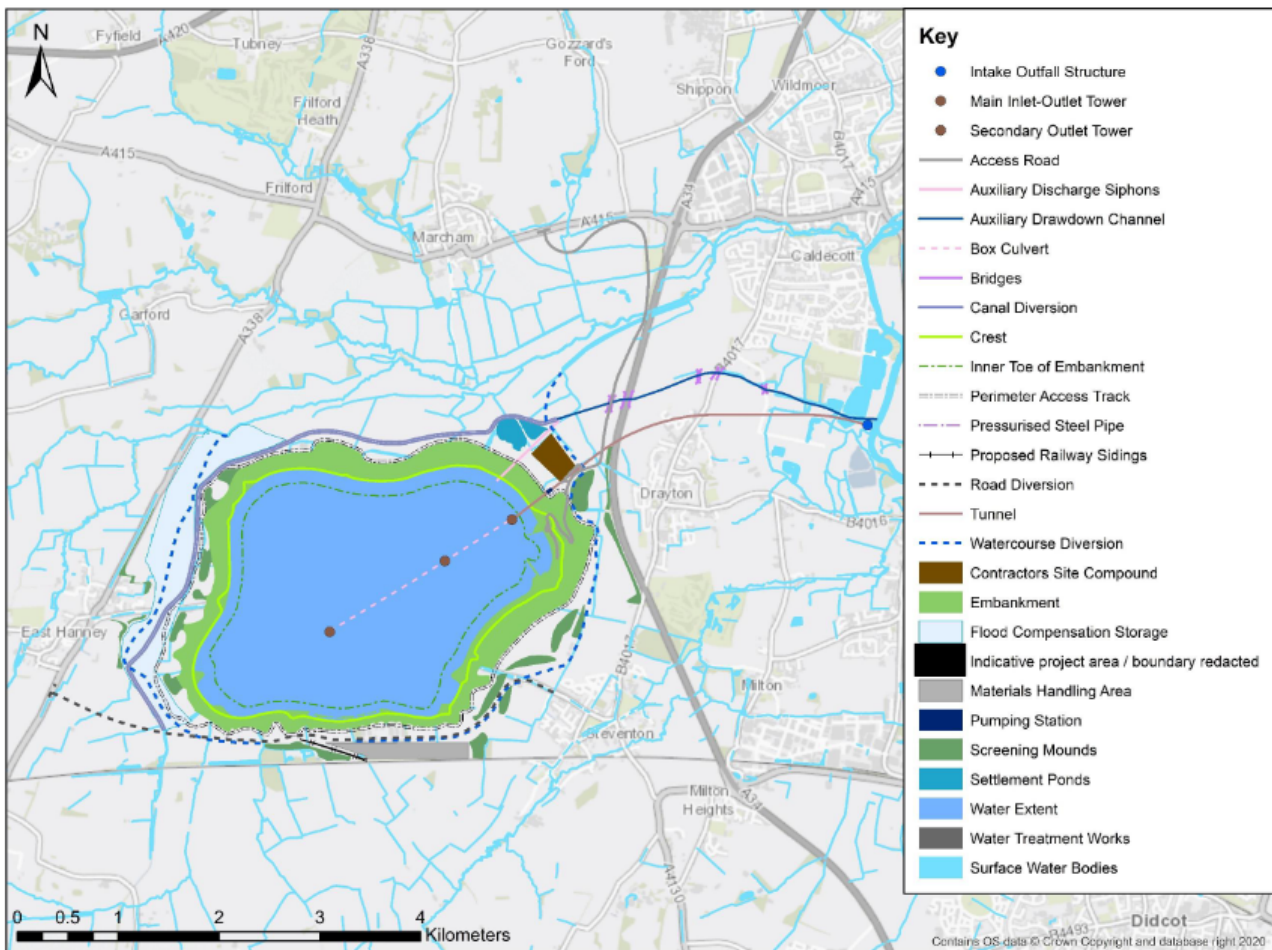


Figure 2-4 - 150Mm³ reservoir proposed scheme layout

Steventon). No mention is made of the impact of the very high volume of housing development taking place in these villages (and in Marcham to the north) or the many thousands of new homes planned and being built in the rest of the OX12 area including Grove and Wantage (just south of the railway line which forms a boundary to the reservoir site).

The population of Steventon (south east of the site) has increased by approximately 1000 in the last 10 years. Marcham (to the north) and East Hanney, to the west, have both expanded by over 200 homes so far and plans are being formulated for a further 1000 homes just south of East Hanney.

The area that Thames Water identified 25 years ago as being suitable for a reservoir with a sparsely populated area, with only a couple of small villages to be affected has gone. In its place is an area crammed with some of the most intense levels of housebuilding in England. The eastern boundary is the A34, now one of the busiest roads in the UK and already at or over capacity.

According to the report:

'The design and mitigation strategy will aim to connect the reservoir design into the landscape, protecting the landscape character and identifying opportunities for landscape improvements and enhancements, whilst taking into account the views and visual amenity of key receptors. A new valued landscape will result that is used by people

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with significant beneficial effects associated with the commitments to landscaping and creation of aquatic and grassland.

'Whilst the construction of the reservoir would result in landscape, visual and habitat impacts, mitigation measures as described in the CDR (2021), will be implemented to avoid, reduce and minimise loss or disturbance through the design and planning of construction activities resulting in a significant (moderate) adverse effect that will reduce to less significant (minor) adverse effects during operation.'

Our estimate of the size of the reservoir is that as it would be built above ground, it would be contained by bunds between 15 and 25 metres high. That's about the height of an 8 storey block of flats and higher than anything else in the Vale. The reservoir embankments would enclose about 4 square miles and be over 10 miles long and be the largest thing visible from the Ridgeway (in the North Wessex Downs Area of Outstanding Natural Beauty) or from anywhere else in the Vale of the White Horse.

Homes will be within 500m of the bunds and it will dominate their landscape.

3.4. **Adaptability**

Paragraph 10.13 of the Gate 1 report says:

'SESRO scores very well for the 'Reliability' and 'Adaptability', providing resilient and beneficial new water supply assets, but less well on the 'Evolvability' metrics, as infrastructure at this scale is not easily modularised and it has a very long 'lead-in' time'.

As reported by our colleagues in GARD, the difference between 'Evolvability' and 'Adaptability' has already been identified in Ofwat's response to WRSE's consultation on Resilience Methodology as very small, and GARD believes that, cited academic papers notwithstanding, the two metrics cannot be disentangled.

An infrastructure project of this scale is not very adaptable. Unlike flooding a valley, this huge construction would take as long to remove as to install and the cost of removal would be similar to the cost of construction. The consequential damage to the area cannot be undone, without huge cost, once construction has started.

RAPID should not allow this purported 'Adaptability' to remain as a listed benefit in the Gate 2 investigation.

3.5. **Impact on flooding**

We have two types of clay subsoil in the Vale of the White Horse (which are relatively impermeable) and greensand which is very permeable. Part of the reservoir will be built over greensand so would be taking away over one square mile of the land that soaks up flood water which may increase the flood risk in the rest of the Vale.

Equally important, if water from the reservoir could leak into the greensand below it, it could create a river leading straight to Steventon, Drayton and Abingdon and on into the Thames.

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Thames Water have not yet done any detailed designs to show what the risk of these flooding and leakage risks are, and how they could mitigate them.

The Gate 1 report says the latest flood modelling shows the reservoir would lead to a reduction in flood risk for Abingdon. Yet in the reports prepared for Thames Water, supporting the WRMP19 submission, the reservoirs above 75 Mm³ in size received a 'Red' rating as it was stated that there was insufficient flood storage area on the reservoir site to compensate for the loss of floodplain.

It is notable that, the 'new' flood characteristics are in part attributed to '...rain falling on the reservoir surface area being removed from the Ock catchment'. This rainfall was an entirely negligible factor in the 2007 flooding of the villages (especially East Hanney and Steventon) around the reservoir's edge, and it is highly likely that, with East Hanney's floodplain in particular being sealed by the reservoir footprint, any future flooding of the villages would be much worse.

RAPID should require Thames Water's flooding report to be made available for public scrutiny and ask the Environment Agency to make a publicly available review of the acceptability of Thames Water's proposals for mitigation of flood impacts due to construction of the reservoir in the flood plain.

3.6. Construction impact

We ask that Thames Water be required to provide a separate assessment report for Gate 2 on the impacts of the scheme on local residents and businesses (say within 5 km of the boundaries of the reservoir). This should include assessments of visual impact (at local ground level), noise, air pollution, light pollution and traffic disruption based on a proper analysis of transport of movements of construction staff and materials to the site and the movements of construction plant within the site. It should also include the details of how this construction will meet the zero carbon ambitions of the Vale of the White Horse.

We note that most of the roads in the area are already at or very close to capacity and that the movement of the amount of material required to construct the reservoir is likely to add to existing congestion and (unless construction vehicles can be made carbon neutral) will significantly impact the carbon footprint of the area.