

Regulators' Alliance for Progressing
Infrastructure Development

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Developing a model to deliver multi-sector reservoir systems



About this document

RAPID, established in 2019, is the Regulators' Alliance for Progressing Infrastructure Development. We are a partnership of three water regulators: Ofwat, the Environment Agency and the Drinking Water Inspectorate (DWI). Natural Resources Wales is involved in an advisory capacity and has a decision-making role for any solution involving Wales, Welsh policy and legislation. RAPID provides advice and recommendations on the development of strategic water resources to the partner regulators, governments and to Natural Resources Wales (NRW).

This document presents work on the delivery of multi-sector reservoir systems carried out on behalf of RAPID, Anglian Water, Northumbrian Water, Yorkshire Water and Water Resources East.

1. Background

RAPID, established in 2019, is the Regulators' Alliance for Progressing Infrastructure Development. We are supporting strategically important new water resource infrastructure supply solutions to meet future water needs. We are a partnership of three water regulators: Ofwat, the Environment Agency and the Drinking Water Inspectorate (DWI). Natural Resources Wales (NRW) is involved in an advisory capacity and has a decision-making role for any solution involving Wales, Welsh policy and legislation.

Many of the best value options to develop strategic water resources require collaboration across more than one water company, and often with third parties (multi-sector). Such strategic infrastructure requires more complex commercial arrangements as compared to projects designed to serve individual company areas. And they present new or heightened challenges to water sector regulation – be that environmental regulation, drinking water quality or funding and outcomes.

Through the RAPID gated process, companies have identified the opportunity to deliver strategic reservoirs that could deliver benefits wider than just providing water services to water customers. By designing reservoirs to include the needs of other users such as flood management, irrigation, leisure facilities etc, the reservoir has the potential to deliver significant public value – through delivering greater environmental and social benefits at a lower cost overall than several single-purpose schemes. Anglian Water is actively considering multi sector reservoirs (MSR) options for its proposed South Lincolnshire Reservoir and the Fens Reservoir.

These multi-sector reservoir (MSR) systems are comprised of reservoirs and associated developments that collectively work together on an integrated basis to provide multiple benefits to multiple stakeholders and to the environment. There are challenges to delivering an MSR system – particularly the complexity of obligations and risks that need to be allocated across different parties, for example between water companies, water customers and other users of the MSR such as irrigators (e.g. farmers) or industrial users. In general, we do not expect public water supply customers to carry risk for other sectors unless they are fully compensated for this.

To understand how MSR systems could be delivered, RAPID, Anglian Water, Northumbrian Water and Yorkshire Water jointly commissioned a report from CEPA and Agilia to consider the legal and commercial models that could facilitate the delivery of MSR systems, including:

- Examining the issues that emerge when funding, financing, and developing an MSR system [from a legal and commercial perspective];
- Consider the extent to which a model (or models) can be developed within the existing legal framework (as far as possible) to address these issues; and

- How the above elements might be affected by the inclusion of different types of users e.g. flood management, irrigation, industrial users, leisure/tourism etc.

The report is [available here](#).

CEPA's and Agilia's report considers a number of different models for incorporating the following users into an MSR system:

- Public water supply;
- Flood management;
- Irrigation (e.g. the agriculture sector);
- Industrial and power sector;
- Leisure/Tourism;
- Navigation;
- Environment

Each of these users have different characteristics which create different challenges for including them in an MSR system. The report therefore looks at a number of different models for incorporating each of the different beneficiaries and considers the following issues:



2. Key findings

The report identifies a number of challenges to developing a multi-sector solution:

Identifying and designing a water resource solution that represents best value for each user may be difficult

The report found that there are likely to be trade-offs between economies and additional benefits of an MSR system versus additional complexity and risk that is introduced by the introduction of each user to the MSR. Therefore the case for including each user needs to be tested at key stages of an MSR's development. As part of this it is important that public water supply customers do not subsidise other users access to the reservoir.

Developing a financeable model when non-water company and non-public sector off-takers are added to the scheme may be challenging

All international examples to date have been extensively supported by public funding and financing. To obtain private finance for an MSR system:

- **Each benefit/user case will need to be fully funded** – each funding stream needs to be sufficient to cover the additional cost of incorporating the use case
- **Revenue risk needs to be allocated appropriately** – it may be unfeasible or too costly for the entity delivering the MSR system to take revenue risks, therefore this risk will need to be allocated to a party who can take it. The contribution of each off-taker would need to reflect the uncertainty they introduce into the financing structure to avoid water customers subsidising higher risk users.

As a principle, public water supply customers should not subsidise other reservoir users and we expect costs to be fairly shared between users. This may prevent MSR schemes from developing where third parties are unable to commit their involvement early in the design and development of the reservoir. Their early involvement and commitment to funding will be important to ensuring all the MSR benefits can be designed and built into the reservoir from the outset.

Small users are unlikely to be able to participate in an MSR system without an intermediary.

It is unlikely to be possible (or attractive commercially) for small users -such as individual farmers - to contract directly with the entity delivering the MSR system. Therefore an intermediary would most likely be required to contract with the MSR and book storage capacity and ensure it is paid for.

3. Next steps

Given the potential benefits that an MSR system could deliver for customers, the environment and society, we consider it important for companies to continue to investigate the delivery of MSR systems and develop working models, and how the challenges identified in section 2 can be addressed. We are therefore proposing the following key areas of work over the next year:

1. **Establishing the case for a MSR system:** where companies are considering MSR systems we are asking them to investigate the needs and benefits case for the reservoir at both a project level and individual user level. Companies will need to understand (a) the demand for an MSR approach and where the demand is, and (b) whether the individual use cases support an MSR system i.e. is it likely to offer best value for each user.
2. **Identify potential participants and funding streams:** each user case will require committed funding and companies need to test potential participants appetite for an MSR as well as identify and develop mechanisms that could fund the different use cases.

RAPID's role is to support companies carrying out this work – improving the existing regulatory framework so that any emerging points, be they opportunities, gaps, or barriers, are addressed through our work. As part of this we are proposing to carry out a critical review of the models identified in the report, the barriers and risks, and where we may be able to unlock any barriers or make recommendations for others to do so.



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