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An essential new reservoir for the South East

South East Strategic Reservoir Option (SESRO) Project Update

March 2025

Foreword

Leonie Dubois,
Head of Engagement, Land and Consents,
Thames Water Strategic Resource Options

Hello. Welcome to our spring 2025 project update.

In this update, we provide a summary of how our proposal to build an essential new reservoir in Oxfordshire is evolving following the public consultation that we held in 2024.

The proposed reservoir is one of the most critical pieces of infrastructure under development in the UK and crucial for tackling future water challenges in the South East. With a growing population, climate change, and the need to protect our rivers, we need a more resilient water supply to guard against the uncertainty of the future.

A new reservoir would help us to address those challenges and secure water supplies for around 15 million people in the South East.

Since the public consultation that we held last year, we've been reading all of the feedback received, and considering how it should inform our draft designs.

Proposals are developing, including updates to our designs and widening our programme of environmental surveys. Our proposals seek to strike a careful balance between addressing the water shortage risk and ensuring we create a new public space that would benefit local communities for generations to come.

We've not quite finished this process, but wanted to provide an update, in line with our commitment to keeping people updated. We'll provide more information in the summer, ahead of a further public consultation later this year.

Thank you again for your interest and support - stay with us on the journey to secure a brighter water future for the South East.

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Securing our water future

The South East is one of the UK's most densely populated regions, and water demand is rising. We currently supply 2.6 billion litres daily to 10 million people. By 2050, that number will reach nearly 13 million, with a potential shortfall of 1 billion litres daily. We must act decisively now to protect and secure our water future.

Preparing for climate change

Climate change is making the water supply less predictable. The UK is seeing more extreme weather – prolonged droughts, intense storms, and heavy rainfall that doesn't constantly replenish supplies.

Although 2024 was officially the eighth-wettest year on record according to the Met Office, this statistic masks a complex water security challenge in the UK. In 2022, we experienced one of the driest years on record – and 2023 was one of the hottest. Much of the rain that fell in 2024 was lost before being stored. Our proposed reservoir would capture and retain water, to help secure supplies for the future.

The new reservoir would store water when it's plentiful and provide a steady supply when needed, ensuring water security for 15 million people across Thames Water, Affinity Water and Southern Water customers.

Turn to the next section to read about what's changed since our last update.

In Summer 2022, then the hottest on record and the driest since 1995, reservoir and river levels in London and the South East dropped way below expected levels, and wildlife, habitats and farmland were badly impacted.

Taking action

Once built, the project would help to secure water for millions, provide new recreational spaces for communities and create a rich, biodiverse landscape. It forms part of our wider plan to meet the water resource challenge, which is a combination of making the most of the water supplies we have and creating new sources of water. For example, we're working hard to fix the leaks from our network, and we recognise there's still much to do. Encouraging customers to use water more efficiently is also critical to the approach.

But given the scale of the water resources shortfall, these initiatives alone are not enough. We must increase our water storage capacity and develop new sources of water.

The proactive steps we're taking to tackle drought are driven by the findings set out in our Water Resources Management Plan (WRMP), which was approved by the Government in August 2024. As this is a shared issue, we're working collaboratively with other water companies in the region, as part of Water Resources South East (WRSE), and with regulators, to identify the right water resource solutions. Further information is set out in the South East's draft Regional Plan. The plans outline the scale of the challenges we face in both the Thames Valley and the wider South East.

Further information is available at thames-wrmp.co.uk

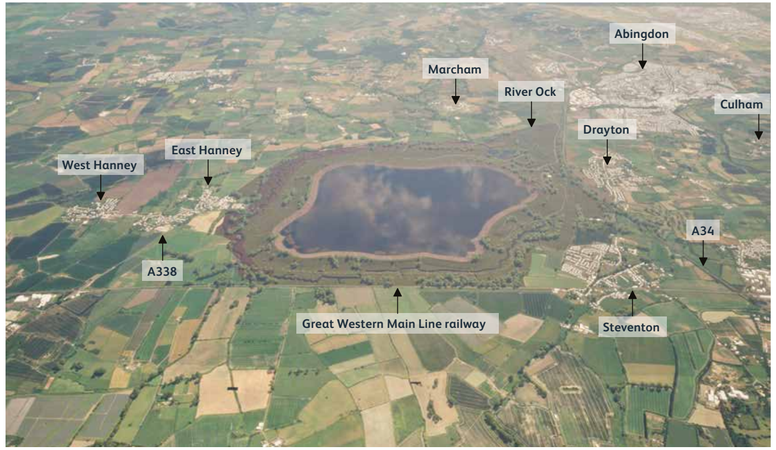
A space for people, nature and the future

The project is about more than a reservoir. We're also proposing new walking and cycling trails, bridleways, areas for water sports, such as sailing, swimming and fishing, and new nature habitats like wetlands, woodlands and grasslands.

Boosting growth and the economy

Collaboration with businesses, educators and local authorities would drive new jobs, skills and apprenticeships. The project would create jobs during the construction period, and once open, attract visitors and boost tourism, supporting the regional economy for the longer term.

We're committed to working together with communities, businesses and environmental groups to shape a sustainable future – creating a shared asset that benefits everyone for generations to come.



The proposed new reservoir

The site for the proposed new reservoir is south west of Abingdon in Oxfordshire. The site is bounded by the A34 to the east, the Great Western Main Line railway (London to Bristol) to the south, the A338 to the west, and the River Ock to the north.

The proposed location is close to the River Thames, has reasonably flat land and has the right sort of geology – an abundance of bedrock clays.

The reservoir would be filled with water from the River Thames in the winter when plenty is available. When river levels drop, or demand for water increases, water would be released from the reservoir back into the river for re-abstraction downstream, helping increase drought resilience in the wider area.

Key facts

Surface water area **6.7** km²

Volume **150** Mm³

It would come into use by **2040**

Could supply **271** Ml/d

equivalent to over **3** million baths

Project update

We're making good progress on developing designs for the new reservoir, and are on track to submit an application for development consent to the Planning Inspectorate in 2026.

In summer 2024, we held a public consultation on our emerging design options and an interim master plan for the new reservoir.

We received more than 1,500 responses and want to thank everyone who took the time to respond. Since the consultation, we've been carefully reviewing every piece of feedback we received, which is helping to shape the ongoing development of our proposals.

Our Water Resources Management Plan (WRMP), which sets out our strategy to protect the water supply in our area for the next 50 years and beyond, has been approved by the government. This gives us a clear mandate to continue developing and delivering the reservoir as a critical piece of the jigsaw to secure water supply for 15 million people.

In summer 2024, we appointed Arup and Binnies as our specialist Technical Partner to lead on the development of proposals for the project. This partnership provides access to an expansive supply chain of technical experts with major infrastructure project experience.

You can find more information about the public consultation that we held in 2024 - and access the consultation documents and maps - by visiting our website at: www.thames-wrmp.co.uk/news/documents

2024 public consultation

12 week consultation

7 community events

over **1,200** people came to see us at the events

1,598 consultees provided feedback

Design options for public consultation in 2024

1. Rail sidings and material handling area during construction
2. Steventon to East Hanney road diversion
3. Alternative options for Water Treatment Works (for Southern Water)
4. Main access road
5. Connectivity to the River Thames (conveyance tunnel/ emergency discharge channel)
6. River Thames intake/outfall structures

Progress on design options

During consultation, we asked for your views on specific aspects of the project. You can see opposite an overview of the items that we consulted on last year.

We've been carefully reviewing the feedback received and considering how it should influence our developing designs.

We've not quite finished this process, but wanted to provide an update anyway, in line with our commitment to keeping people updated.

Based on the work we've done so far, our preferred options are as follows:

- **Rail sidings and material handling area during construction:** Option 5 (western option) remains our preferred option for the location of the rail sidings to transport bulk materials needed for construction.
- **Main access road:** Option B (a new junction (roundabout) on the A415 west of the Marcham Interchange) remains our preferred option for the main access road to the site.
- **Steventon to East Hanney road diversion:** Option A (south of Steventon/north of the rail line) remains our preferred option for diverting the existing Steventon to East Hanney Road.
- **Alternative options for Water Treatment Works (for Southern Water):** Option 4 (northwest of Drayton) is our preferred option for the location of the water treatment works.
- **River Thames intake/outfall structures:** Option B remains our preferred option for the location of the intake/outfall structure.
- **Connecting to the River Thames (conveyance tunnel/emergency drawdown channel):** Option C - a tunnel to the River Thames - remains our preferred option for emergency drawdown.

While we didn't specifically ask for views about the restoration of the Wilts & Berks Canal, we've heard from communities how much this is valued locally. We're working on designs for a channel within the site to help make room for the restoration of the canal.

You can find out more about the reasoning and rationale behind these choices and progress with other elements of our project in the "Developing our proposals" section of this booklet.

We'll present more information on our progress during the summer of 2025 and will publish our Statement of Response, which will set out how the feedback received during public consultation last year has been considered and changes that have been made in response. You'll also be able to provide feedback on our updated proposals during a further public consultation later this year.

Further information about the 2024 non-statutory consultation, including documents with maps and descriptions of options, is available on our website – thames-wrmp.co.uk/news/documents

Understanding the local environment

The environmental surveys we've carried out so far have shown there is a diverse mix of habitats and species on the proposed reservoir site. In the spring, we'll be surveying a wider area to understand potential to provide improved habitats for some of the ecology presently on site.

Environmental surveys, and particularly those associated with rivers, streams and groundwater, also need to be conducted on areas around the potential site, so we can understand the surrounding environment and influences on the main area.

We'll be writing to those with land and property interests that maybe potentially affected by the project, including those in the wider survey area.

We're also carrying out a wide range of detailed surveys and assessments on the proposed site – for example, archaeological assessment works have started, we're starting the next phase of clay compaction trials and other ground investigation works will be getting underway.

Local engagement

We're engaging with schools and colleges in the area to provide updates on the project and have set up focus groups and user groups to work with local people to help shape the master plan.

We're committed to working with local communities to ensure we understand local priorities and make the most of the opportunities the project can offer to existing communities and future generations.

Contractor and investor engagement

On 17 March, we brought together over 100 leading contractors and investors for a market engagement event. These are the sorts of organisations capable of delivering the proposed new reservoir. Engaging the market early has many benefits, including gathering feedback and new ideas about how to approach the delivery of the proposed new reservoir, and also preparing future partners and supply-chains by briefing them on the work happening now, and our vision for the project.

Ultimately, this early engagement will help us secure the right partnerships and people to deliver the best value for our customers while also being good neighbours for local communities. We'll continue this engagement, before starting the official procurement process in autumn 2025.

We'll be creating wetlands similar to this around the proposed new reservoir

Developing our proposals

This section provides updates on some of the key activities we're doing as we develop our proposals ahead of consultation later in 2025.

Master plan

A place for people, nature and the future – We're building more than just a vital water resource. We're creating a space where people can unwind, explore and connect with nature – all while securing the region's water supply for future generations.

Our emerging vision is simple: a landscape that blends seamlessly with its surroundings, reflecting the area's character while providing new opportunities for recreation, education and conservation. Whether you're into water sports, cycling, walking, or just soaking up the outdoors, this would be a space that has something for everyone.

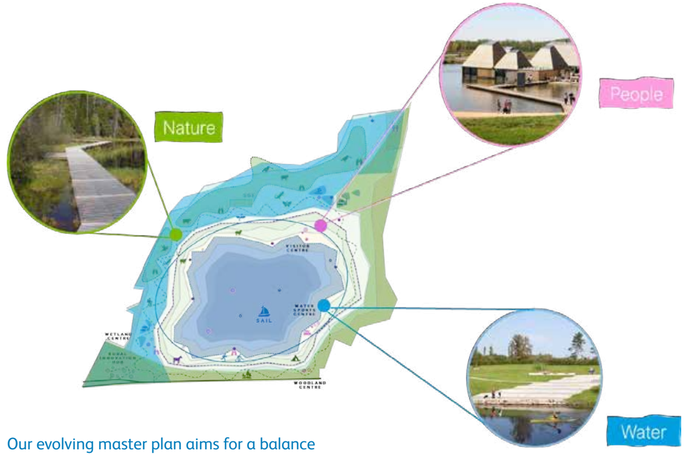
Beyond the immediate benefits, it's about creating a legacy – a destination that serves the environment and the community for generations to come.

Our aim is to create a strong sense of place, one that celebrates local character and responds to its surroundings while also embracing its potential to be a regionally and nationally significant destination.

We're working with the Design Council - the UK's national strategic advisor for design - as we develop our master plan for the project. This arrangement helps ensure we consider alternative views on how we develop the master plan and reservoir design, while also taking account of their four principles of climate, people, places and value.

From the start, local voices have shaped our plans, and we've listened. We're working to design a place that balances essential infrastructure with vibrant green spaces, water-based activities, and areas where wildlife can thrive.

To make this vision a reality, we're comprehensively considering every detail. That means ensuring that the buildings within the site – such as education and recreational facilities – feel at home in the landscape by using locally inspired materials that help them blend in. It means dedicating space to nature with habitats that support local wildlife, along with thoughtful planning for movement and access – scenic routes for walkers, horse-riders and cyclists, well-placed facilities and clear connections to surrounding areas.



Our evolving master plan aims for a balance between people, nature and water.

A place to explore and enjoy – Areas and activities on the land surrounding the reservoir would be grouped together where appropriate. For example dedicated areas for recreation, facilities for water sports, family-friendly trails, and places to meet and relax.

Other areas would be dedicated to nature and learning, with wetlands, woodlands and educational spaces where people can discover more about the environment. These spaces would develop and evolve, maturing alongside the reservoir.

We're exploring opportunities for early access so that while the reservoir is being built, some areas – like wetlands – could be opened earlier. This gradual approach means that the site would already be an established part of the community by the time the reservoir is fully operational, with people enjoying the landscape and its benefits.

As the site matures, so would the opportunities it offers – whether that's more places to explore, new ways to enjoy the water or even stronger links between local communities. It's a project designed for today and for future generations.

We'll present our evolved vision to you during statutory consultation when you'll be able to tell us what you think.

Helping people explore nature is a key aim of our master plan.

Construction

We meet regularly with stakeholders whose input is vital to our construction planning, including:

- Oxfordshire County Council and National Highways to progress our traffic assessments and modeling, and identify impacts and potential solutions on the local road network including the A34 and A415
- Network Rail and other freight operators to develop our plans for the transport of bulk materials during construction
- Developers such as the Defence Infrastructure Organisation - developers of Dalton Barracks - to understand the cumulative impacts of developments in the area and how together we can mitigate them

We'll be able to share more information on our construction plans in summer 2025, ahead of statutory consultation, which is planned for later on in 2025.

We'll produce environmental and construction management plans as part of our Development Consent Order (DCO) application. If granted consent, these plans would ensure we're engaging closely with communities during construction and taking appropriate environmental mitigation measures throughout.

Transport: Construction materials delivered by rail

The Great Western Main Line railway runs to the south of the proposed reservoir. We've proposed using this railway line to deliver bulk materials – such as stone, sand, and gravel – that we need to construct the reservoir. This would reduce the volume of construction vehicles on the road network.

We're refining proposals for a dedicated rail siding and material handling area on land next to the existing railway line, approximately 1km south of East Hanney and 900m south-west of the site – based on the location presented as Option 5 at the consultation in 2024.

You can see Option 5 on a map in Page 6 of our Consultation Map Book:

thames-wrmp.co.uk/news/documents

More detailed studies are underway to identify the layout that offers the best balance of operational requirements and minimises impacts on local wildlife, habitats, and properties.

We're in discussions with Network Rail, to manage the impact on the existing infrastructure and rail operations. We'll also engage with freight operating companies to identify opportunities to import material.

Transport: Main access road

We're developing proposals for a new road to provide access to the site via a new junction (roundabout) on the A415, approximately 440m west of the Marcham Interchange (A414/A34) - presented as Option B at consultation).

You can see Option B on a map in Page 7 of our Consultation Map Book:

thames-wrmp.co.uk/news/documents

This remains our preference, as it offers benefits including a safe distance from the Marcham Interchange and distance from Marcham Village, which is an Air Quality Management Area. Work is underway on more detailed assessments of local roads and the environment.

The proposed junction also aligns with an existing unnamed road which is likely to be used for access to the proposed housing development at Dalton Barracks being promoted by the Defence Infrastructure Organisation.

Transport: Steventon to East Hanney road diversion

Since last year's public consultation, we've carried out further assessments for the new Steventon to East Hanney road that will run south of the reservoir site. Our preferred route, shown as Option A during the consultation, is for a road approximately 5.1km long, running from a new roundabout junction with the A338 through to the existing Hanney Road, north of the rail line.

You can see Option A on a map in Page 8 of our Consultation Map Book:

thames-wrmp.co.uk/news/documents

Our current assessments show that this route offers a reduced carbon footprint and environmental impacts, compared with the other options. Diverting the road provides the opportunity to make the road safer than the existing road. We're carrying out further design development work to refine the route's alignment in response to the emerging master plan and technical comments provided by the local highway authority.

Throughout the project you may see members of our survey team out in the local area undertaking surveys or placing monitoring equipment on the highways. Their work is helping us to gather data and information so we understand more about the types of vehicles and journeys being undertaken on local roads around the site.

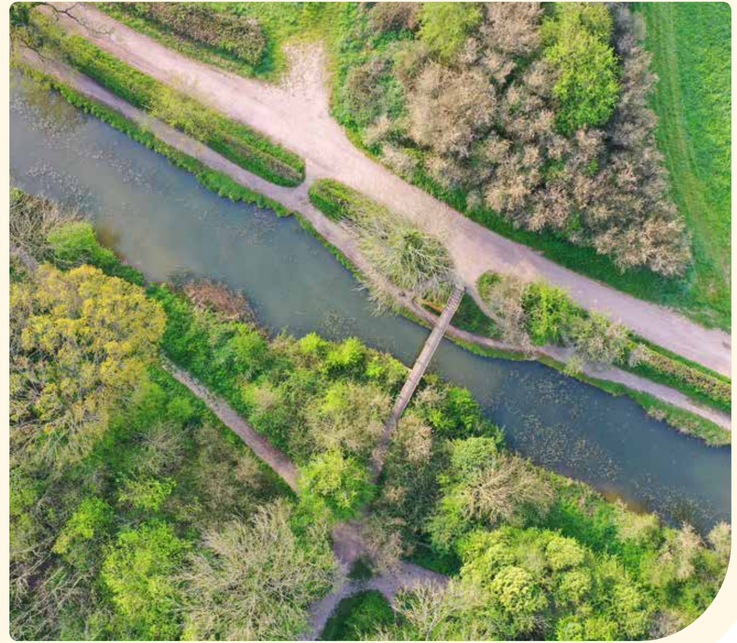
Active travel

We're engaging with active travel groups to develop our plans for active travel. Our updated master plan includes walking and cycling trails within the site and provides better links with walking and cycling routes in the wider area.

Wilts & Berks Canal

We've heard from communities how much the potential restoration of the historic Wilts & Berks Canal is valued locally and we're working on designs that can support it within the proposed reservoir site.

We're intending to provide a channel running along the proposed canal alignment within the reservoir site, to help make room for the future restoration of the canal. We're continuing to work with the Wilts & Berks Canal Trust on this.



Overview of section of the restored Wilts & Berks Canal

Connecting to the River Thames

Intake/outfall structure

The reservoir would be filled with water from the River Thames during periods of high river flow. When river levels drop or demand for water increases, water would be released back. To enable this transfer, we'd need to create new intake and outfall structures on the river.

During last year's consultation, we presented several different options for the location for these intake and outfall points. Our current preference is Option B – on the west embankment, north-east of Oday Hill Quarry.

We're carrying out further work, assessing how the structures could best integrate with the existing riverbank environment. This work, and further engagement with the Environment Agency, will help us to develop our proposals further.

You can see Option B on a map in Page 10 of our 2024 Consultation Map Book:

thames-wrmp.co.uk/news/documents

Emergency drawdown

We also need to ensure we can lower the reservoir's water level quickly in an emergency – this is a key factor in ensuring reservoir safety. In the highly unlikely event of a reservoir emergency, water would need to be transferred to the River Thames at a higher rate than in normal operational settings.

We're progressing designs for a tunnel to do this drawdown. This was presented as Option C at consultation.

You can see previously proposed options on a map in Pages 11-13 of our 2024 Consultation Map Book:

thames-wrmp.co.uk/news/documents

We are focusing on designs for a tunnel-only solution as this would greatly reduce construction impacts, including less impacts on local communities, wildlife and the road network. This would also require less land and prevents negative impacts on the floodplain.

We're proposing to use a tunnel boring machine to build the tunnel, which is a tried and tested technology. This approach would limit disturbance, avoiding ground movements and damage to land and property on the surface.

We're reviewing where we would need to have intermediate surface-to-tunnel shafts that would be needed for maintenance and safety along the route of the tunnel.

We'll provide more information on our chosen approach in summer 2025.

Embankment design

10km of new embankments would create a watertight perimeter around the proposed new reservoir. The embankment slopes are being designed to varied gradients and with slackened slopes to appear natural and blend with the existing landscape. These would be between approximately 15m and 25m high, from the ground level to the crest of the embankments.

The slopes would be varied to create an engaging and natural feature, with extensive new areas of woodland, copses, pasture and grassland, and native hedgerow criss-crossed by new paths.

The main structure of the embankment (the 'structural fill') would be formed from bedrock clays that exist in abundance at the site – specifically Kimmeridge clay and Gault Clay. These would be excavated from the centre of the site, which would become the reservoir basin (leaving enough in place to ensure that the bottom of the reservoir would be watertight,) and moved to the perimeter, to form the reservoir embankments.

The overlying sand and gravels are ideal for creating landscaped spaces on and around the embankments (the 'landscape fill'). To protect against the erosive effects of waves, a layer of natural stone, known as rip-rap, would be placed around the inner-face of the reservoir.

We're continuing to explore this as part of our design and master plan. We're continuing to engage with organisations including Natural England, the Environment Agency, Oxfordshire County Council and North Wessex Down National Landscape to develop landscape and habitat designs.

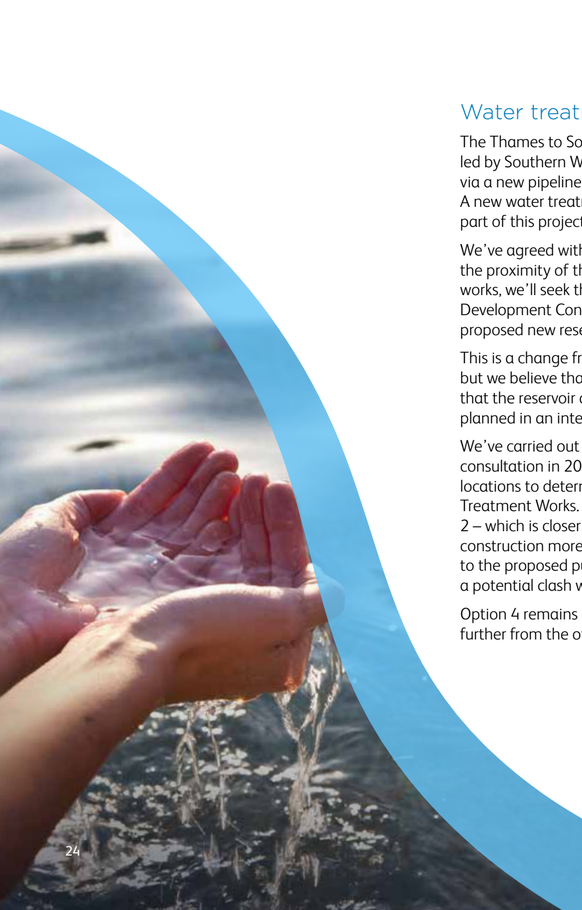
Illustration showing how embankments would be designed with varied gradients and to accommodate habitats, footpaths and woodlands.

Understanding the site's geology

The site chosen for the proposed new reservoir is close to the River Thames, has reasonably flat land and, critically, the right sort of geology – an abundance of bedrock clays.

We've been carrying out embankment trials – clay compaction trials – to inform our understanding about how the strength and water content of the local clay changes when compacted.

During autumn 2024, we created a borrow pit to extract the clay. In spring, we'll be excavating clay from the site which we'll then use to create test embankments up to three metres high. This will help to inform our understanding about how the strength and water content of the local clay changes when compacted.



Water treatment works

The Thames to Southern Transfer is a separate project, led by Southern Water, to enable the transfer of water via a new pipeline to the Southern Water supply area. A new water treatment works would be needed as part of this project, located close to the new reservoir.

We've agreed with Southern Water that, because of the proximity of the proposed new water treatment works, we'll seek the consent for it as part of the Development Consent Order (DCO) application for the proposed new reservoir.

This is a change from what we've previously said, but we believe that by doing this, we can help ensure that the reservoir and the water treatment works are planned in an integrated and complimentary way.

We've carried out further assessment work since the consultation in 2024 to review our two preferred locations to determine the best location for the Water Treatment Works. Our assessments show that Option 2 – which is closer to the reservoir – would make construction more complicated owing to proximity to the proposed pumping station and tunnel and a potential clash with the construction compounds.

Option 4 remains our preferred option. It's located further from the other main operational assets approximately 600m north-west of Drayton and 1km north-east of the proposed site so it would also offer an improved visitor experience by separating operational assets and visitor access. It would also reduce construction complexity as it's a larger area, allows for more flexibility for the design, and ensures we minimise visual impacts and can integrate the works into the landscape.

You can see previous location options on a map in Page 9 of our Consultation Map Book:

thames-wrmp.co.uk/news/documents

Flood management

We're aware of the existing flooding issues on and around the proposed location of the new reservoir. There are three main categories of flooding issues currently impacting the local area:

- Fluvial flooding, caused by rivers and streams overtopping their banks
- Surface water flooding, caused by rainfall running over or ponding on the ground
- Groundwater flooding, caused by groundwater rising to the surface.

Flood risk management is a core component of the reservoir's design. Although the reservoir would replace some existing farmland, it would also include extensive flood mitigation measures, such as wetlands, habitat creation and improved drainage. Reservoir embankments and associated landscaping would be carefully engineered to manage runoff effectively. The project will undergo rigorous flood risk assessments to ensure that local flood resilience is not compromised, and where possible, enhanced.

At this stage, we're developing our flood modelling in the local area further to ensure it accurately reflects the current and predicted situation. We're also engaging with stakeholders such as the Environment Agency and local authorities to get their views and input.

We're committed to ensuring that the reservoir mitigates any flooding impacts. We'll be able to provide more details on our proposals for flood mitigation in the summer and at the statutory consultation later in 2025. You can read more about flooding in our Flood Management Factsheet, which can be found on our website at: https://thames-wrmp.co.uk/news/documents/

Finally, we're also looking at opportunities to help other organisations, such as the Environment Agency, improve the management of flooding in the local area and Abingdon.

Environment and ecology

We're continuing to explore ways to improve biodiversity, protect the wide variety of wildlife, habitats and woodland in the area, and ensure we address local concerns about the overall effects of the project on the local environment and wildlife.

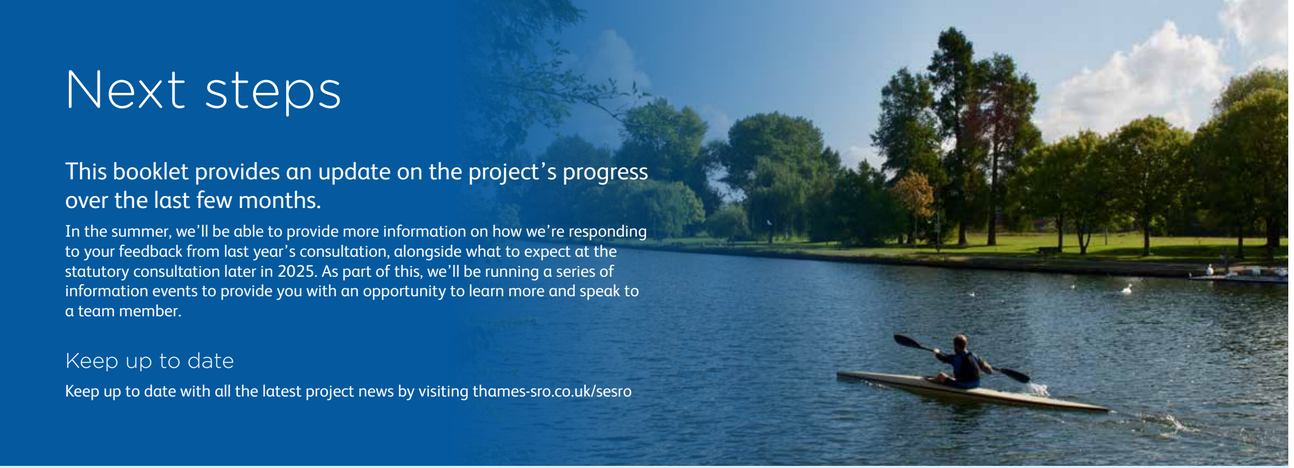
Our goal is to increase biodiversity and provide a space that supports nature. This includes:

- Assessing additional offsite opportunities for nature conservation, including woodlands, grasslands, hedgerows, ponds and ditches
- Providing safe areas for protected species to be relocated if needed.

We're exploring options to manage the potential ecological impact of the proposed access road, particularly regarding lighting and noise, to protect local wildlife.

We're carrying out extensive ecology surveys in and around the site in the spring. These will capture information on the flora, fauna, biodiversity, species and habitats in the local area – including any impacts we may need to mitigate on and off the site.

Next steps



This booklet provides an update on the project's progress over the last few months.

In the summer, we'll be able to provide more information on how we're responding to your feedback from last year's consultation, alongside what to expect at the statutory consultation later in 2025. As part of this, we'll be running a series of information events to provide you with an opportunity to learn more and speak to a team member.

Keep up to date

Keep up to date with all the latest project news by visiting thames-sro.co.uk/sesro

Project timeline

Contact our engagement team

We have a dedicated team on hand to help you with any queries you may have.

If you have any questions, please get in touch with our engagement team by email: info.SESRO@thameswater.co.uk

For more information on our proposals, please visit www.thames-sro.co.uk/sesro or scan the QR code below.

Working with:

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Thames Water Clearwater Court Vastern Road Reading RG1 8DB