Working with

Affinity Water

WATER for LIFE from Southern Water

A new reservoir for the South East

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Contents

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A joint message

Water is essential for life. Every day, we supply top quality drinking water to customers and businesses

It's our purpose to deliver this essential service so our customers, communities and the environment can thrive. In the face of the challenges of climate change and population growth, it's more important than ever that we plan for the future to secure our water supplies.

Planning for the future is challenging; no one can be absolutely certain how climate change will impact us over the next 50 or 100 years, or beyond.

Nonetheless, it's important we plan for a drier future and Thames Water has been working collaboratively with Affinity Water and Southern Water to develop strategic plans for water supplies for London and the South East, while helping our neighbouring water companies protect some of the world's rarest chalk streams.

The largest project being taken forward to help meet these challenges is a new reservoir for the south-east, the South East Strategic Reservoir Option (SESRO). Although our plans are at an early stage we feel it's important to keep everyone up to date. Thames Water's revised draft Water Management Resources Plan sets out the strategic need for the reservoir and also how large it should be, so that we meet our goal of a safe, sustainable, and secure water supply.

A new reservoir also provides fantastic opportunities for recreational and environmental benefits, but we know the local community will have concerns too. As the project develops over the coming months there will be opportunities for you to provide your views and we will ensure that all feedback is considered to help make the reservoir an asset for the local community as well as the wider region.

Thank you.

Planning for the future

Every day we turn on our taps to fill glasses of water, make cups of tea, wash, cook and clean. We rely on water to run our schools, hospitals, essential services, and businesses. We need it to keep the world around us healthy too.

We forecast that we face a shortfall of over 1 billion litres of water every day for our customers in the next 50 years – enough to fill around 400 Olympic sized swimming pools.

The main factors that affect how much additional water we'll need in the future are:

- a growing population
- a changing climate
- the need to provide increased resilience to droughts
- reductions in the amount of water we take from rivers and groundwater to improve the environment.

This is a huge challenge that we're taking very seriously.

Our long-term plan

Under the umbrella of Water Resources South East, we've been working with five other water companies in the South East, as well as with customers, stakeholders and other water-using sectors, to develop plans to address our future water resources challenges.

We published our revised draft Water Resources Management Plan 2024 in the summer, following a public consultation earlier in the year, and you can find it at thames-wrmp.co.uk/document-library

Consultation feedback

We launched a public consultation on our draft Water Resources Management Plan in December 2022 and received over 1,680 responses. Since the consultation closed in March 2023 we've considered all of the feedback received, along with new information and policy requirements, and we've published our Statement of Response, which can be found at: thames-wrmp.co.uk/document-library/

Subject to acceptance by the Secretary of State for Environment, Food and Rural Affairs, our revised draft Plan lays the foundation for a wide range of solutions to plug the shortfall between the amount of water we have and the amount we need. These measures are designed to safeguard supplies and decrease the likelihood of facing water shortages during prolonged drought periods.

Along with setting a target to halve leakage by 2050 and installing a further one million smart water meters in customers' homes, at the centre of our Plan is a vital new water resource for the South East.

Fixing leaks

We're tackling leakage in our network, with 1,000 leaks fixed per week. However, we recognise that we can do better.

In our revised draft Plan, we've committed to halve the amount of water we lose through leaks by 2050. This is a challenging and ambitious target but one we're determined to meet.

Tackling leakage, though, will not on its own solve the future water supply challenge that we're facing. We also need to work with our customers to make sure we use our water supplies carefully and invest in new sources of water.

An essential new water supply for the South East

The proposed new reservoir to the south west of Abingdon would play a crucial role in protecting local and regional public water supplies during periods of drought, and help us to protect and improve the environment by reducing abstractions from some of our most sensitive rivers.

How would it work?

The reservoir would be filled with water from the River Thames in winter, when there's plenty of water. When river levels drop or demand for water increases, water would be released from the reservoir back into the river for re-abstraction downstream.

Reservoirs are valuable because they provide a reliable source of water. They can also offer recreational opportunities, support wildlife habitats and support flood management.

Indicative view of the proposed new reservoir

Why do we need the proposed new reservoir?

Modelling of future water resources – carried out by Water Resources South East, alongside all of the water companies in the South East – has confirmed that the reservoir is essential to help ensure that the South East has enough water in future.

In our draft Water Resources Management Plan, published in December 2022, we explained that the decision around the size of the reservoir was finely balanced between a reservoir that could hold 100 milion cubic metres (Mm^3) of water, and one that could hold 150 Mm^3. Having considered feedback from regulators, stakeholders and our customers and completed further technical assessments, we've concluded that we need to build the larger 150 Mm^3 reservoir.

It's hard to predict what our challenges might be over the reservoir's expected life span (up to 250 years), but a larger reservoir provides a resilient source of water. It also means we can share water and provides the ideal base of an adaptive plan for an uncertain future.

A 150Mm^3 reservoir would also give us around 50% more water for around 20% increase in investment compared to a 100Mm^3 reservoir, representing better value for money.

The reservoir will also help our neighbours Southern Water to take less water from Hampshire's rare and sensitive chalk streams – especially the Test and Itchen. A new pipeline from the reservoir, called the Thames to Southern Transfer, is proposed as part of wider plans. It would be capable of transporting up to 120 million litres of water a day from the reservoir to Southern Water's customers in Hampshire.

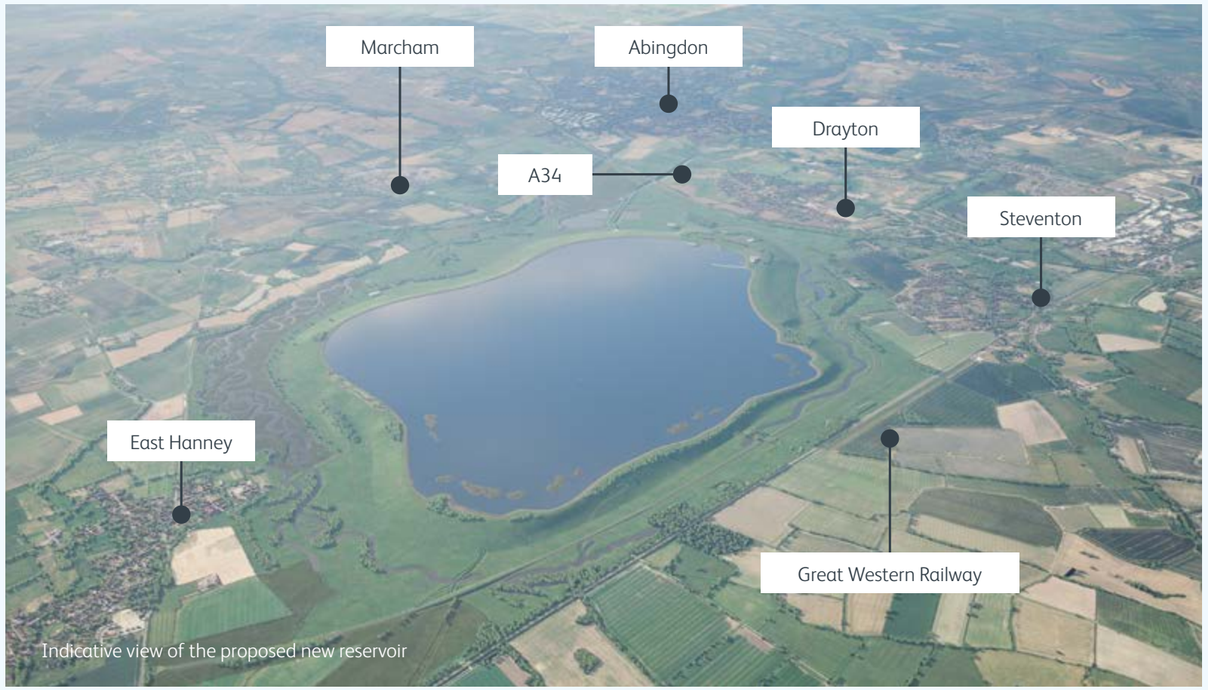
The proposed reservoir site

The proposed reservoir site is set within the area bounded by the A34 and the village of Steventon to the east, the Great Western Main Line (London to Bristol) to the south, the A338 and village of East Hanney to the west, and the River Ock to the north.

There aren't many suitable sites in the South East for a new large reservoir, as they need to be close enough to a large river and have suitable underlying geology.

The site chosen:

- is close to the River Thames
- has reasonably flat land
- has the right geology and ground conditions for a reservoir, e.g. the site has enough thickness of clay to retain large volumes of water
- is adjacent to a railway line and has major road links that could be used to deliver construction materials



Indicative view of the proposed new reservoir

Key facts

Surface water area 6.7 km^2

Volume 150 Mm^3

It will come into use by 2040

Could supply 271 Ml/d

equivalent to over 3 million baths

Our conceptual design for the reservoir

1. Proposed reservoir
2. Reservoir embankment
3. Screening mounds
4. New road
5. Wetland habitat / floodplain compensation
6. Safeguarded corridor for future canal
7. Land for future Water Treatment Works
8. Underground pumping station
9. Watercourse diversions
10. Wetlands
11. Access road
12. Drawdown channel
13. Water transfer tunnel
14. River Thames intake and outfall
15. Potential location for railway sidings and material handling
16. Potential access location for water-based recreation

Moving water to and from the reservoir

The proposed new reservoir would supply water to local customers, as well as homes and businesses across London and the South East.

Thames Water customers in the Thames Valley

Water would be supplied via a new pipeline to support customers in both the ‘Swindon and Oxfordshire’ and ‘Slough, Wycombe and Aylesbury’ customer areas.

Thames Water and Affinity Water customers in London

Water from the reservoir would be released into the River Thames to flow downstream to London for abstraction for Thames Water and Affinity Water customers.

Southern Water customers in Hampshire

Water from the reservoir would be treated and transferred via a new pipeline to Southern Water customers in Hampshire. This will help Southern Water continue to reduce its abstractions from the Test and Itchen rivers, two of the world’s rarest and most sensitive chalk streams.

Land within the reservoir site would be safeguarded for the construction of a water treatment works and supporting infrastructure, which would be subject to public consultation and planning approval.

Developing our proposals for the new reservoir

Subject to government acceptance of our revised dWRMP24, we'll now develop our reservoir proposals. This will involve:

Getting a design team in place

We have a world class design team in place to support our reservoir work. Our team includes technical experts with international expertise in developing reservoirs. Alongside considering key factors like flood risk, reservoir safety and operation of the reservoir, they're helping us develop an ambitious design vision for the reservoir. There will be opportunities for the community to shape the design in our future consultations.

Extensive surveys and investigations

We are rolling out an extension programme of surveys and site investigations to build up an in-depth understanding of the environment and inform our design and assessment work. One key area of focus will be local ground conditions and we're planning to carry out a 'clay compaction trial' next year.

The trial will help us understand the range of the clay's properties on site, and how easy the clay is to dig out, move around, and how much it shrinks during normal use when compacted.

We're also collecting environmental monitoring data and undertaking biodiversity surveys examining species such as birds and reptiles, habitats, trees and other local natural features.

- We'll work with Natural England to obtain any appropriate licences if we're impacting protected species.
- We'll keep engaging with local heritage and archaeology specialists to ensure we've as much information as possible.

Where we identify adverse environmental impacts, we'll make sure we avoid, reduce and mitigate those impacts.

Environmental impact assessment

We'll carry out an Environmental Impact Assessment (EIA) to record what the environment is like now and how we predict it will change in the future, both with and without the reservoir. This will help us adapt our reservoir design to ensure we protect the environment, promote ecological enhancement and mitigate the impact of construction on the surrounding environment.

And we'll request an opinion from the Planning Inspectorate (PINS), acting on behalf of the Secretary of State. They'll give an opinion on the scope and level of detail of the EIA after consultation with local and national organisations, such as the Environment Agency and Natural England.

Typically, an EIA will consider a broad range of factors of the environment including:

- Population and human health
- Biodiversity, including protected species and habitats
- Land, soil, water, air and climate change
- Material assets, cultural heritage and the landscape
- The interrelationship between all the above factors

The impacts on neighbouring communities during the construction of the reservoir, such as noise, dust and traffic movements, will also be a key consideration within the EIA. We'll include the ongoing operation too, such as flood risk and the impact on surrounding landscapes.

Studies are also underway to identify how we can make improvements to the local environment and biodiversity.

Designing and building the new reservoir

During the next stage of the project we'll design a reservoir that will leave a lasting and positive legacy for the community. Public engagement and consultation will be a key part of this and we encourage everyone to participate in future public consultations, which are planned for summer 2024 and summer 2025.

Key parts of the design that we'll focus on include:

The reservoir embankments

The reservoir would be constructed by excavating a large pit and using the excavated clay to form the new reservoir embankments. We expect that around 90% of the material currently in situ could be used during construction, greatly reducing the need to transport material to and from the site.

Infrastructure to get water to and from the reservoir

We'll be preparing designs for a tunnel deep in the foundation of the reservoir, which would be used to transfer water to and from it.

We'll also be designing a pumping station, an intake structure on the River Thames (to draw water into the reservoir) and an outfall structure on the River Thames (to release water back into the river), as well as inlet-outlet towers that would be located in the reservoir itself.

Operational infrastructure

We'll develop designs for a draw-down channel, which could lower the water level in the reservoir when needed. This would be an essential safety feature. We'll also need to consider the equipment that we'd install in the embankments to monitor the performance of the reservoir.

Access during construction and once the reservoir is built

We'll be working out how construction traffic can get to and from our works compounds whilst minimising impacts on local residents, businesses and the road network. We'll also design a new road between East Hanney and Steventon, to the south of the existing Hanney Road which would need to be closed.

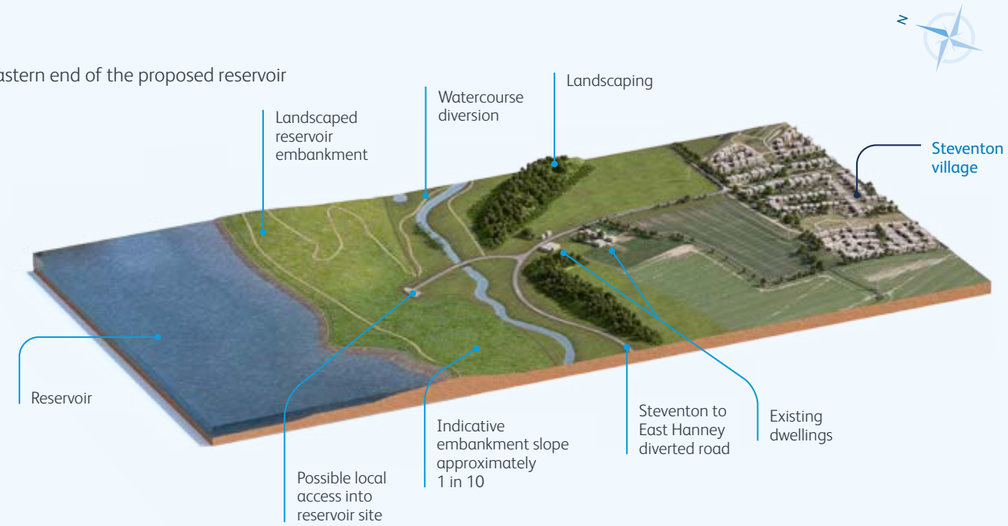
Landscaping and wetlands creation

Working closely with stakeholders including Natural England, we'll carry out an extensive study on how to integrate the new reservoir with its landscape. We'll be looking at wetland creation, flood mitigation and biodiversity net gain, helping to enhance the surrounding environment and benefit wildlife.

Opportunities for public recreational spaces and public rights of way

As well as providing new habitats for wildlife we want to create extensive opportunities for new public spaces, providing access for all to the reservoir and its surroundings, including new recreational and educational facilities.

South Eastern end of the proposed reservoir



Western end of the proposed reservoir

...continued

The construction phase

We're planning to start building the new reservoir in 2029 and it will take around ten years to build.

As well as the new embankments, which would be created over a five-year period, we would need to build:

- Water pumping equipment and a pipeline tunnel
- Reservoir inlet and outlet facilities
- Other equipment for operating and maintaining the reservoir
- Facilities for the local community to use and enjoy.

Our indicative construction timeline

Year 1	**Enabling works**	Non-intrusive works, including ecology and archaeology, utility diversions.
Year 2	**Site mobilisation**	Site clearance, site compound construction. Waterway diversions, floodplain diversions, rail sidings and access roads constructed.
Year 3	**Main works start**	Waterway diversions, floodplain diversions, rail sidings, access roads completed. Hanney Road realignment construction begins. River outfall and intake works, tunnel works, earth work commence.
Year 8	**Mains work complete**	Reservoir embankment complete. Public facilities, including recreational facilities commence construction.
Year 9	**Commissioning**	Supporting infrastructure, for example pumping station, commissioned. Reservoir filling commences.
Year 10	**Filling and demobilisation**	Reservoir filling continues. Main compound removed from site and land reinstated. Landscaping and public facilities completed.
Year 11	**Reservoir open and operational**	Reservoir will be full. Facilities open to the public.

Being a considerate neighbour

To minimise the impact of the project on the local community, we'll take measures to ensure our works are carefully managed so that disruption can be avoided or minimised.

Our strategy for creating the new reservoir embankments is to use material from the site itself, which will minimise the lorries required to bring in material.

We will publish a Code of Construction Practice which will set out our commitments to local communities.

Safety is our top priority

We'll ensure that extensive measures will be in place at each stage of the design, construction and operation to manage the safety of the reservoir.

The safety of reservoirs in the UK is controlled through the Reservoirs Act 1975, and enforced by the Environment Agency.

Complying with the Reservoirs Act 1975

Design features

- Drawdown of reservoir water level set at 1metre-per-day as set out by regulations
- Using the latest technically-advanced reservoir models to ensure embankment stability and assess long-term settlement
- Settlement monitoring equipment set within embankment

Expertise

- Reservoir Panel Engineer will supervise the reservoir design and construction
- Reservoir Advisory Panel to review reservoir design development

Site Security

- Close surveillance of reservoir and supporting infrastructure
- Access to reservoir site managed and monitored as per Government requirements
- Access road to dam crest controlled
- Drawdown equipment secured

Best practice

- Reservoir design will follow international best practice

Addressing flood risk

We know that flooding has been an issue in the local area. We've studied the flood risk and are developing and refining our plans to ensure there'll be no increased risk of flooding from the reservoir during construction and operation.

A key part of our early construction work would be creating replacement floodplain storage around the site. Working with the EA and Oxfordshire County Council, we're also considering wider local flood resilience opportunities.

Opportunities

We have a unique opportunity to create a wonderful asset for local communities and provide a space for people to enjoy.
As well as providing the vital water resources we need, the new reservoir could bring environmental benefits, support the local economy, and provide value to local communities.

Potential opportunities

Activities	Environment	Economy
Educational facilities	Natural flood management measures, eg wetlands	New jobs
Country park	New woodlands	Training opportunities
Public art	Specialist habitat creation	Farming and agriculture
Indoor and outdoor sports activities	Informal parkland	Tourism opportunities
Play areas for toddlers, adventure play	Rafts for breeding birds	Local business suppliers
Walking, cycling and bridleways	Bank treatments	Visitors centre
Water sports, eg sailing & paddle boarding	Bird watching	Cafe
Angling	Waterside habitats at the reservoir edge	

We've done some very early work to identify potential 'zones' around the proposed reservoir site for wetland and wildlife areas, recreation and water sports, and landscaping and planting. We'll undertake further studies and engage with stakeholders and local communities as we develop these plans.

We have a unique opportunity to create a wonderful asset for local communities and provide a space for people to enjoy.

We are at an early stage in the design of the reservoir. This map shows possible areas, or zones, of the reservoir. It does not include all the features such as walking, cycling and bridleway routes, and recreation and public education facilities. We want to work with stakeholders and local communities as we develop the design.

1. New wetland habitats providing a home for a wide range of wetland wildlife. This will be a quiet area to be enjoyed by visitors, with boardwalks and bird hides.

2. Main access into the site with areas of wetland habitat and grassland, and a network of footpaths for visitors to explore.

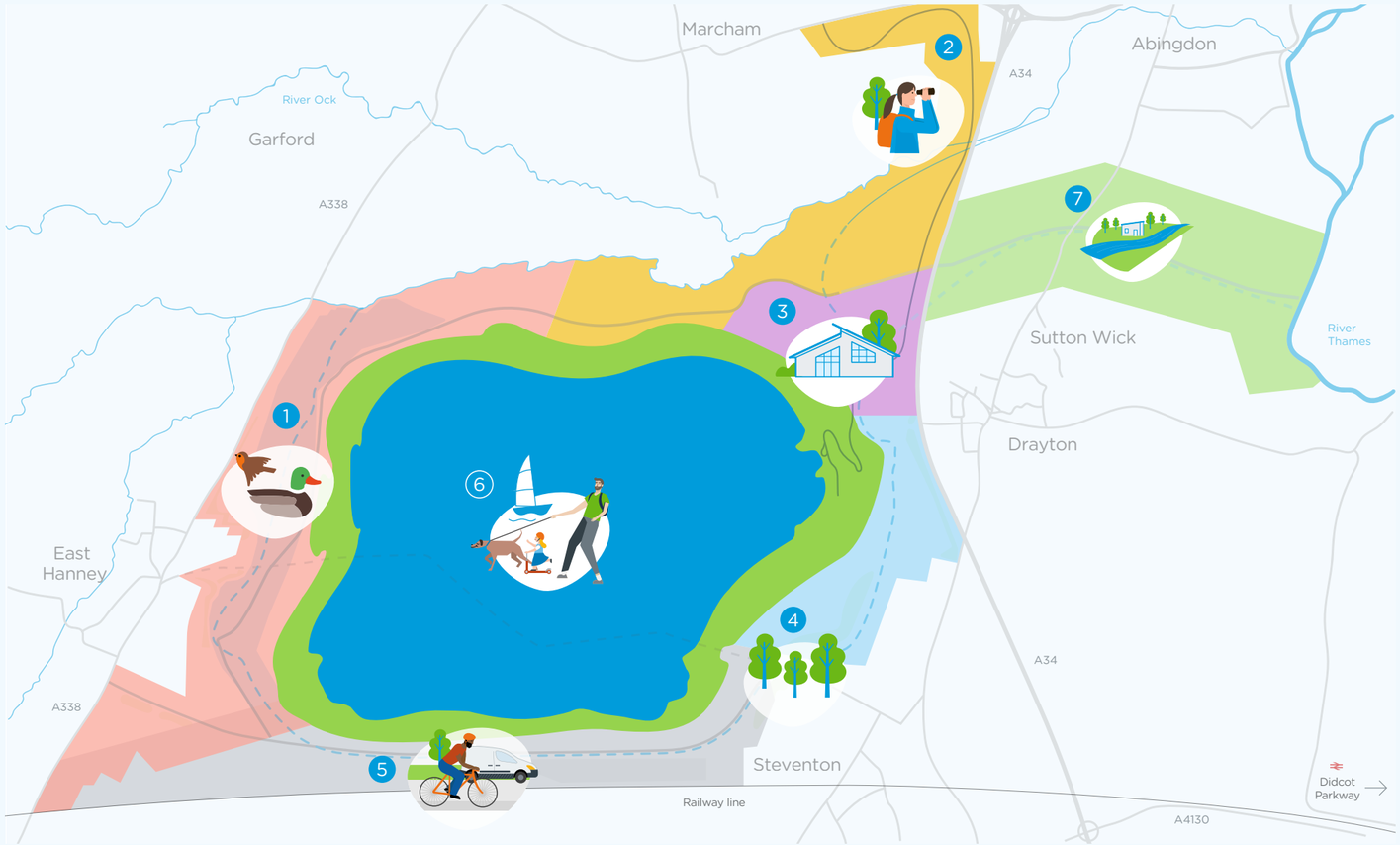
3. Main hub for recreation and leisure facilities. Operational buildings will also be located here, including a new water treatment plant and pumping station.

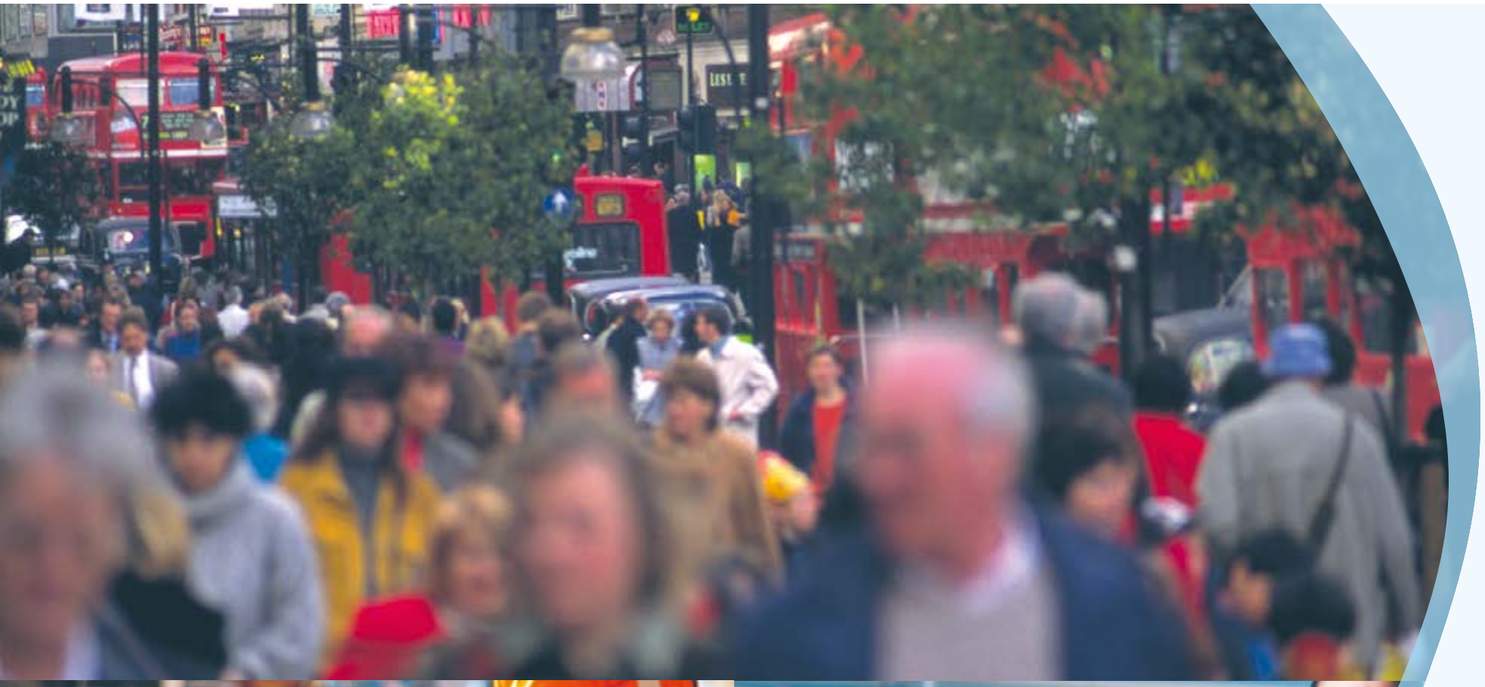
4. Tree planting and grasslands to integrate with the local landscape, with natural leisure and play areas. The diverted watercourse will also be located here.

5. A new road between Steventon and East Hanney, with a foot and cycleway. There will also be a new rail siding to move materials to and from the site during construction. Grassland and woodland habitats will enhance the appearance of the area.

6. There will be a range of opportunities for managed water-based recreation such as angling and sailing, as well as lagoons and small floating islands for wildlife. There could also be a footpath or cycle-path around the top of the embankment, and a network of cycling and walking routes around the site.

7. There will be an underground tunnel to move water between the river and the reservoir with an intake/outfall structure on the riverbank, and to remove water from the reservoir in an emergency. There may also be a channel, which could form part of the Wilts and Berks Canal. This could be used by boats from the River Thames and have a towpath for use by walkers and cyclists. A range of options are being considered.





Public engagement and consultation

Dedicated community engagement team

Our dedicated community engagement team will keep local residents and businesses informed and seek detailed dialogue to understand key areas of concern, local and regional priorities. This will help us address the things that matter to people.

Public consultation

We're planning to hold public consultations in summer 2024 and summer 2025, at key points in our design process. During these we'll share emerging proposals, gather feedback, consider all of the feedback received and use it to inform how our proposals develop.

Reservoir development forum

We intend to set up a forum with stakeholders and representatives of local communities to help shape proposals.

Statement of Community Consultation (SoCC)

We'll prepare a SoCC, as required by the Planning Act 2008, setting out the ways that we'll consult with the local community.

Leaving a positive legacy

A new reservoir offers the potential for significant long-term community benefits and we'll seek your views about what you think these should be and how they should be delivered.

Engagement with affected landowners

We're engaging potentially affected landowners at a very early stage and we'll keep in close contact as we develop proposals for the new reservoir.

Our commitments to you – we will:

- Work with the community to develop a design that delivers opportunities for accessible recreation, leisure and education
- Be open to ideas for community partnerships, including the creation of new open spaces, orchards and woodlands
- Work with schools and colleges to develop opportunities for local training and employment
- Work with local groups to incorporate activities such as sailing, fishing, bird watching, paddle/wind sports, running, cycling and trail walking
- Create new wetland habitats, that will help increase biodiversity and capture carbon.

- Provide opportunities for local access for the residents of the nearest villages, with visitors from further away being routed to a dedicated visitor centre
- Design embankments that are grassed, with gradual slopes, landscaped and set back from the nearest villages
- Comply with the Reservoirs Act 1975, which sets strict safety standards and requires the appointment of an independent engineer to ensure they are followed
- Design drainage systems to collect surface water and manage it, helping to reduce future flood risk
- Develop plans that locate site entrances away from the local villages and maximise the use of the railway to minimise movements by road.

- Carry out an Environmental Impact Assessment and develop a Code of Construction Practice that shows how we have addressed the concerns of the local communities
- Deliver best value for customers – learning from the success of Thames Tideway Tunnel, which is being constructed by a new, competitively tendered Infrastructure Provider, from which our shareholders do not profit
- Engage in a continuous dialogue with local communities through a dedicated engagement manager and more formal consultation as part of the rigorous planning process.

Seeking the powers to build the reservoir

Because the reservoir is a Nationally Significant Infrastructure Project, we would submit a Development Consent Order (DCO) application to seek a range of planning, land and environmental consents. We currently plan to submit a DCO application in autumn 2026.

The DCO application would be submitted to the Planning Inspectorate, which would consider it and hold an Examination before writing a report with its recommended decision. The final decision would be made by the Secretary of State for Environment, Food and Rural Affairs.

If granted, a DCO would provide the necessary consents and powers to enable the project to proceed, including consent to build, operate and maintain the new reservoir, the ability to acquire temporary and permanent rights over land, and the right to undertake works that affect roads, streets and utilities.

A new way to deliver the proposed reservoir

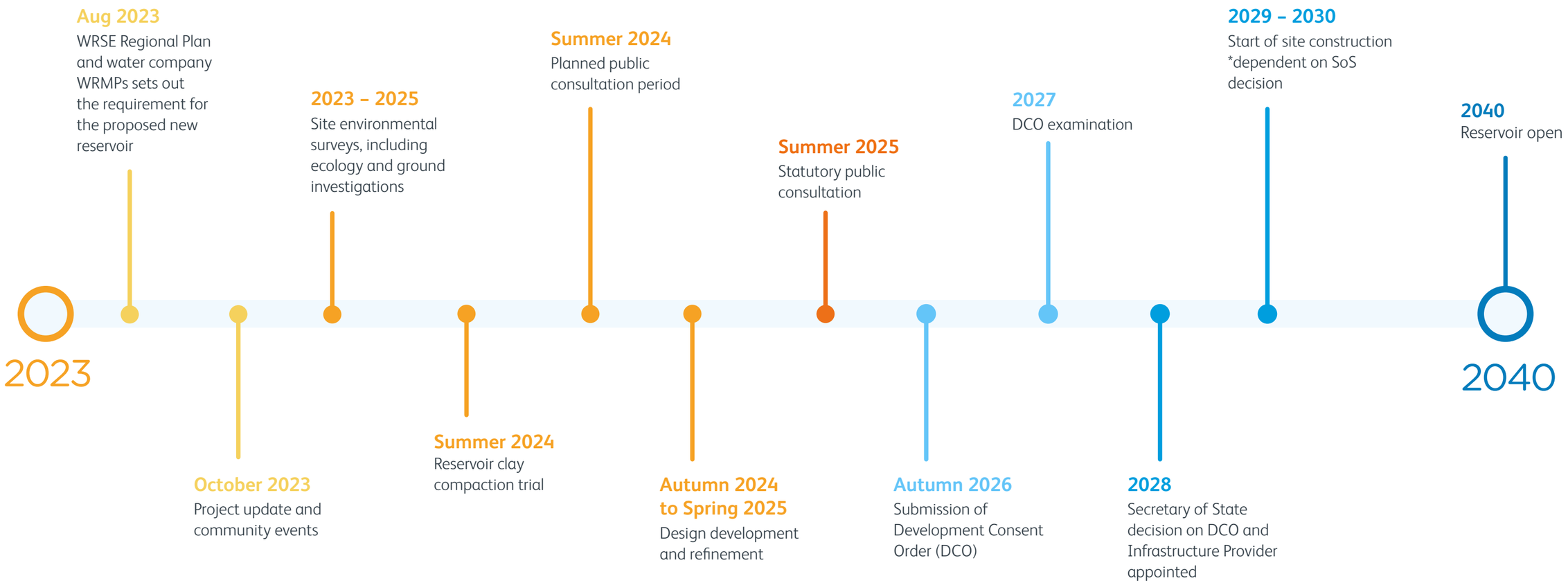
Indicative view of the proposed new reservoir

Given the regional importance and scale of the reservoir, we've proposed to Ofwat that it will be delivered and maintained by a new infrastructure provider under the Specified Infrastructure Projects Regulations (SIPR).

SIPR enables water companies to tender more aspects of an infrastructure project, including financing and long-term maintenance, via a competitive process overseen by Ofwat.

This can create additional opportunities, including innovation and lower financing costs. This is the same approach that's being used for the Thames Tideway Tunnel in London. Thames Water would remain responsible for getting the necessary consents for the reservoir, including planning consent, with the Infrastructure Provider building and maintaining the reservoir once consent has been granted, on behalf of all beneficiary water companies.

Project timeline



Find out more by:

- visiting thames-sro.co.uk/SESRO
- registering to attend one of our community information events at thames-sro.co.uk/events
- emailing us at info.SESRO@thameswater.co.uk

Thames Water

It's everyone's water

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