Ofwat

# Building a resilient future

## A Major Projects guide for the supply chain

RAPID

Ofwat

Environment Agency

dwi

# Contents

# 1 Executive summary

The water sector in England and Wales is undergoing a generational transformation, driven by climate change, population growth, environmental pressures, and rising demand. By 2050, the gap between sustainable water supply and projected demand could reach nearly 5 billion litres per day. While demand-side measures like reducing consumption and leakage will help, they're not enough—large-scale infrastructure projects are essential to ensuring long-term resilience.

Ofwat's PR24 price review has earmarked £2.15 billion to support the early-stage development of 30 major water infrastructure projects, collectively expected to cost £50 billion over their lifecycle. These projects – largely strategic resource options – will be delivered over the next 15–20 years and represent the biggest investment programme in the sector since privatisation. From a supply chain perspective, this is a once-in-a-generation opportunity.

Most of the major projects will be delivered via Direct Procurement for Customers (DPC) or the Specified Infrastructure Provider Model (SIPR)—both competitive tendering routes that open the door to a wide range of supply chain partners. These include contractors, designers, technology providers, and systems integrators. Under DPC, third parties design, build, finance, and often operate major infrastructure assets. SIPR, meanwhile, is used for even larger, more complex projects where direct regulation may offer better value for money.

This shift to competitive delivery models means water companies are no longer the sole developers—they're becoming intelligent clients. The supply chain is now expected to bring forward ideas, innovation, and capacity. This is especially important as many of these projects exceed £200 million in value and involve levels of complexity not tackled by water companies in decades. The RAPID (Regulators' Alliance for Progressing Infrastructure Development) programme supports the development of these strategic options and includes a four-stage gated process to assess feasibility, design, procurement readiness, and delivery assurance. This structure gives supply chain partners visibility of project timelines, risk allocation, and procurement milestones.

## For those in the supply chain this means:

### Clear and growing pipeline

a pipeline of major infrastructure projects from 2027 onwards

### Commercial stability

long-term contracts underpinned by regulated revenue mechanisms

### Opportunities to shape delivery models

in areas such as digital design, offsite construction, modular delivery, environmental mitigation and smart operations

### Early engagement

with water companies and project sponsors to influence the design and delivery aproach

### Partner with global investors

the chance to partner with global investors and other delivery partners in forming Competitively Appointed Providers (CAPS)

Ofwat's Major Projects team will be actively engaging with suppliers and contractors through events, briefings, and one-on-one meetings. Companies looking to be part of this pipeline should act early to build relationships, understand procurement frameworks, and demonstrate their capabilities.

This is more than a capital programme – it's a long-term industrial opportunity. The supply chain has a vital role to play in helping the UK water sector adapt, grow, and deliver resilient infrastructure for generations to come.

# 2 An overview of Major Projects and RAPID

Water companies have a duty, every five years, to produce water resource management plans (WRMPs) which set out how they will continue to supply water in their supply area over at least the next 25 years. Defra or the Welsh Government approve WRMPs and some of those covering the 2025-50 period are yet to be approved.

The Environment Agency's review[1] of the English water companies revised draft WRMPs for highlights a shortfall of nearly 5 billion litres per day between available sustainable water supplies and expected demand by 2050. Reduction in consumption and leakage is expected to address over 65% of the supply demand deficit by 2049-50, but supply side solutions are needed and the revised draft WRMPs include c.50 new >10Ml/d supply options. Major new investments, including large infrastructure projects, will be required. Many of these projects are of a size and complexity that water companies have not delivered since privatisation, and third-party providers and investors may be better placed to deliver them, with greater capacity, more experience and more appropriate resources, offering real benefits to customers. These could accrue from innovation and design, operational savings, performance improvements, and financial structuring.

The Regulators' Alliance for Progressing Infrastructure Development (RAPID) was established in 2019 to help facilitate the development and funding of new large scale strategic water supply options by the water companies. RAPID is a partnership of the three water regulators – Ofwat, the Environment Agency and the Drinking Water Inspectorate. 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.

Ofwat's Major Projects and Markets directorate is responsible for the policy and market development for the future pipeline of major infrastructure projects in the water sector in England and Wales, as well as Ofwat's role in the oversight of the development, procurement, and delivery of these projects. The directorate works closely with RAPID on early engagement in both water resources and wastewater planning.

Ofwat is of the view that for the RAPID programme of projects, significant benefits could be derived for customers through competitive tendering of major infrastructure projects. This would allow third parties to design, build, finance, and potentially operate and/or maintain major infrastructure. This policy forms part of Ofwat's PR24 methodology as it can result in better value for customers by driving down costs and increasing innovation, while maintaining quality. The PR24 methodology also provides for benefits to customers in areas exporting water: customers receive a 50% share of the economic profit calculated for any trade which therefore benefits those customers for supporting resilience for other companies' supplies.

1. Summary of England's revised draft regional and water resources management plans

## Major water infrastructure projects in PR24 final determinations


Solid line = water transfers
Dotted line = connection
Circle = source

Major projects are defined as those with a whole life totex exceeding £200 million and a strategic resource option and/or meeting the criteria for delivery by competitively tendered models (Direct Procurement (DPC) or Specified Infrastructure Provider Model (SIPR). There are a small number of major projects that are strategic resource options but are not eligible for delivery through either the DPC or SIPR competitive tendering models and these will be delivered in-house by relevant companies using their own procurement processes but will have RAPID oversight. Ofwat's PR24 final determinations accepted a portfolio of 30 major projects. Total whole life totex for the 30 projects is estimated at £50 billion (2022-23 prices).

These are in addition to four existing major projects – Thames Tideway Tunnel, United Utilities' Haweswater Aqueduct Resilience Programme (HARP), and Dŵr Cymru's Cwm Taf water treatment works, all being competitively procured and delivered through SIPR or DPC, and Portsmouth Water's Havant Thicket reservoir which is being delivered in-house but subject to a 10-year price control.

## Key

- Cheddar 2 reservoir and transfer
- Broad Oak reservoir
- Fens reservoir
- Lincolnshire reservoir
- Mendip Quarry reservoir
- New Arlington reservoir
- North Suffolk reservoir
- Rudyard reservoir and transfer
- South East Strategic Reservoir Option
- West Midlands raw water storage reservoir

- Bacton desalination
- Mablethorpe desalination

- Aylesford (Medway) and Ford (Littlehampton) water recycling
- London water recycling (Teddington DRA and Beckton)
- Hampshire transfer and water recycling
- Minworth water recycling
- Poole water recycling and transfer
- Severn Trent sources and transfer

- Grand Union Canal transfer
- Kielder SRO transfer
- Lower Thames to West London Reservoirs transfer
- Peterborough to Grafham transfer
- Severn to Thames transfer
- South Yorkshire sources and transfer
- Thames to Affinity transfer
- Thames to Southern transfer
- North West source and transfer

- Nottinghamshire mine water treatment and transfer
- West Yorkshire water treatment works

## DPC – the default for discrete projects with whole life totex above £200 million

Ofwat's final methodology for PR24 set out that DPC applies by default for all discrete projects with whole life totex above £200 million, a change from the PR19 requirement to consider DPC for discrete schemes with expected totex over £100 million. Value for money (VfM) was one of the key reasons for Ofwat introducing DPC into the PR19 process, and a VfM assessment is required for all major projects except those being progressed under the RAPID process.

Appointees are required to assess the VfM of delivering the project via DPC as part of securing Ofwat's consent to put it out to tender. Appointees are required to model the difference in Net Present Value (NPV) of the revenue (in real terms) to be recovered from customers over the economic lifetime of the asset under DPC and under in-house delivery. Appointees are expected to have regard to Ofwat's standard modelling assumptions, current market conditions and intelligence from recent, relevant transactions.

DPC is the default position for large projects, and Ofwat's expectation is that most projects will be delivered by this route. If an Appointee considers that SIPR may be more appropriate, including meeting the legislative requirements for using SIPR and offering best VfM for customers, it needs to engage with Ofwat on the drivers for using SIPR over DPC. Ofwat has a formal role in specifying projects under the Water Industry (Specified Infrastructure Projects) (English Undertaker) Regulations 2013 and would need to agree with the Appointee's analysis before proceeding to specify a project for delivery under SIPR. SIPR, however, generally has higher set up costs and lifetime regulatory costs are generally higher under SIPR. Consequently, Ofwat expects it only to be used for larger more complex projects, including where direct regulation may offer advantages, and where the potential benefits offset the higher costs.

However, in March 2025, the Government announced that Defra will amend the Specified Infrastructure Project Regulations to streamline delivery of major water projects and provide better value to billpayers following the success of the Thames Tideway Tunnel project. This may present an opportunity for wider use of SIPR across the pipeline of projects.

## Gated approval process for RAPID projects

Projects in the RAPID programme progress through a gated process which enables the technical assessment of the projects to be carried out in parallel with the technical water resource planning work and includes assurance that the project is indeed viable. RAPID assesses the progress made in development of each project and provides recommendations to enable Ofwat to make decisions on continued ring-fenced funding for project progression. There are four RAPID gates:

- Gate one: initial concept design and decision making
- Gate two: detailed feasibility, concept design
- Gate three: developed design, finalised feasibility, pre-planning
- Gate four: planning applications, procurement and land purchase

## Ofwat stage approvals for competitively tendered projects

All RAPID projects are categorised as major projects, but those not eligible for competitive tendering will be delivered in-house and form part of the price review process. Major projects that are not strategic resource options are not RAPID projects and are not required to go through the RAPID gated process. Projects which are delivered by competitive tendering must go through a four stage Ofwat approval process[2], managed by Ofwat's Major Projects team, and aligned where possible with the RAPID gated process to avoid duplication.

### Stage one
### Establishing the strategic case

Appointees must establish the needs/ strategic case for the project and assess whether the project will be suitable for delivery under DPC. Stage 1 assessment is not required for RAPID projects as this is deemed to be passed through the RAPID gate one process.

### Stage two
### Approach to procurement plans, outline of the commercial model and designation of the project

This focuses on the procurement plans and is the start of the VfM assessment for non-RAPID projects. RAPID projects do not require a VfM assessment as they are of an order of scale and uniqueness that makes them less suited to in-house delivery, and it is accepted that competitive delivery will deliver VfM.

### Stage three
### Gaining consent to procure the project

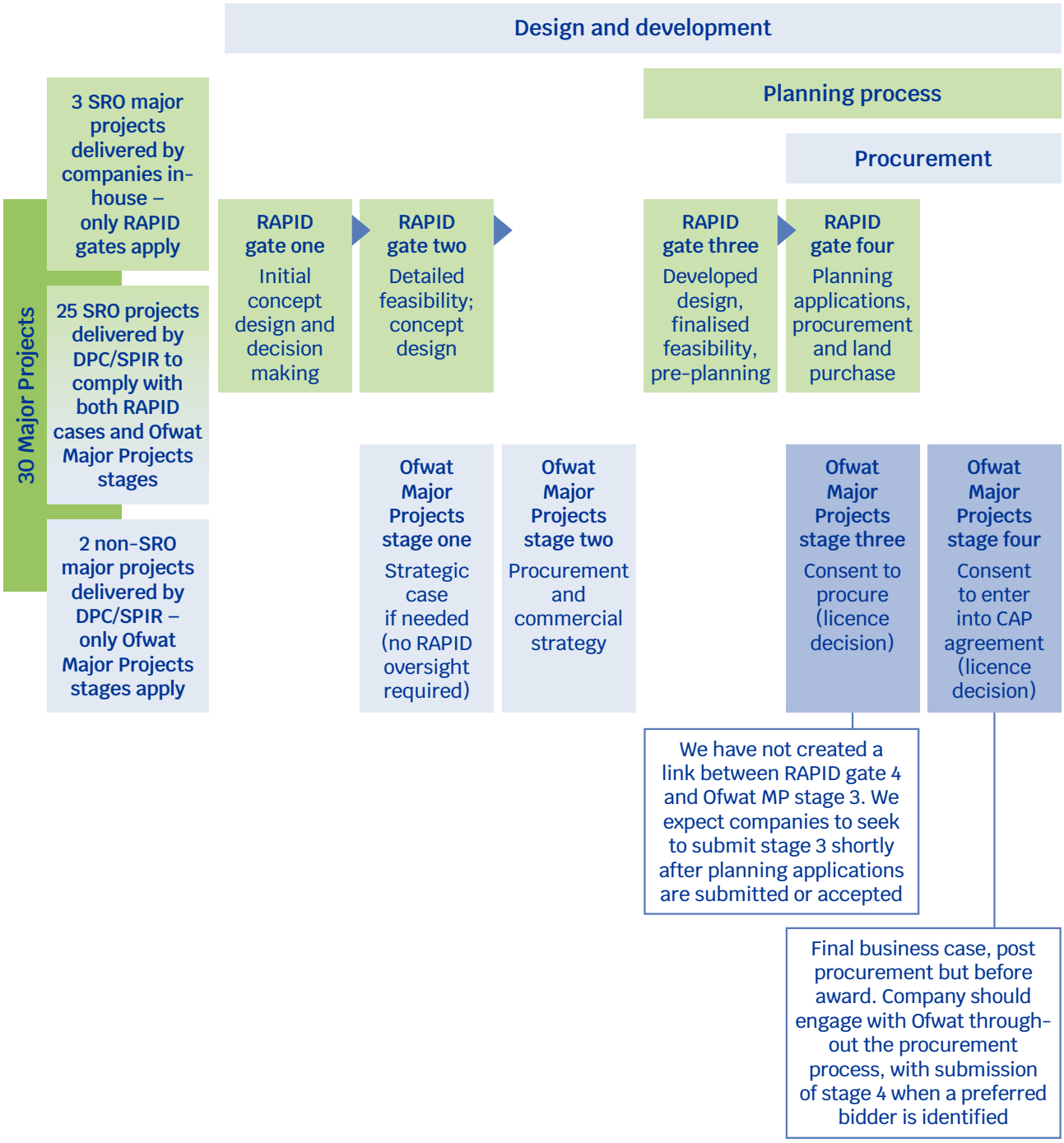
Ofwat's consent is required before a DPC project may be put out to tender, with a requirement for board assurance that the Appointee has sufficient resources, systems and capabilities to tender the project. Where applicable, full details of the VfM assessment are required.

### Stage four
### Gaining consent to enter into a CAP (Competitively Appointed Provider) agreement

The Appointee is required to provide evidence including that the procurement process has been effective and competitive, and that DPC delivery still offers best value (where applicable). The Appointee is also required to provide a board assurance statement.

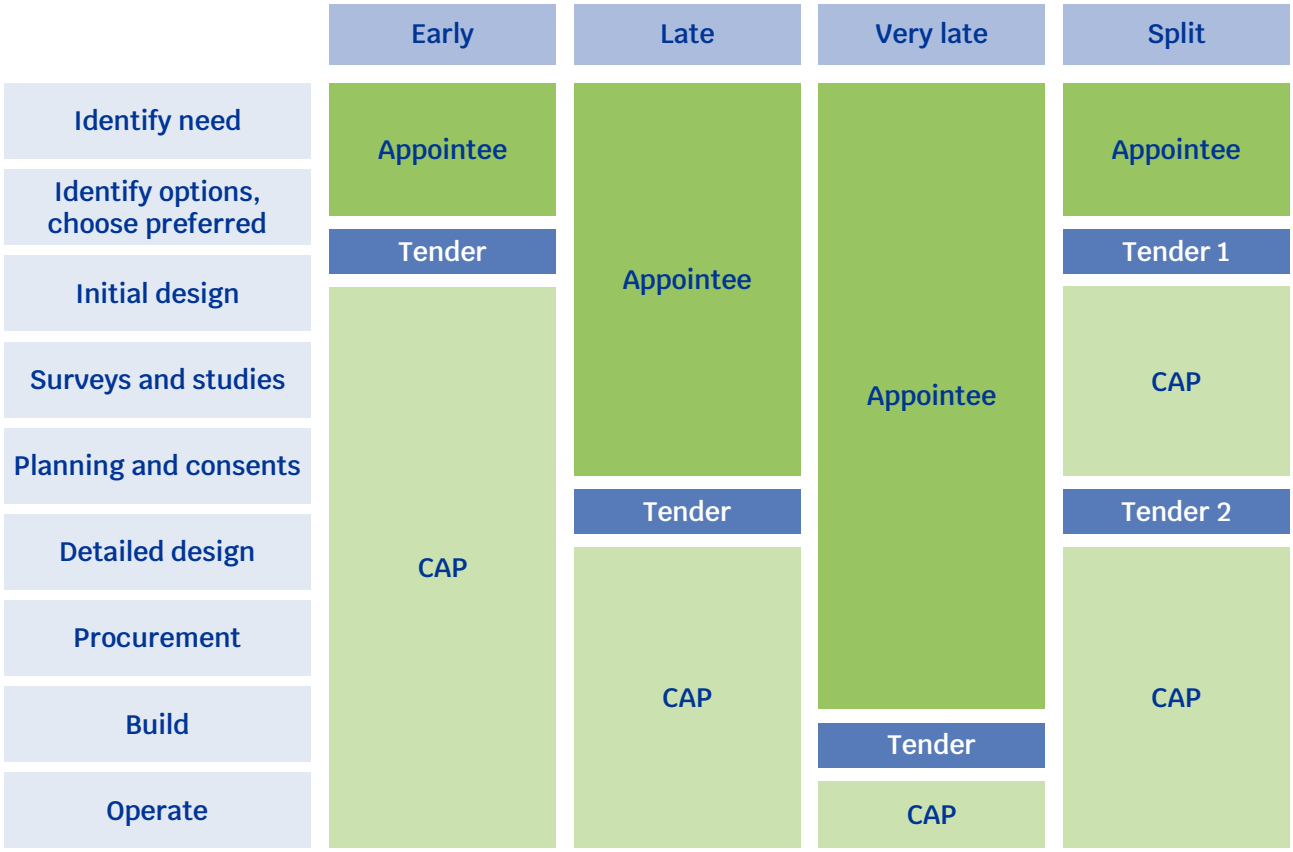
2. Guidance for Appointees delivering Direct Procurement for Customers projects

## Major projects by proposed delivery model and illustration of RAPID gates and Major Project stages



There are a range of possible tender models, with scope to tender at different stages in the project lifecycle. Ofwat is of the view that all models have the potential to drive significant consumer benefits, but Appointees are responsible for identifying the tender model best suited to the requirements of the DPC project. Justification of the choice of tender model and an explanation of why it provides best value for consumers form part of the initial stages of the assessment pathways outlined above.

## DPC tender models



## Restrictions on Appointees bidding for in area projects

In order to prevent real or perceived conflicts that could negatively impact the outcome for customers, an Appointee must not, without the prior written consent of Ofwat, bid in its own DPC procurement process, permit an associated company to bid in its DPC procurement process or award a CAP agreement to an associated company. This includes submitting a bid in its own name, being part of any consortium submitting a bid, or being named in any bid as the entity undertaking the DPC project.

There are similar prohibitions in place under The Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013. Provision 5 prevents an incumbent from undertaking a specified infrastructure project.

Provision 7 prevents an associated company of the incumbent company from bidding in tender process for a specified infrastructure project which relates to infrastructure for the use of the incumbent without the consent of the Secretary of State or Ofwat. Consent may only be given if Secretary of State or Ofwat is of the opinion that the participation of the associated company in the tender process will not have the effect of distorting competition or breaching the principles of non-discrimination or transparency in the process.

Companies can, however, bid for projects outside their area of appointment where they are not expected to be a beneficiary of the project, delivering the project as non-appointed business.

## Competitively tendered projects sit outside the price review process

Major projects are more complex and challenging to develop and deliver than the business-as-usual capital programmes managed by water companies. Design, consenting and construction can span multiple Asset Management Periods, and consumer benefits might not be realised for many regulatory cycles. Ofwat recognised that a different regulatory approach is appropriate and developed DPC as part of PR19.

Under DPC (and SIPR) funding for the detailed design, building, operation and maintenance of competitively tendered projects sits outside the price review process, with these costs set by the competitive process and recovered from customers via an Allowed Revenue Direction for DPC projects and a Revenue Agreement for SIPR projects, the key features of which are detailed in section 4 of this guide.

However, Ofwat allocates funding in the price review to cover the efficient costs to fund the gates and stages associated with the development of the projects, including project development costs and the cost of developing the project for competitive delivery. There is a focussed incentive package for companies to run an efficient procurement process with both rewards and penalties, and an uncertainty mechanism proposal to manage the risk of material increase in costs during 2025-30 that could create financial constraints for the Appointee company. Ofwat's PR24 final determinations make up to £2.15 billion (2022-23 prices) available to fund development and DPC/SIPR costs over the 2025-30 period, a material increase on the £469 million (2017-18 prices) made available at PR19 for the 2020-25 period.

Major projects which do not meet the requirements of DPC or SIPR will be delivered in-house, predominately treated as enhancement expenditure, with all their funding determined by the price review process

## No explicit restrictions on overseas involvement in DPC or SIPR projects

Overseas investment has played a major role in the financing and delivery of UK infrastructure, including water, and is likely to do so in the future. There are no explicit restrictions on overseas involvement in DPC or SIPR projects, and while water is a Critical National Infrastructure sector, it is not one of the 17 sensitive areas of the economy subject to mandatory notification of acquisitions under the National Security and Investment Act (NSI). However, a call for evidence response[3] published in April 2024 indicated that "the government is also exploring the possibility of adding water to the list of areas subject to NSI mandatory notification." Furthermore, the government can scrutinise and intervene in acquisitions made by anyone, including businesses and investors, that could harm the UK's national security.

The current pipeline of major projects is set out below. These are chronologically ordered by the current planned start date of construction, commencing from 2027.

3. National Security and Investment Act 2021: Call for Evidence Response

## 2027

- North West Transfer

## 2028

- Becton Water Recycling
- Minworth
- Teddington DRA

## 2029

- Aylesford and Ford re-use
- Cheddar 2 Source and Transfer
- Fens Reservoir
- Grand Union Canal
- Hampshire Water Transfer and Recycling
- SESRO
- West Yorkshire WTW

## 2030

- Bacton Desalination
- Lower Thames to West London Reservoir
- Mablethorpe
- North Suffolk
- Poole Water Recycling and Transfer
- Severn to Thames Transfer

## 2031

- Broad Oak Reservoir
- Lincolnshire Reservoir
- South Yorkshire Sources

## 2032

- Kielder Transfer SRO
- West Midlands Raw Water Storage

## 2033

- Thames to Southern Transfer

## 2034

- Severn Trent Sources

## 2035

- Mendips Quarry
- New Arlington
- Peterborough to Grafham
- Rudyard Reservoir Augmentation

## 2038

- Nottinghamshire Mine Water Treatment

## 2040

- Thames to Affinity Transfer

The Major Projects team is preparing a suite of documents to support Appointees in delivering these schemes, including updated DPC and SIPR guidance, standardised CAP agreements and cost estimation guidance. Additional guidance on compensation events, incentive and penalty mechanisms and bulk supply agreements will follow.

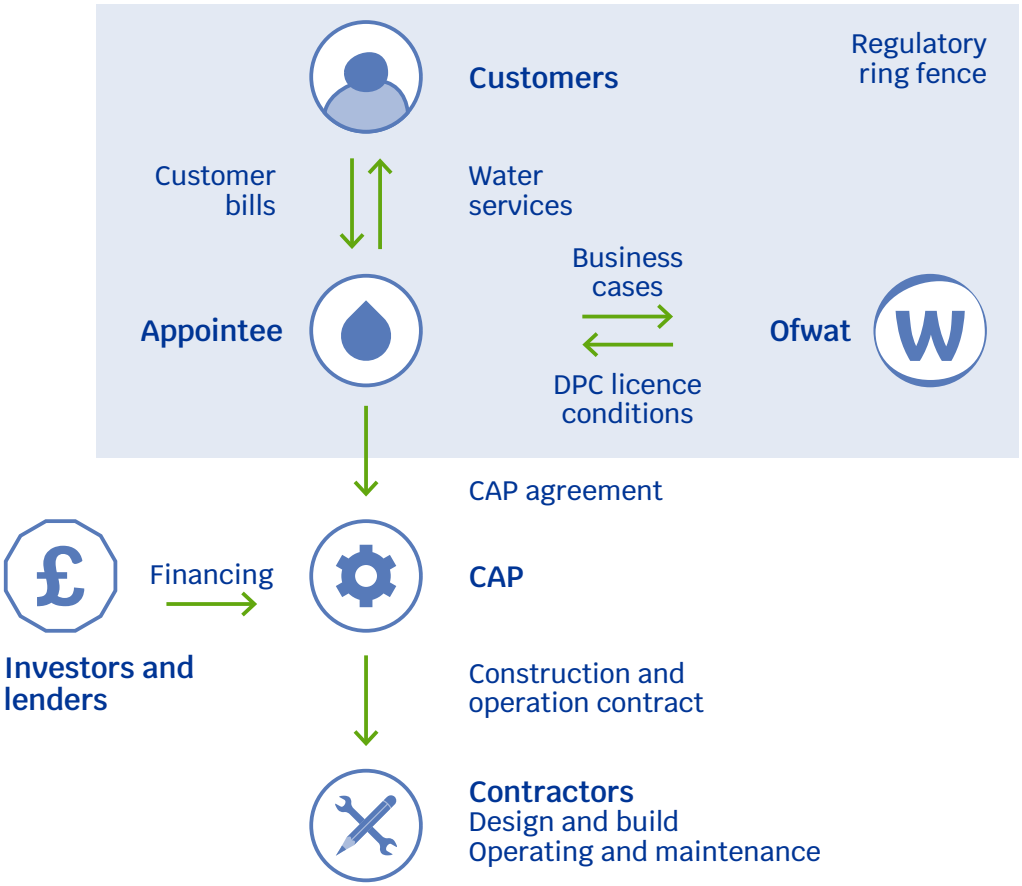
It is also expected that RAPID will update their gated guidance throughout the next 12 months.

# 3 Overview of the DPC and SIPR delivery models

Ofwat's final methodology for PR24 set out that DPC applies by default for all discrete projects with whole life totex above £200 million, and Ofwat's expectation is that most major projects will be delivered by this route. Of the 30 major projects accepted in PR24 final determinations, 24[4] have DPC as their proposed delivery model, with two more (United Utilities' HARP and Dŵr Cymru's Cwm Taf) already in train.

In the DPC process, Appointees put major projects out to competitive tender for delivery by third parties. The successful bidder is known as a Competitively Appointed Providers (CAP) who will be responsible for designing, building, financing, and possibly operating and/or maintaining the infrastructure. The CAP could be a consortium of different organisations funded by investors and lenders for the upfront investment required. Ofwat regulates the Appointee who bills and collects payments from its customers, to pay the CAP subject to them complying with the CAP agreement.

## The DPC structure




4. One project is proposed as in-house/DPC hybrid.

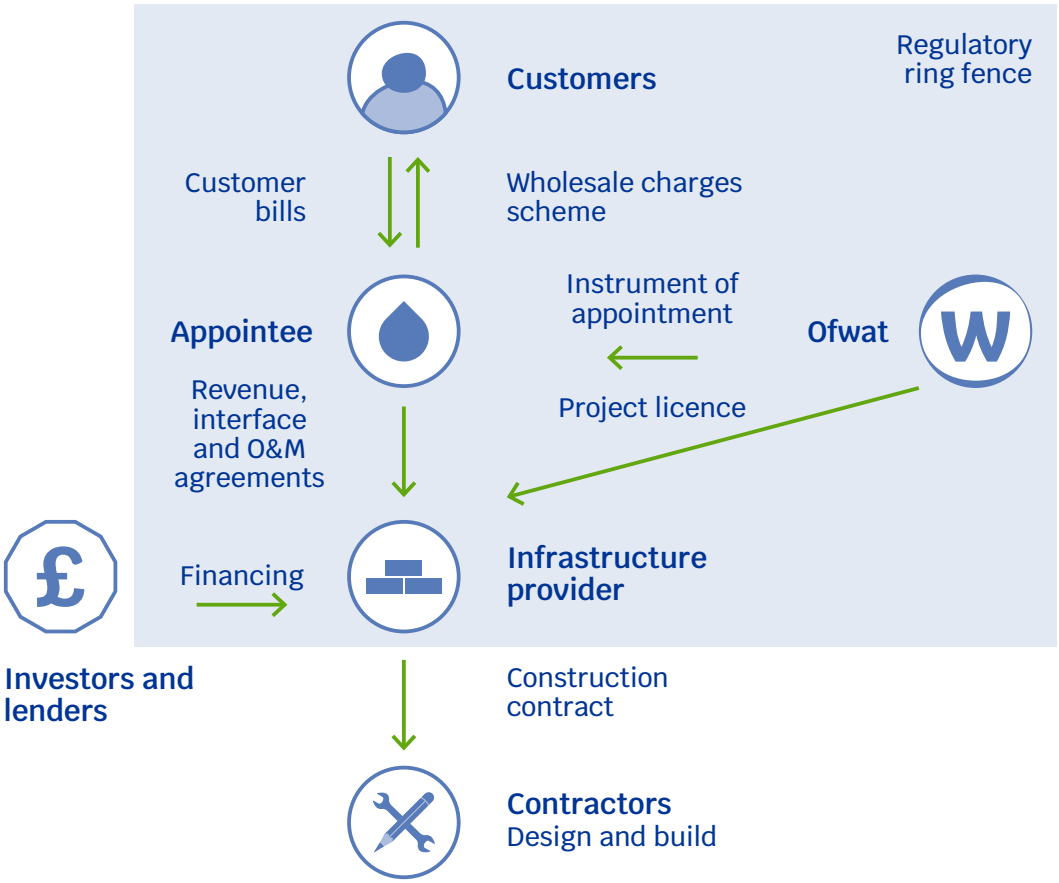
The alternative model for competitive delivery is SIPR, and under the Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013, the Secretary of State or Ofwat may specify projects for delivery under the Regulations if:

- the projects are of a size or complexity that threatens the incumbent undertaker's ability to provide services for its customers; and
- specifying the infrastructure project is likely to result in better value for money than would be the case if the infrastructure project were not specified.

If an Appointee considers that SIPR may be more appropriate than DPC, including meeting the requirements above, it needs to engage with Ofwat on the drivers for using SIPR over DPC. Of the 30 major projects accepted in PR24 final determinations, three are proposed to be delivered via the SIPR model in addition to Thames Tideway Tunnel, which is the only project to be delivered through SIPR to date.

## SIPR structure

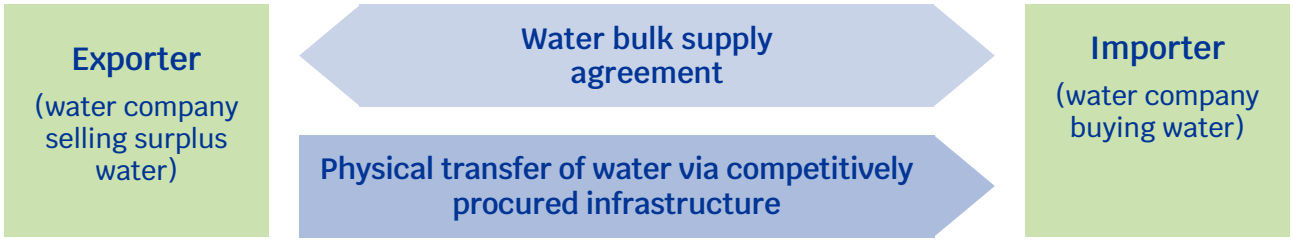
Under SIPR, a third-party service provider, known as the Infrastructure Provider, is granted its own licence by Ofwat who then regulate them directly, whereas under DPC, the activities of the CAP are regulated indirectly via the contractual relationship between the CAP and the Appointee.



## The Lead Party Model

The programme of water resource infrastructure solutions are regional schemes and multi-party in nature. They range from bilateral (bulk supply) water transfers between two water companies to those with multiple water companies (those selling the water – the exporters and those buying the water – the importers). For some solutions multiple water companies could be providing water to a lead water company who then exports to one or more importing companies. The diagram below sets out the high-level parties and process for a bulk supply transfer.

## Basic representation of water transfer and parties




There is a need for commercial and regulatory frameworks to govern the design, construction, financing and operation of the infrastructure required to support the solutions, and where there is a transfer of water between an exporting water company and an importing water company there will be a need for agreements to govern that supply.

Multi-party and third-party contractual arrangements are relatively new for the sector, and the types of contracts needed will depend on the commercial model under which the solutions are delivered and operate, and the commercial risks that flow from those structures.

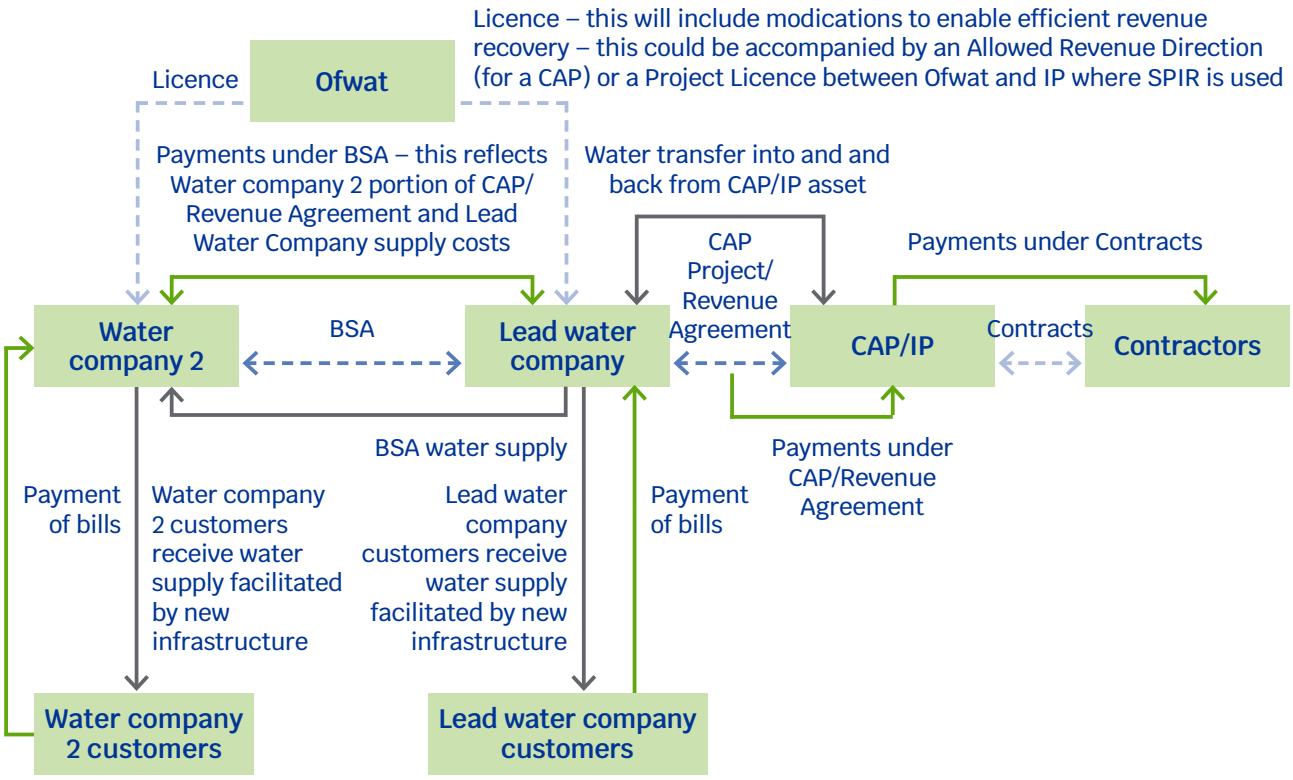
In November 2023, we consulted on the proposal for projects being delivered through a default Lead Party commercial model.

In the Lead Party Model, one water company ('Lead Water Company') 'delivers' the relevant infrastructure that facilitates a multi-water company supply. It develops this infrastructure both on behalf of itself and the other water companies who will benefit from the supply (i.e., the exporters and importers). Actual export and import would remain the responsibility of the Lead Water Company by way of a bulk supply agreement.

More specifically, the Lead Water Company procures and appoints (through competitive tender) a third-party provider (an IP or a CAP). The CAP/IP will enter into a contract (or contracts) with that Lead Water Company – these contracts will set out the obligation to provide the infrastructure and provide for payment to the CAP/IP.

Under a Lead Party Model, the CAP/IP may be responsible for the design, construction, completion, maintenance and operation of infrastructure that facilitates a supply (and the financing of those activities). The CAP/IP would enter into subcontracting arrangements for works with one or more contractors.

## Lead Party Model




The role of the CAP/IP relates to the relevant infrastructure. The infrastructure will integrate into the network run by a water company (likely the Lead Water Company. To ensure the transfer of water from any exporters to any importers and appropriately allocate both the costs for any water supply and the costs of the infrastructure that facilitates it, there is a bulk supply agreement between the Lead Water Company and the other water companies.

# 4 Upcoming major projects

The water sector is facing significant challenges from climate change, population growth and aging infrastructure. Major new investments are required including large infrastructure projects. The complexities and challenges of delivering such projects, and the timing of consumer benefits requires a different regulatory approach to the five-yearly price review process, with major projects the responsibility of Ofwat's Major Projects and Markets directorate. Ofwat's PR24 final determinations accepted a portfolio of 30 major projects, of which 27 are proposed to be delivered by DPC or SIPR including one hybrid in-house/DPC model and, three to be delivered in-house. 28 of the projects are RAPID projects, with a further project subject to light touch oversight. The three major projects to be delivered in-house are all RAPID projects but are not eligible for delivery through either the DPC or SIPR competitive tendering models.

A further four projects (Colchester Water Recycling, Lowestoft Water Recycling, Sandown Water Recycling, Sittingbourne Water Recycling) do not meet the major project criteria but will be subject to RAPID oversight given potential environmental and water quality risks associated with the projects, and the influence of the development of new regulatory frameworks. Guidance on the light-touch approach is being developed but RAPID expects the projects to have regular high-level check in meetings to understand the progress of the project, and ensure risks are being identified and addressed.

In addition to these, Thames Tideway is being delivered under SIPR, United Utilities' Haweswater Aqueduct Resilience Programme (HARP) is being delivered under DPC, and Portsmouth Water's Havant Thicket reservoir is a subject to a 10-year price control.

## North West Transfer (NWT)

| Owners: United Utilities | Type: Transfer | Delivery model: DPC | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £353 million (2022-23 prices) | | Construction start date: 2027-30 | |

NWT enables a transfer of water from the North West of England to the South. The solution forms part of the wider Severn to Thames Transfer system composed of NWT, River Severn to River Thames Transfer and Severn Trent Sources. NWT is composed of a portfolio of individual groundwater and surface water source options to maintain appropriate additional water treatment works output capacity to offset water exported from Lake Vyrnwy and enabling works on the Vyrnwy aqueduct to maintain supply in the North West.

## Minworth

| Owners: Affinity Water /Severn Trent Water | Type: Water recycling | Delivery model: In-house | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £640 million (2022-23 prices) | | Construction start date: 2028-29 | |

Source of raw water flow augmentation to support the Grand Union Canal (GUC) Transfer and/or Severn Thames Transfer (STT) by diverting treated wastewater currently discharged into the River Tame and River Trent, with some additional treatment, then discharging into the River Avon and/or the Grand Union Canal system.

## Beckton Water Recycling

| Owners: Thames Water | Type: Water recycling | Delivery model: DPC | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £3,511 million (2022-23 prices) | | Construction start date: 2028-29 | |

The London Water Recycling Scheme aims to provide a reliable, sustainable supply of water to support river flows in London. The Becton Effluent Reuse Scheme proposes up to 300Ml/d of recycled water conveyed by tunnel to the River Lee diversion for flow augmentation and abstraction to the Lee Valley Reservoirs supporting North East London. The scheme is an alternative to the Teddington DRA.

## Teddington Direct River Abstraction (DRA)

| Owners: Thames Water | Type: Water recycling | Delivery model: In-house | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £989 million (2022-23 prices) | | Construction start date: 2028-29 | |

The London Water Recycling Scheme aims to provide a reliable, sustainable supply of water to support river flows in London. The Teddington DRA proposes the discharge of up to 100 Ml/d of recycled water into the River Thames at Teddington Weir replacing abstraction via the Thames Lea Tunnel (TLT) to support North East London.

## Grand Union Canal (GUC)

| | | | |
|---|---|---|---|
| Owners: Affinity Water/ Severn Trent Water/ Canal and River Trust | Type: Transfer | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £1,540 million (2022-23 prices) | | Construction start date: 2029 | |

Utilisation of the existing canal and a new pipeline to convey raw water from the Minworth solution in the Severn Trent Water supply area to areas of water deficit in Affinity Water's supply area.

## Hampshire Water Transfer and Water Recycling (HWTWR)

| | | | |
|---|---|---|---|
| Owners: Southern Water | Type: Transfer and water recycling | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £3,031 million (2022-23 prices) | | Construction start date: 2029 | |

HWTWR would take some of the treated wastewater from the Budds Farm WWTW in Havant as its source. This water would be purified at a new water recycling plant before being pumped to the Havant Thicket Reservoir. A new 40km pipeline would take water from the reservoir to Southern Water's Otterbourne water supply works to be treated and sent into supply.

## Cheddar 2 Source and Transfer

| | | | |
|---|---|---|---|
| Owners: Wessex Water/ South West Water | Type: Reservoir and transfer | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £839 million (2022-23 prices) | | Construction start date: 2029 | |

Construction of a second reservoir at Cheddar filled from Cheddar springs and the river Axe, under Bristol Water's existing licences. As an option to support Wessex Water for evaluation in its WRMP, water would then be treated at a new works before being transferred via a 55km pipeline to a strategic service reservoir in the east of Wessex Water's region.

## Fens Reservoir

| | | | |
|---|---|---|---|
| Owners: Anglian Water/ Cambridge Water | Type: Reservoir | Delivery model: SIPR | RAPID: Yes |
| Whole life totex: £4,071 million (2022-23 prices) | | Construction start date: 2029-30 | |

Proposed development of a 55Mm$^3$ reservoir with a useable volume of 50Mm$^3$ and associated water infrastructure for abstraction, treatment and supply. The proposed reservoir site is between Chatteris and March, near to Doddington, Wimblington and Manea.

## Aylesford re-use (Medway) and Ford re-use (Littlehampton) bundle

| Owners: Southern Water | Type: Water recycling | Delivery model: DPC | RAPID: Yes (light touch) |
|---|---|---|---|
| Whole life totex: £1,295 million (2022-23 prices) | | Construction start date: 2029-30 | |

Construction of a new water recycling plant to recycle some of the treated wastewater from the Aylesford WWTW, and associated pipelines to allow discharge into the River Medway. Construction of a new water recycling plant at Littlehampton's WWTW (Ford) and associated long distance pipelines to allow discharge into the River Rother.

## South East Strategic Resource Option (SESRO)

| Owners: Thames Water/ Affinity Water | Type: Reservoir | Delivery model: SIPR | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £7,523 million (2022-23 prices) | | Construction start date: 2029-30 | |

SESRO is a raw water storage option in the upper catchment of the River Thames. A site near Abingdon has been identified and six variants of reservoir size and configurations developed as options. The reservoir could be used by the customers of multiple water companies across the South East of England with SESRO linked to other RAPID solutions which will need to be considered in the final scheme design.

## West Yorkshire Water Treatment Works

| Owners: Yorkshire Water | Type: Water treatment works | Delivery model: DPC | RAPID: No |
|---|---|---|---|
| Whole life totex: £310 million (2022-23 prices) | | Construction start date: 2029-30 | |

Proposed new greenfield 75Ml/d water treatment works with 150Ml co-located treated water storage. Early stage with no firm location.

## Bacton Desalination

| Owners: Anglian Water | Type: Desalination | Delivery model: DPC | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £ 2,337 million (2022-23 prices) | | Construction start date: 2030 | |

Potential abstraction licence changes could affect all of the water sources for Norwich and Norfolk. Desalination plant could have the capacity to supply in excess of 25Ml/d of water.

## Mablethorpe

| Owners: Anglian Water | Type: Desalination | Delivery model: DPC | RAPID: Yes (proposed) |
|---|---|---|---|
| Whole life totex: £2,205 million (2022-23 prices) | | Construction start date: 2030 | |

Significant new demands for water emerging in the south Humber region. Desalination plant could have the capacity to supply in excess of 50Ml/d of water.

## Poole Water Recycling and Transfer

| | | | |
|---|---|---|---|
| Owners: Wessex Water/ South West Water | Type: Transfer and water recycling | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £306 million (2022-23 prices) | | Construction start date: 2030 | |

Diversion of final effluent from Wessex Water's Poole WWTW to the River Stour via a new pipeline, water recycling plant and wetland. The diverted final effluent will be treated at a new water recycling plant and discharged into a new wetland before entering the River Stour and re-abstracted at Longham Lakes alongside an existing intake to integrate with Bournemouth Water's existing supply system.

## North Suffolk Reservoir

| | | | |
|---|---|---|---|
| Owners: Northumbrian Water | Type: Reservoir | Delivery model: DPC | RAPID: Yes (proposed) |
| Whole life totex: £812 million (2022-23 prices) | | Construction start date: 2030-31 | |

New winter storage reservoir to be built. Intake from the River Waveney/River Hundred when there is no spare capacity at the Barsham WTW. Water is transferred from the reservoir when supplies are short at the Barsham WTW.

## Lower Thames to West London Reservoir (LT-WLR)

| | | | |
|---|---|---|---|
| Owners: Thames Water | Type: Transfer | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £1,729 million (2022-23 prices) | | Construction start date: 2030-31 | |

Conveyance of raw water extracted from a new abstraction point on the lower River Thames at Surbiton to the Queen Mary Reservoir.

## Severn to Thames Transfer (STT)

| | | | |
|---|---|---|---|
| Owners: Thames Water/ Severn Trent Water / United Utilities | Type: Transfer | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £4,310 million (2022-23 prices) | | Construction start date: 2030-35 | |

STT enables a transfer of water from the River Severn to the River Thames. The solution forms part of the wider STT system composed of STT, Severn Trent Sources and North West Transfer. STT is composed of an interconnector to transfer water from the River Severn to the River Thames, and the River Vyrnwy bypass pipeline connecting flows from Lake Vyrnwy at Oswestry to the River Severn.

## South Yorkshire Sources

| | | | |
|---|---|---|---|
| Owners: Severn Trent Water/ Yorkshire Water | Type: Source and transfer | Delivery model: DPC | RAPID: Yes (proposed) |
| Whole life totex: £419 million (2022-23 prices) | | Construction start date: 2031 | |

Project to increase the supply of water to South Yorkshire. Four candidate solutions proposed: (i) River Ouse treated water to South Yorkshire; (ii) Aire and Calder new river sources; (iii) Doncaster Wellfield sources and managed aquifer recharge; and (iv) River Don sources.

## Lincolnshire Reservoir

| | | | |
|---|---|---|---|
| Owners: Anglian Water | Type: Reservoir | Delivery model: SIPR | RAPID: Yes |
| Whole life totex: £4,158 million (2022-23 prices) | | Construction start date: 2031-32 | |

Proposed development of a 55Mm$^3$ reservoir with a useable volume of 50Mm$^3$ and associated water infrastructure for abstraction, treatment and supply. The proposed reservoir site is south-east of Sleaford, about halfway between Grantham and Boston.

## Broad Oak Reservoir

| | | | |
|---|---|---|---|
| Owners: South East Water | Type: Reservoir | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £1,092 million (2022-23 prices) | | Construction start date: 2031-35 | |

Proposed development of a reservoir located to the north of Canterbury with a capacity of 5,126Ml of water capable of supplying 22Ml/d. Raw water would be taken from the Great Stour near Monkton and then held at the reservoir before being treated at the on-site water treatment works.

## Kielder Transfer SRO

| | | | |
|---|---|---|---|
| Owners: Yorkshire Water/ Northumbrian Water/ United Utilities | Type: Transfer | Delivery model: In-house /DPC | RAPID: Yes |
| Whole life totex: £1,146 million (2022-23 prices) | | Construction start date: 2032 | |

Comprises a large (partially treated) water transfer pipeline to a WTW near York, with further treatment and onward distribution through Yorkshire Water's conjunctive use grid.

## West Midlands Raw Water Storage

| Owners: Severn Trent Water | Type: Reservoir | Delivery model: DPC | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £491 million (2022-23 prices) | | Construction start date: 2032-40 | |

Conversion of a third-party owned quarry into a pumped raw water storage reservoir. The scheme will enable raw water abstraction of 100 Ml/d at times of high flow in the River Severn that can be stored until such times as there are low flows when a return release of up to 50Ml/d can be made. This will be used to support existing abstractions downstream.

## Thames to Southern Transfer (T2ST)

| Owners: Southern Water | Type: Treatment and transfer | Delivery model: DPC | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £2,188 million (2022-23 prices) | | Construction start date: 2033 | |

T2ST will convey potable water from Thames Water's Swindon and Oxfordshire water resource zone to Southern Water's Hampshire area, with an earliest commissioning date of 2040. The solution is dependent on the prior development and commissioning of an additional water resource option – the River Severn to River Thames Transfer (STT) and/or the South East Strategic Reservoir Option (SESRO).

## Severn Trent Sources (STS)

| Owners: Severn Trent Water | Type: Treatment and transfer | Delivery model: In-house | RAPID: Yes |
|---|---|---|---|
| Whole life totex: £124 million (capex) (2022-23 prices) | | Construction start date: 2034 | |

Discharge of treated final effluent from Netheridge wastewater treatment works at a location near to Deerhurst, currently identified as Haw Bridge to provide raw water support to the River Severn to River Thames Transfer (STT). STT will abstract the same volume of water and transfer it to the River Thames. The solution forms part of the wider River Severn to River Thames Transfer system composed of STS, STT and North West Transfer.

## Rudyard Reservoir Augmentation

| Owners: Severn Trent Water/ Canal and River Trust | Type: Reservoir | Delivery model: DPC | RAPID: Yes (proposed) |
|---|---|---|---|
| Whole life totex: £738 million (2022-23 prices) | | Construction start date: 2035 | |

Provision of an additional source (6Ml/d) of raw water to increase the sustainable output of Tittesworth WTW through periods of drought.

## Mendips Quarry

| | | | |
|---|---|---|---|
| Owners: Wessex Water/ South West Water | Type: Reservoir | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £1,728 million (2022-23 prices) | | Construction start date: 2035 | |

Repurposing Torr Quarry to a 28.5Mm3 reservoir fed by a combination of groundwater and surface water from an enhanced River Avon abstraction licence. Two treatment and conveyance proposals: (i) potable water transfer to a Wessex Water surface reservoir near Warminster; and (ii) raw water transfer to the River Stour in Dorset for subsequent downstream abstraction by Bournemouth Water.

## Peterborough to Grafham (P2G)

| | | | |
|---|---|---|---|
| Owners: Anglian Water | Type: Transfer | Delivery model: DPC | RAPID: Yes |
| Whole life totex: £389 million (2022-23 prices) | | Construction start date: 2035-40 | |

Decoupling of treated water transfer scheme from associated infrastructure of the Lincolnshire reservoir. New 45km, 100Ml/d transfer between Peterborough and Grafham.

## New Arlington

| | | | |
|---|---|---|---|
| Owners: South East Water | Type: Reservoir | Delivery model: DPC | RAPID: Yes (proposed) |
| Whole life totex: £268 million (2022-23 prices) | | Construction start date: 2035-40 | |

New reservoir next to the existing Arlington reservoir in East Sussex to yield an extra 18Ml/d.

## Nottinghamshire Mine Water Treatment

| | | | |
|---|---|---|---|
| Owners: Severn Trent Water/ Yorkshire Water/ Coal Authority | Type: Water treatment and transfer | Delivery model: DPC | RAPID: Yes (proposed) |
| Whole life totex: £755 million (2022-23 prices) | | Construction start date: 2038 | |

Exploring the potential to treat mine water to provide a new source of treated water for the East Midlands / South Yorkshire area.

## Thames to Affinity Transfer (T2AT)

| | | | |
|---|---|---|---|
| Owners: Affinity Water | Type: Transfer | Delivery model: DPC | RAPID: Yes (proposed) |
| Whole life totex: £387 million (2022-23 prices) | | Construction start date: 2040 | |

Water transfer by underground pipeline from Thames Water's Lower Thames Reservoir system to Affinity Water, supported by new water resource from the South East Strategic Reservoir Option (SESRO).

**Ofwat (The Water Services Regulation Authority) is a non-ministerial government department. We regulate the water sector in England and Wales.**

Ofwat
Centre City Tower
7 Hill Street
Birmingham B5 4UA
Phone: 0121 644 7500



This document is also available from our website at www.ofwat.gov.uk.

Any enquiries regarding this publication should be sent to mailbox@ofwat.gov.uk.

OGL