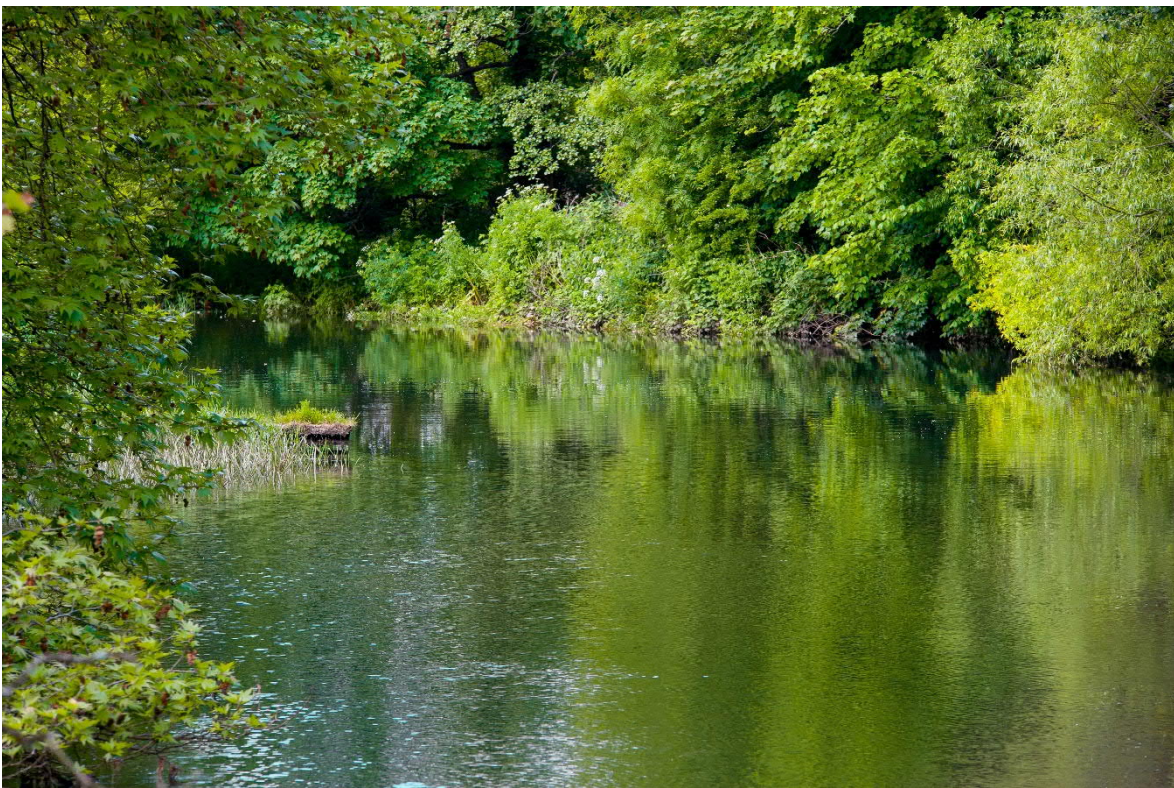


# Strategic Regional Water Resource Solutions: Annex F Project Delivery Plan Report

## Standard Gate Two Submission for Thames to Southern Transfer (T2ST)

Date: November 2022



## Notice

### Position Statement

- *This document has been produced as the part of the process set out by RAPID for the development of the Strategic Resource Options (SROs). This is a regulatory gated process allowing there to be control and appropriate scrutiny on the activities that are undertaken by the water companies to investigate and develop efficient solutions on behalf of customers to meet future drought resilience challenges.*
- *This report forms part of suite of documents that make up the 'Gate 2 submission.' That submission details all the work undertaken by Thames Water and Southern Water in the ongoing development of the proposed SROs. The intention of this stage is to provide RAPID with an update on the concept design, feasibility, cost estimates and programme for the schemes, allowing decisions to be made on their progress and future funding requirements.*
- *Should a scheme be selected and confirmed in the Thames Water and Southern Water final Water Resources Management Plans, in most cases it would need to enter a separate process to gain permission to build and run the final solution. That could be through either the Town and Country Planning Act 1990 or the Planning Act 2008 development consent order process. Both options require the designs to be fully appraised, and in most cases an environmental statement to be produced. Where required that statement sets out the likely environmental impacts and what mitigation is required.*
- *Community and stakeholder engagement is crucial to the development of the SROs. Some 'high level' activity has been undertaken to date. Much more detailed community engagement and formal consultation is required on all the schemes at the appropriate point. Before applying for permission Thames Water and Southern Water will need to demonstrate that they have presented information about the proposals to the community, gathered feedback and considered the views of stakeholders. We will have regard to that feedback and, where possible, make changes to the designs as a result.*
- *The SROs are at a very early stage of development, despite some options having been considered for several years. The details set out in the Gate 2 documents are still at a formative stage and consideration should be given to that when reviewing the proposals. They are for the purposes of allocating further funding not seeking permission.*

### Disclaimer

*This document has been written in line with the requirements of the RAPID Gate 2 Guidance and to comply with the regulatory process pursuant to Thames Water's and Southern Water's statutory duties. The information presented relates to material or data which is still in the course of completion. Should the solution presented in this document be taken forward, Thames Water and Southern Water will be subject to the statutory duties pursuant to the necessary consenting process, including environmental assessment and consultation as required. This document should be read with those duties in mind.*

Thames to Southern Transfer  
Project Delivery Plan Report  
T2ST-G2-REP-14 (Annex F)

November 2022



## THAMES TO SOUTHERN TRANSFER (T2ST)

### Annex F Project Delivery Plan Report

Ref: T2ST-G2-REP-14 (Annex F)

November 2022

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# 1. Introduction

## 1.1. Context and purpose of this document

This document is a separate supporting document to the RAPID Gate 2 report for the Thames to Southern Transfer (T2ST) SRO submission.

The purpose of this document is to set out the proposed programme for overall delivery of this SRO, to highlight the key risks and proposed mitigations for delivery of the project and the proposed work breakdown structure (WBS) and activities beyond Gate 2 for the proposed Gate 3 Checkpoint 1 planned for March 2024.

## 1.2. Structure and content of this document

The structure of this report is as follows:

- Section 2 sets out a proposed programme for the overall delivery of the T2ST SRO including dependencies with other schemes;
- Section 3 summarises the proposed plan beyond this Gate 2 submission, including the WBS and planned activities for the proposed Gate 3 Checkpoint 1 in March 2024;
- Section 4 provides a summary of the key risks and proposed mitigations for delivery of the SRO.

This report is summarised in Section 7 (Programme and Planning) of the RAPID Gate 2 Report.

## 2. Overall Programme for SRO Delivery

### 2.1. Background to preferred options at Gate 2

Following completion of an updated options appraisal (see supporting Annex A1), route and site selection process (see supporting Annex A2) and concept design stage (see supporting Annex A3), two preferred T2ST options (B and C) have been developed at Gate 2 as summarised in Table 2-1 and Figure 2-1. The preferred options are both potable water transfers with similar treatment and transfer infrastructure requirements. Both options require a new source of water which is assumed to be the South East Strategic Reservoir Option (SESRO) and/or the Severn Thames Transfer (STT).

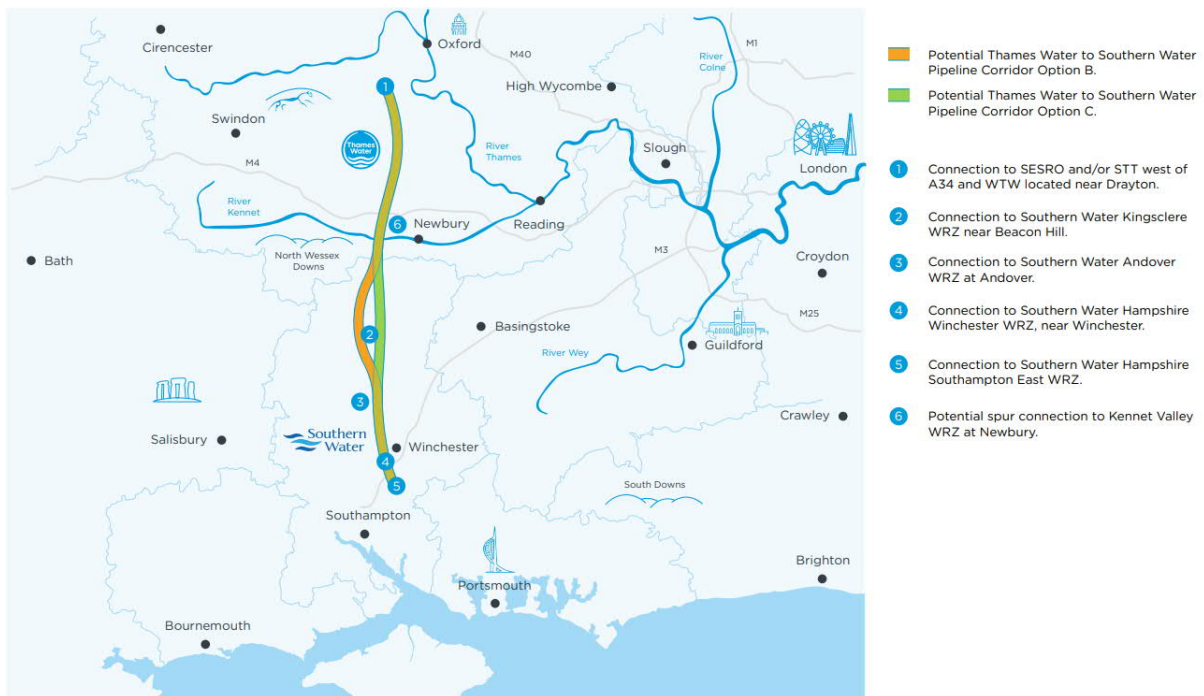
The preferred options have been assessed at a capacity of 50MI/d, 80MI/d and 120MI/d. The Water Resources South East (WRSE) draft Regional Plan identifies a maximum T2ST transfer requirement of 120MI/d and earliest commissioning date of 2040. This Project Delivery Plan is therefore based on this scheme being required in 2040.

*Table 2-1 T2ST Preferred Options at Gate 2*

Option	Description
B	Potable water transfer from land west of the A34 near Drayton to the Southern Water supply network in Hampshire. Route west of Newbury, remaining west of the A34. Water source from SESRO and/or STT.
C	Potable water transfer from land west of the A34 near Drayton to the Southern Water supply network in Hampshire. Route west of Newbury, crossing east of the A34. Water source from SESRO and/or STT.

The construction programme for these different options will vary slightly, although the overarching programme for delivery of both options are broadly similar with the same proposed procurement route and similar planning strategies. The programme provided in this section is applicable to both of the preferred options.

Figure 2-1 Schematic of preferred T2ST Options B and C



## 2.2. Influencing factors

The overall delivery of T2ST has interdependencies with a multitude of factors including:

- Regional water resource modelling, specifically making the case for the transfer including the size and timing of the need;
- The delivery of other schemes, including other SROs as well as regional connections, particularly the required sources of water;
- Government policy, including Defra’s future publication of a National Policy Statement on Water Resources Infrastructure;
- Statutory water company water resource management plans (WRMPs);
- The RAPID gated process;
- The overall procurement for delivery of the scheme;
- Ofwat’s standard process and control points for Direct Procurement for Customers (DPC), if DPC is the preferred procurement strategy.

The above influencing factors have their own parallel programmes and have each been considered to develop the overall scheme delivery plan set out in this section. Further explanation of these potential influences is summarised below in Table 2-2.

Table 2-2 Influences considered for T2ST SRO project

Influencing programme	Potential impacts on T2ST SRO
Availability of sources	The T2ST scheme requires a new source of water into Thames Water's western water resource zones. This new source of water is currently envisaged to be either the Severn Thames Transfer (STT) or South East Strategic Reservoir Option (SESRO) projects. At present, 2033 is the earliest potential date for STT to be operational and the earliest operational date for SESRO is 2038. The earliest potential operating date is therefore the earliest date of the source of water.
WRSE Regional Water Resources Plan	<p>The regional water resources plan is intended to identify a region-wide long-term water resource resilience strategy. The schemes within the preferred regional plan(s) will cascade down to individual companies, enabling incorporation into the Companies' WRMPs in a consistent and aligned manner. The regional plan will therefore inform the statutory WRMP24, which in turn is expected to form the Statement of Need for the SRO during subsequent scheme promotion. The regional plan therefore needs to inform the preferred solution(s) within the SRO project.</p> <p>The Water Resources South East (WRSE) draft Regional Plan identifies a maximum T2ST transfer requirement of 120MI/d and earliest commissioning date of 2040.</p>
Thames Water's and Southern Water's Final WRMP24s	Although currently unpublished, the draft National Policy Statement on Water Resource Infrastructure confirms that for Nationally Significant Infrastructure Projects (NSIPs) the 'need' case would be provided by the published WRMP24. Therefore, in programming terms, we are assuming that a published WRMP24 is required before the formal promotion of the scheme under a DCO – this is represented as the start of the formal consultation process for the DCO. At worst case, the timing of this is estimated to be by spring 2025, at best case in autumn 2023. This influences the longer-term programme for the RAPID gated SRO governance – particularly regarding the status of the scheme at Gate 3 – and for the promotion of the scheme via DCO.
RAPID Gated process for SROs	The SRO follows a prescriptive path through the RAPID gated governance process and this influences the project development and programme, as the requirements of each gateway are pre-determined by RAPID.
Development Consent Order (DCO) process	The planning strategy (Section 7 of the Gate 2 RAPID Report) has confirmed that for the preferred potable water transfer options, the preferred planning consent route would be an application to the Secretary of State for a direction under Section 35 of the Planning Act 2008 to make T2ST an NSIP. This direction would then require that an application for Development Consent is made for T2ST, and not a planning application. Given the nature of the interaction discussed previously with WRMP24, the exact timing of when different aspects of the DCO process can proceed may well be driven by the timetable for the final approval and publication of WRMP24. At present, our programme assumes that a published WRMP24 is required prior to the commencement of formal DCO consultation, although pre-consultation studies and engagement would be commenced during earlier stages (post Gate 2).
Defra NPS on WR Infrastructure	The draft National Policy Statement on Water Resource Infrastructure could influence the planning programme for T2ST, specifically as the preferred options are potable water transfer options. The timing of the publication of this NPS is currently uncertain. For the purposes of future scheme programming, we currently assume that the NPS will be published and adopted ahead of the publication of the Final WRMP24, although clearly



Influencing programme	Potential impacts on T2ST SRO
	this is a risk, which would then complicate the scope of the future promotion of the scheme under a DCO.
Ofwat regulated DPC process	Due to the scale and complexity of the T2ST scheme, standard procurement approaches may not be appropriate. As documented in Section 7 of the RAPID Gate 2 Report, the current assumed procurement approach would be through Direct Procurement for Customers (DPC) involving the procurement of the third-party entity to undertake the detailed design, construction and operation of the scheme. This approach follows a very standardised approach, as set out by Ofwat, which will need to align with both the RAPID gateways and with the steps to be followed during the DCO application.

### 2.3. Scheme delivery programme

We have developed a project delivery plan for the preferred T2ST options from Gate 2 through to commissioning. This is summarised in Figure 2-3. This plan conceptualises the project into a series of linked phases, with key objectives set for each phase, as set out in Table 2-3 below. Phase 1 was completed in July 2021 and Phase 2 is expected to be completed in November 2022 with the submission of this Gate 2 document suite to RAPID.

Table 2-3: T2ST generic project phasing

Phase	Name	Outcome required
1	Gate 1	<ul style="list-style-type: none"> <li>Regulatory Alliance for Progressing Infrastructure Development (RAPID) Gate 1 submission</li> </ul>
2	Gate 2	<ul style="list-style-type: none"> <li>RAPID Gate 2 submission</li> </ul>
3	Gate 3	<ul style="list-style-type: none"> <li>RAPID Gate 3 submission</li> <li>Planning Inspectorate (PINS) provides Environmental Impact Assessment (EIA) Scoping Opinion</li> <li>Undertake initial non-statutory consultation(s) on the Development Consent Order (DCO) project</li> <li>Ofwat Control Point C (for Direct Procurement for Customers (DPC)) approved</li> </ul>
4	Gate 4	<ul style="list-style-type: none"> <li>RAPID Gate 4 submission</li> <li>Complete Preliminary Environmental Information Report (PEIR)</li> <li>Complete Statutory Public Consultation on the DCO project</li> <li>Ofwat Control Points D and E (for DPC) approved</li> <li>Partner company approval to submit DCO application</li> </ul>
5	DCO examination and approval	<ul style="list-style-type: none"> <li>DCO Examination</li> <li>Secretary of State's award of DCO</li> </ul>
6	Contract award	<ul style="list-style-type: none"> <li>Ofwat Control Point F (for DPC) approved</li> <li>Competitively Appointed Provider (CAP) awarded contract for delivery</li> <li>Land acquisition contracts completed</li> </ul>
7	Construction	<ul style="list-style-type: none"> <li>Scheme commissioned and operational</li> </ul>

An outline scheme delivery programme has been developed considering the influencing factors discussed in the previous section, engineering judgement and experience of developing other schemes with similar components. However, the overall delivery of T2ST is primarily dependent

on when the transfer is required to be operational from a regional planning perspective and when the source of water for the transfer will be available.

An overview programme for the future planning, development and promotion of the SRO scheme has been developed based on the assumption that the T2ST scheme is not required until 2040 at the earliest, as per the WRSE draft Regional Plan.

This programme is subject to change and confirmation as the need for the scheme and preferred procurement process are further developed.

Overall, a programme of approximately 14 years, including 2 years programme float, is required between the start of Gate 3 activities and the commissioning of the scheme.

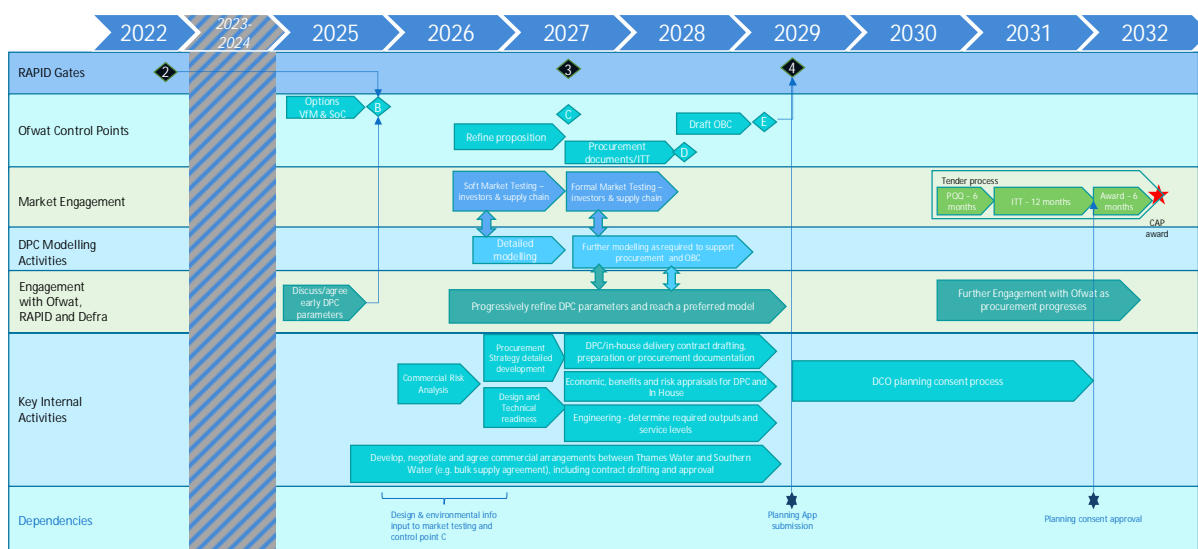
We have considered phasing of the scheme and will look at this in more detail when confirmation of the timing and operation of the T2ST is scheme is better understood. This could include a water treatment works with less than 120Ml/d capacity that could be adapted and increased in the future.

## 2.4. Summary of procurement programme

Initial considerations of the T2ST procurement and commercial strategy and next steps have been provided as part of the Gate 2 submission, Procurement and Commercial Strategy Report, (Annex E).

A summary of the key timelines is provided below in Figure 2-2.

Figure 2-2 Summary procurement plan



## 2.5. Summary of Planning Consent Routes

Initial considerations of the T2ST planning application route to consent, risks, mitigation and next steps have been provided as part of the Gate 2 submission, Planning and Consent Strategy Report (Annex G).

Given that the preferred T2ST options are potable transfers (Option B and C) it is considered that the preferred planning consent route for T2ST would be an application to the Secretary of State for a direction under Section 35 of the Planning Act 2008 to make T2ST an NSIP. This

direction would then require that an application for Development Consent is made for T2ST and not a planning application.

As the draft Regional Plan is currently showing an earliest need for the T2ST scheme in 2040, it is unlikely that any DCO application would be submitted until around 2029.

## 2.6. T2ST Construction

A preliminary assessment of construction methodology and programme for T2ST has been undertaken to inform the likely construction programme. This has included the following:

- Review of site access requirements for the pipeline, major crossings and above ground infrastructure sites, including the water treatment works, pumping stations and break pressure tanks.
- Review of working areas including pipeline easement, construction compounds and storage areas along the pipeline routes.
- Development of a preliminary construction programme using Primavera P6 software.
- A review of potential packages of work.

Quantities for permanent and temporary site access and temporary working areas were provided to the cost estimating team as part of the Option B and C pricing work, for the 50, 80 and 120MI/d flow capacities. An average pipeline easement width of 20m has been assumed for pipe diameters up to 800mm diameter and a 25m average working width for pipe diameters 800-1100mm diameter. Subject to future ground investigation during detailed design it may be possible for some limited reduction in working width, but these values are considered appropriate for this stage of design and cost estimating.

The draft construction programme is based on the largest T2ST capacity (120MI/d) and assumes that the works within each section of pipeline cannot start until the construction compounds are completed. Following allowance for setting up the pipeline easement, access agreements and ecological works, it is assumed that the pipeline works, major crossings, pumping station sites and break pressure tanks are constructed in parallel to minimise the construction duration. Allowance has also been made for open cut crossings of minor roads and associated traffic diversions. The programme has been developed so that construction of the tunnelled sections beneath major crossings are coordinated with construction and testing of the pipeline works.

At this stage of design, it has been assumed that the pipeline would be tested in section lengths of approximately 2km, with water provided from the local distribution network through temporary supply connections. This will require detailed consultation with Thames Water and Southern water as the scheme developed to agree temporary supply connections depending on the availability of treated water local to the pipeline alignment. Each 2km test section would have a volume of around 1-1.5MI with multiple fills required for hydrostatic testing and commissioning of the pipeline.

The programme analysis has shown that the pipeline construction is driving the overall programme. The construction programme for the water treatment works is estimated as four years for construction and commissioning. With allowance for integration and commissioning of the whole scheme, the total construction programme for T2ST from the start of construction works to final commissioning is estimated as 5 years. A one-year mobilisation period is also assumed prior to construction following contract award.

## 2.7. T2ST scheme delivery schedule

The proposed scheme delivery plan is based on the need for the scheme in 2040. The outline scheme delivery plan for this delivery schedule is shown in Figure 2-3.

However, providing a new source of water was available in advance, it would be possible to complete the T2ST scheme as early as 2036 if the project was to start the development phase immediately following this Gate 2 submission. An alternative programme showing this earlier potential operating date is shown in Figure 2-4. This demonstrates that the project could be 'construction ready' (i.e. award of a CAP) in AMP8, if required.

Figure 2-3 Overview of T2ST project delivery, assuming operation required in 2040. Note: this programme is based on the current need for the scheme in 2040, as per the draft WRSE Regional Plan. If this need changes, the programme would be adapted accordingly. The timing of Gate 3 Checkpoint 2 is driven by the final WRMP24, early outputs from the draft WRMP29, the next WRSE Regional Plan, the DCO consent of the T2ST source, programme delivery risk and any further information that becomes available post-Gate 2

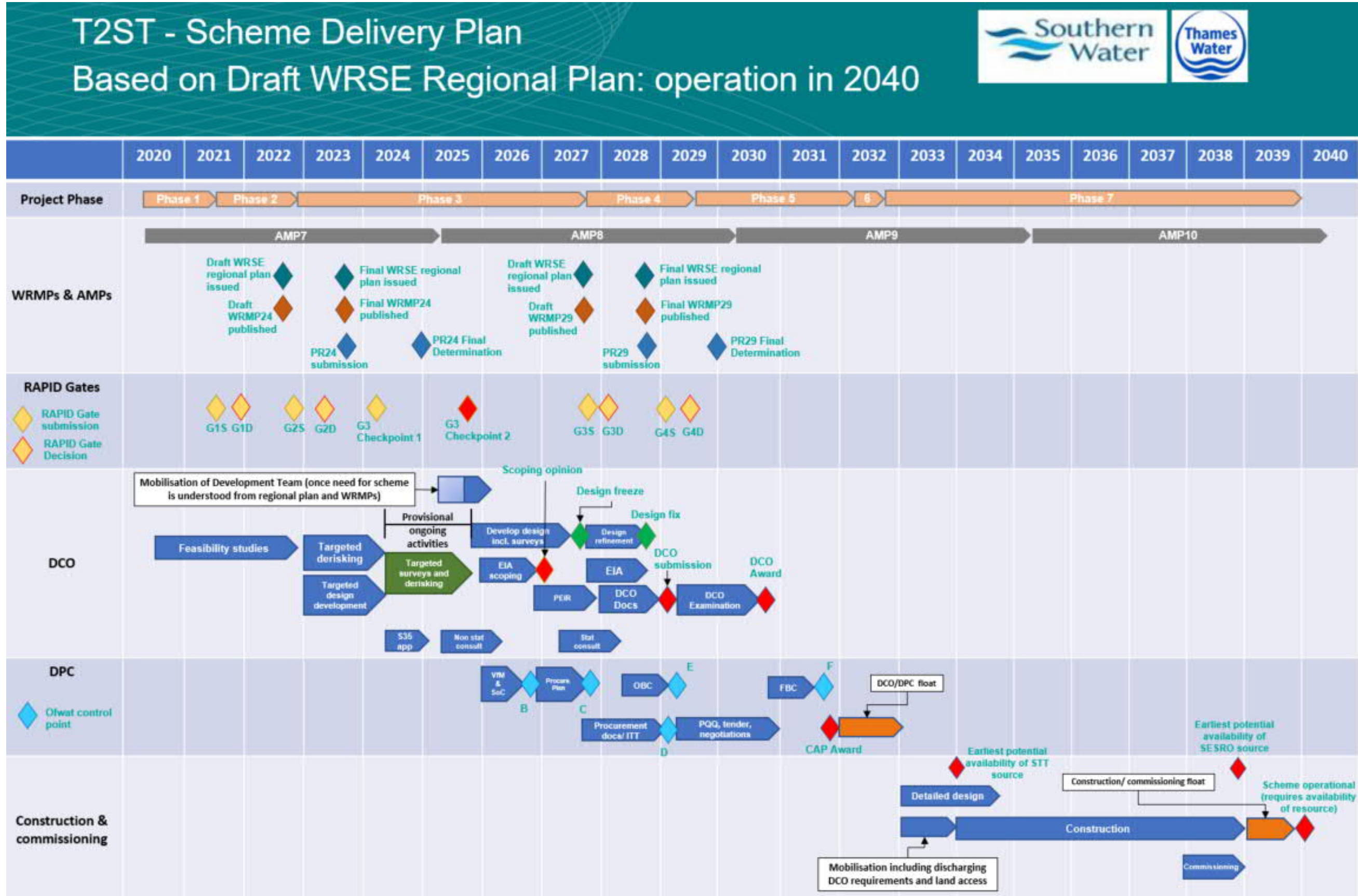
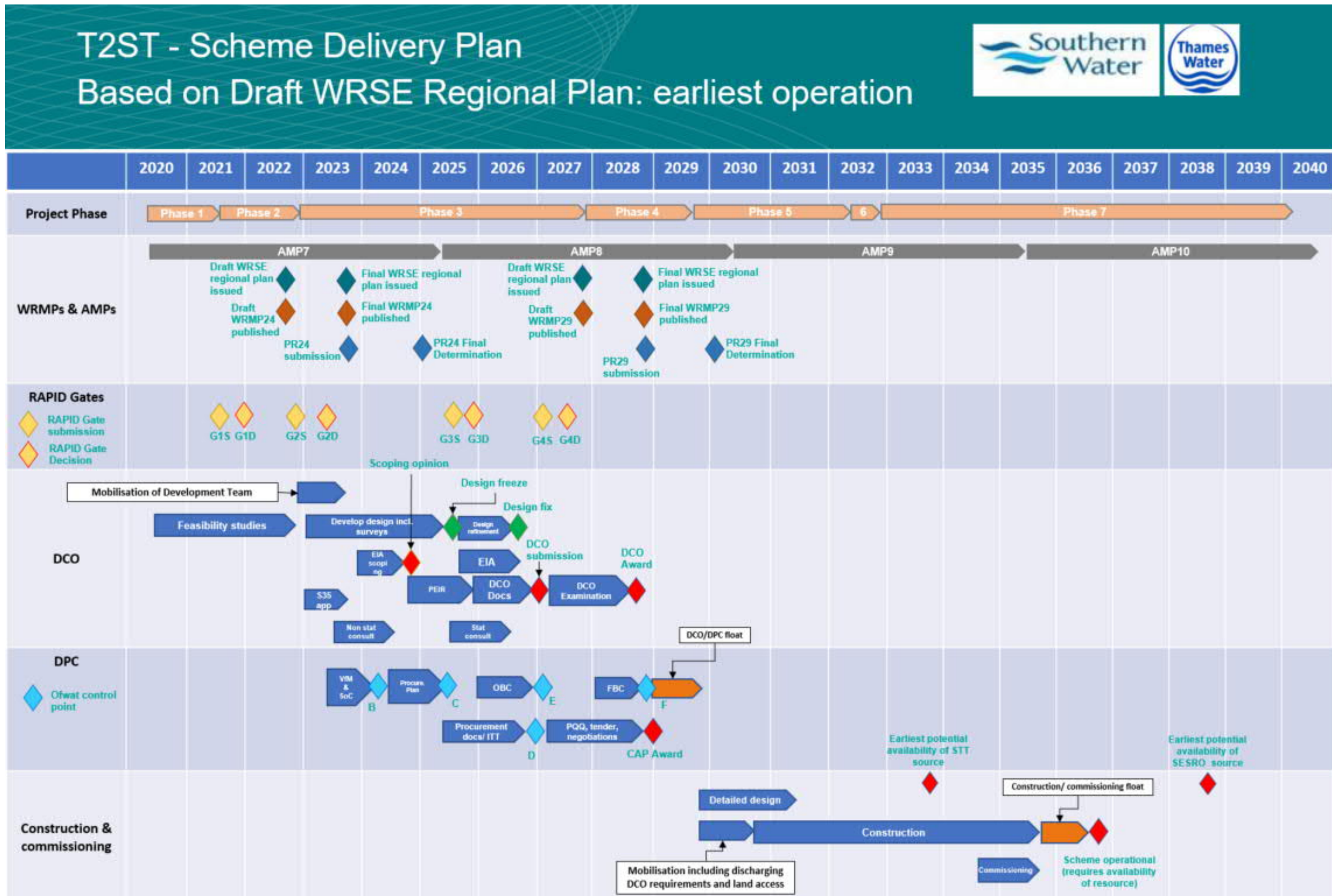


Figure 2-4

Outline scheme delivery plan for development of T2ST – earliest potential operation



## 2.8. Key programme risks

In line with the recommendations of the Treasury Green Book (supplementary guidance, Optimism Bias<sup>1</sup>), the schedule for a project of the scale and type of T2ST should be adjusted to account for unknown risks in the delivery of future activities. This is not done at an activity level, but assigned to the higher-level programme, to account for unknown risks that have yet to be defined by the project. The recommended allowance for Standard Civil Engineering activities is in the range of 1-20%. To account for such unknown risks at this stage, the schedule could therefore be adjusted to account for such optimism bias using:

- Requirement for an additional year of baseline data collection for the EIA, due to the paucity of data during a previous season or the identification of a particularly sensitive receptor.
- A 20% extension to the duration of time required to achieve a satisfactory DCO submission (i.e. acceptable to PINS), driven by factors such as completeness of environmental baseline or assessment, regulator agreement or the suitability of the pre-application consultation, all of which have the potential to delay submission.
- After Examination in Public, the potential for a 6 month delay in the granting of a DCO by the Secretary of State, potentially driven by the volume of NSIPs going through coincident consenting resulting in backlogs.
- A 20% extension to the overall construction and commissioning programme(s), driven by factors such as supply chain issues, potential delays on site, unsuitable weather conditions for trench excavation, unforeseen ground conditions or commissioning challenges with such a large pipeline (e.g. a lack of availability of water for commissioning).
- A 20% delay in the programme due to stakeholder and regulatory challenges and concerns.

With the T2ST scheme not being required until 2040 at the earliest, the project is not currently on a critical path. Therefore, there is the opportunity to decide on a suitable time to significantly ramp up the project to allow some time for these risks. This has been accounted for in the scheme delivery plans in Figure 2-3 and Figure 2-4, with some of the above risks that carry a higher likelihood (notably the construction and commissioning risk and overall DCO programme risk) being allowed for through contingencies totalling 2 years added to the programme as float. However, there remains the opportunity to start the development phase earlier than currently shown dependent on a more detailed assessment of the delivery programme and the programme risks.

A more detailed appraisal of programme risks and proposed mitigation is provided in Section 4 below. We will continue to actively monitor progress against the key risks and proposed mitigation, in order to try to minimise the risk of these programme delays from manifesting.

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<sup>1</sup> HM Treasury, 2013, "Green Book supplementary guidance: optimism bias", [Green Book supplementary guidance: optimism bias - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

## 3. Plan beyond Gate 2

This section of the report sets out the proposed activities, programme and associated work breakdown structure to for the proposed work beyond Gate 2.

### 3.1. Introduction

There are several key outcomes that we would propose to achieve by Gate 3. These are intended to ensure key initial decision points by the principal regulators and consenting authorities have been passed. This ensures that the scheme is more clearly defined, and there is a greater level of confidence in the residual issues to be resolved during subsequent stages. These initial decision points include:

- A Scoping Opinion under the Environmental Impact Assessment Regulations, provided by the Planning Inspectorate. This will define the scope, methodology and timeline for the subsequent Environmental Impact Assessment.
- The initial non-statutory engagement(s) will have been completed, in order to confirm the balance of public opinion on the scheme. This will help inform the residual design and environmental mitigation issues that require further consideration and development.
- Ofwat will have approved Control Points B and C, under their standard DPC approval process. This will ensure that the initial Value for Money assessment, Procurement Plan and the Statement of Case have been approved.

The current timing of the need for the option, as defined by the draft WRSE Regional Plan, means that a deferral period is required for the overall scheme delivery programme. Based on this current need, a Gate 3 meeting these outcomes would be required in 2027. While the scheme could be 'construction ready' (i.e. award of a CAP) in AMP8, as shown by Figure 2-4, the proposed deferral prevents inefficient or abortive work from being done until the consenting process for the new source of water has been progressed, whether this is from SESRO or STT.

T2ST needs to deliver water by 2040, meaning that the scheme only needs to be consented by approximately 2030 and mobilised to site by 2033. The consenting does need to be linked to the consenting process for the ultimate source, either SESRO or STT, which is not expected to be resolved until 2028. While there is insufficient float in the overall scheme delivery programme to fully defer the development of the project until 2028, the EIA and DCO consenting programme for this scheme will need to be kept under review to account for the consenting of a new source of water in advance of consenting of T2ST.

Therefore, to ensure an efficient delivery and a robust submission, we are proposing to defer the development of T2ST by 2 – 3 years whilst the consent for the source of water progresses. We are proposing two Checkpoints to help manage this deferral:

- Gate 3 Checkpoint 1, which would be after the final WRMPs are published and a period of targeted design development, targeted surveys de-risking studies. This is currently expected to be around March 2024. The purpose of this checkpoint is to re-evaluate the timing and need for the scheme based on final WRMPs and to agree a way forward with RAPID that allows for continued interaction with other projects while ensuring efficiency of spend.
- Gate 3 Checkpoint 2, which would signify the ramp-up of the project informed by three key drivers – the agreement of WRMP24 (confirming the need and timing of the



scheme), development of the approval of the DCO or other consent for the new source of water in the upper Thames catchment and a review of the project delivery programme for the T2ST solution, to confirm when work needs to re-start. This is currently expected to be in early 2026 and include for a period of continued design development, targeted surveys and derisking activities. However, the scope and timing of this Gate 3 Checkpoint 2 will be agreed with RAPID at Gate 3 Checkpoint 1.

As we are still in the relatively early stages of concept design development and there are complex interactions with multiple other projects, we propose that focussed work continues beyond Gate 2 to the Gate 3 Checkpoint 1 in March 2024 and work is not deferred completely.

It is currently proposed that some targeted derisking and targeted surveys will continue following the Gate 3 Checkpoint 1 in March 2024. However, the scope and extent of this work will be defined and agreed with RAPID at the Checkpoint.

As Southern Water customers are the main water resource beneficiaries of the T2ST scheme, we recommend that Southern Water takes the lead role in T2ST promotion post Gate 2. We also recommend that Southern Water continues to consult with Thames Water (and other relevant stakeholders) throughout the ongoing development of the scheme, particularly alongside the development of SESRO and STT as potential sources for T2ST. No further changes to the solution owners are proposed.

### 3.2. Gate 3 Checkpoint 1 Outcomes

The proposed outcomes for the Gate 3 Checkpoint 1 are:

- Greater certainty on the route alignment and locations for above ground infrastructure for the proposed transfer focussed on potential corridor pinch points. This will be achieved through further desk-based assessment, identification of landowners and some focussed site surveys
- We will have made initial contact and had discussions with critical landowners affected by the scheme, particularly those at the permanent sites of above ground infrastructure and at some potential pinch points in the route corridor, and (if possible) sites and routes will be safeguarded within local plans
- We have further developed the interfaces with other schemes, such as either STT or SESRO as the source and Southern Water's Water for Life Hampshire (WfLH) schemes, to ensure the feasibility of any connections are confirmed. This will include further development of the operational philosophy of the scheme, abstraction license implications and a clear planning and consenting strategy interaction with other schemes
- We will have fully assessed opportunities to maximise the potential from existing or other planned schemes to ensure we develop the most efficient and lowest impact T2ST scheme. This will include opportunities such as combining the water treatment works at the abstraction location with other schemes and using existing pipeline crossings from other WfLH schemes.

We propose that the Gate 3 Checkpoint 1 submission is a relatively short document that refers only to significant updates and changes from this Gate 2 submission and will not include the wider supporting documentation submitted at Gate 2.

To deliver these proposed outcomes, we are proposing work across a number of technical workstreams. These activities will deliver the data collection, analysis and reporting required to enable the proposed objectives at the Gate 3 Checkpoint 1.

An outline of the proposed work packages is shown in Table 3-1.

*Table 3-1: T2ST proposed work packages for Gate 3 Checkpoint 1*

Workstream	Key activities
Environmental assessment	Ongoing environmental appraisal of options and alternatives to inform non-statutory consultations and development of initial preferred schemes. This will include focussed environmental screening assessments, archaeology assessments and AONB landscape and habitats assessments as well as further carbon assessment and mitigation.
Survey and monitoring	Commence initial environmental and engineering baseline data collection and surveys as required to inform an initial preferred scheme. This will include targeted environmental baseline surveys to understand critical issues in more detail.
Engineering design	Develop feasibility-level design for the interaction with other schemes, specifically SESRO, STT and the WfLH schemes. Further design refinement to reflect survey data collection and stakeholder feedback at consultation. Further assessment of key pipeline crossings. Develop more detailed construction strategy to de-risk project feasibility and costs.
Water resource assessment	Align scheme need, timing and scale to revised draft WRMP24 (or final, if available). Further water resources modelling.
Commercial and procurement strategy	Further assessment of the proposed commercial and procurement strategy, including learning from the development of other Southern Water schemes being developed.
Stakeholder engagement	Further public engagement on WRSE and WRMP24 strategic water resource plans. Ongoing technical engagement with regulators; engagement with Local Planning Authorities, potential engagement with some key landowners.
Planning and land	Initial liaison and negotiation with affected landowners, particularly for permanent sites and potential corridor pinch points or high-risk areas. Initial review of land access for surveys.
Legal support	Ad hoc support as required on legal issues.
Project management and governance	Day-to-day management and coordination of all tasks and activities to ensure compliance with safety, quality, time and cost requirements. Submission for RAPID Gate 3 Checkpoint 1 document. Further assessment of the scheme delivery programme, including reviews and learning from other projects around the UK and globally.

### 3.3. Activities for Gate 3 Checkpoint 1

A proposed activity plan for the Gate 3 Checkpoint 1 in March 2024 has been developed utilising the WBS set out in Section 3.4. This activity list has been developed with the Gate 2 work package leads.

A summary of the proposed Gate 3 Checkpoint 1 outcomes, workstreams and key activities is provided in Table 3-2. These activities will mitigate the key risks identified in Section 4 in order to confirm the viability of the scheme and increase confidence in the cost estimates.

Table 3-2: Proposed Gate 3 Checkpoint 1 outcomes mapped to T2ST work breakdown structure

Proposed Gate 3 Checkpoint 1 Outcomes	Key activities
Greater certainty on the route alignment and locations for above ground infrastructure	<ul style="list-style-type: none"> <li>Identify potential corridor pinchpoints or significant risks (e.g. techniques &amp; costs for river/stream crossings) on the routes (including targeted site visits, reviews of utilities, updated planning risks)</li> <li>Engineering refinement of above ground infrastructure</li> <li>Undertake assessment to mitigate risks identified at corridor pinchpoints</li> <li>Environmental Screening Assessments of AGI sites and pinchpoints (e.g. next to SSSIs) - access to be confirmed</li> </ul>
Initial non-statutory consultation(s) to provide increased confidence in stakeholders' reactions to the options studies and current preferred options	<ul style="list-style-type: none"> <li>Develop Engagement Plan beyond Gate 2</li> <li>Engage with identified stakeholders and customers as required by the updated Engagement Plan</li> </ul>
Initial contact and discussions with critical landowners affected by the scheme, particularly those at the permanent sites of above ground infrastructure and at some potential pinch points in the route corridor	<ul style="list-style-type: none"> <li>Identify land owners for above ground infrastructure and corridor pinchpoints (including site visits)</li> <li>Engage with key landowners, as required</li> <li>Start to review land access for future survey requirements</li> </ul>
Developed the interfaces with other schemes, such as either STT or SESRO as the source and Southern Water's Water for Life Hampshire (WFLH) schemes, to ensure the feasibility of any connections are confirmed	<ul style="list-style-type: none"> <li>Interaction and support to other schemes to ensure T2ST connections and interfaces are appropriately accounted for</li> <li>Update of consenting strategy interface with SESRO and STT</li> <li>Develop details for SESRO and STT connection points</li> <li>Review of connections into Southern system, including development of initial plans for the operational philosophy principles</li> </ul>
Assess opportunities to maximise the potential from existing or other planned schemes to ensure we develop the most efficient and lowest impact T2ST scheme.	<ul style="list-style-type: none"> <li>Assess utilisation of existing crossings of WFLH schemes</li> <li>Review opportunity to combining the WTW with a WTW at SESRO (if required)</li> <li>Further investigate proposals to utilise the Andover link main on the lower capacity transfer</li> </ul>
Updated regional stakeholder engagement	<ul style="list-style-type: none"> <li>Undertake ongoing technical engagement with regulators (EA, NE, DWI)</li> </ul>
Details of efficient spend to Gate 3 Checkpoint 1, including a breakdown of costs against activities and evidence of efficiency of spend (benchmarking or tenders) and assurance	<ul style="list-style-type: none"> <li>Programme Manager to closely monitor scope, spend and risks.</li> <li>Reporting of all spend against budget to ensure FD allowance is not exceeded and efficiency of spend can be demonstrated.</li> </ul>
Assessment of key risks to identify potential regulatory barriers, guidance or changes required for the solution to progress	<ul style="list-style-type: none"> <li>Continuously monitor, report and mitigate all cost and scheme delivery risks.</li> <li>Engage with regulators, including RAPID, on an ongoing basis to the Gate 3 Checkpoint 1.</li> </ul>
Identification of any changes in solution partner (other water company) or solution substitutions	<ul style="list-style-type: none"> <li>Work with South East Water to confirm if spur is required and, if so, how Thames Water and Southern Water will work with South East Water.</li> </ul>
Develop solution programme plan to determine the activities that need to be undertaken prior to each subsequent gate	<ul style="list-style-type: none"> <li>Confirm preferred procurement approach and key activities to set up procurement vehicle.</li> <li>Prepare an updated and more detailed option-specific programme for overall scheme delivery.</li> <li>Review option to start the Section 35 application to make T2ST an NSIP.</li> </ul>
Proposals for Gate 3 Checkpoint 2 activities and outcomes, and penalty scale, assessment criteria and contributions	<ul style="list-style-type: none"> <li>Identify detailed workstreams, activities and work packages to develop the scheme beyond the Gate 3 Checkpoint 1.</li> </ul>

Cost estimates for the above activities are provided in Annex H: Efficiency of Gate 2 Expenditure and Gate 3 Checkpoint 1 Planning.

### 3.4. Work Breakdown Structure (WBS)

All proposed activities and outcomes for the Gate 3 Checkpoint 1 follow on from the work packages undertaken for Gate 2.

The proposed WBS for the Gate 3 Checkpoint 1 activities is provided below in Table 3-3.

*Table 3-3 T2ST Gate 2 Work Breakdown Structure*

Ref	Level 1, Workstream
1	Programme & Project Management
2	Feasibility Assessment and Concept Design
3	Option benefits development and appraisal
4	Environmental Assessment
5	Data Collection, Sampling, and Pilot Trials
6	Procurement Strategy
7	Planning Strategy
8	Stakeholder Engagement
9	Legal
10	Other

## 4. Key Risks and Mitigation Measures

This section provides an assessment of the key risks to the solution's planned progress to completion (including requirements at gates). This includes:

- Risks to costs and benefits, programmes of work, dependencies, assumptions; potential regulatory barriers, guidance or changes required for the solution to progress.
- The output of a risk assessment exercise showing the original and residual risk scores following mitigation.

The risks reported in this section are consistent with those reported through the RAPID quarterly reporting process. All of these risks are actively managed and have proposed mitigation measures in place.

A summary of this section is included in Section 7 of the RAPID Gate 2 submission.

### 4.1. Risk Management

Risk management is undertaken as a standard activity by the Programme Manager and governed by the Programme Management Board. This approach is a continuation from Gate 1 and is proposed to continue post Gate 2.

The overall approach to risk and opportunity management on this programme is to minimise the likelihood and impact of risks occurring, to maximise the value and likelihood of opportunities being realised now or in the future by the programme partners and to ensure that all realised risks are tracked and managed through a proactive issue management process.

### 4.2. Risk Registers

Up to Gate 2 risk has been considered in two ways:

- Costed Risk Register: the ACWG Costed Risk methodology has been adopted to record risks that have the potential to have a material impact on the overall cost to deliver the scheme. This is discussed further in Section 8 of the RAPID Gate 2 Report and Annex A4: Cost and Carbon Report. The output from the costed risk register is built into the scheme cost estimate and analysis of cost optimism bias.
- Scheme Delivery Risk Register: The key risks from the programme risk register are shown below in Table 4-1. This is consistent with the version shared with RAPID, through the quarterly reporting process. There are no residual 'red' risks identified and all 'amber risks' are stable and have active mitigations in place.

Green	No risks and progress is going to plan
Amber	There is a risk that is impeding/could impede progress but there is a plan to manage it
Red	There is a risk that is impeding/could impede the progress of the scheme, and there is no plan to manage this

Table 4-1 Risk register

Category	Risk description	Impact rating pre-mitigation	Mitigation	Impact rating post-mitigation	Trend at Gate 2
Interdependencies	Transfer dependent on SESRO, STT or other source. Without parallel development of new sources, the transfer would not be viable. There is a risk that other options are 'competing' for this source of water and, therefore, that there could be insufficient resources to develop the scheme.		Mitigated by working closely with WRSE to ensure the wider options are modelled and the need for the scheme and sources of water are confirmed. We are highlighting consenting interdependencies and infrastructure interfaces between different SROs and undertaking collaborative planning for them.		Stable
Interdependencies	The interaction of potential options to supply water to Southern Water with the ongoing development of its Water for Life Hampshire (WfLH) programme has yet to be finalised. This will help define the need and scale of the T2ST SRO, and confirm linkage locations. There is a risk that the need for the scheme may not be fully understood until other schemes are developed, and that the receiving network is not adequately designed to prepare for the likely transfer capacities and connection locations.		The mitigation for this is working closely with other schemes and Southern Water's teams to ensure all teams are working collaboratively and different schemes take account of each other.		Stable
Commercial	How the partners will trade the resource (pricing) has not been agreed or discussed in any detail at this early stage. This will be dependent on the source of the water (SESRO and/or STT) and the commercial arrangements for regional water trading. Likewise, ownership and the operation of any new assets, which are subject to confirmation on the procurement approach (e.g. DPC).		Thames Water and Southern Water are jointly investigating potential commercial setups for delivery of the SRO. Initial discussions on trading/pricing will take place after Gate 2 once the need and utilisation of the scheme have been confirmed.		Stable
Timetable	Interaction with the WRSE regional plan and WRMPs (Thames Water and Southern Water) with different timescales and potential difference in reporting requirements. The overall need for the T2ST scheme, the capacity of the proposed scheme, and the timing of the schemes are all heavily reliant on the outputs from the regional plan.		This is being mitigated through close collaboration with WRSE and the ongoing support from the SRO team, Thames Water and Southern Water resources as required.		Stable
Environment	Environmental Policy and Destination is currently under review by the National Appraisal Unit (NAU) and WRSE with the involvement of water companies etc. As such, there are uncertainties to SRO cost/benefit and SRO timing driven by Environmental Policy reviews and size of Environmental Destination. Also, the regional plan will be impacted by the scale of the Environmental Destination, which could affect the timing and need for SROs.		This risk is mitigated by WRSE incorporating a range of environmental ambition outcomes in its draft regional plan and showing how the options selected would differ under each. WRSE draft regional plan (Nov 2022) also highlights future environmental policy risks that could affect intra and inter-regional transfers such as T2ST. Note this is an overarching risk not specific to T2ST and is managed at a regional level.		Stable
Environment	Potential impacts from the pipelines entering environmentally sensitive areas.		Mitigated through the planning, environmental and engineering workstreams working closely together to explore opportunities to avoid or reduce likely effects on local environmental and social receptors, through the Route and Site Selection process for Gate 2. The SRO team is working closely with stakeholders such as the Environment Agency (EA) and Natural England (NE).		Stable