



# ANNEX F1

## Scheme Delivery Plan

This document has been written in line with the requirements of the RAPID gate two guidance and to comply with the regulatory process pursuant to Severn Trent Water's and Affinity 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, Severn Trent Water and Affinity 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.

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# **Minworth SRO**

RAPID Gate 2 Submission  
Annex F1: Scheme Delivery Plan

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Version Number	Date	Purpose
1	14/06/22	Draft - 1 <sup>st</sup> Line Assurance
2	15/07/22	Update – Action log comments addressed where possible
3	15/09/22	Prepared for 2 <sup>nd</sup> line assurance

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# 1. Introduction

This document provides a technical annex to the Gate 2 submission for the Minworth SRO. The project-level plan sets out the key solution-specific milestones to delivery and includes key activities and outputs that need to be undertaken and achieved prior to each subsequent gate. It includes the proposed programme for delivery of the scheme, scope of work and future submission of consent application(s), as well as an assessment of the key delivery risks and proposed mitigation strategy.

This document supports the summary provided in Chapter 7 in the main Gate 2 Report.

## 2. Overall Programme for SRO Delivery

### 2.1 Introduction

Minworth Strategic Resource Option (SRO) offers raw water support to either the Grand Union Canal (GUC) SRO, the Severn to Thames Transfer (STT) SRO, or a combination of the two. Minworth SRO can be 'construction ready' in AMP8 and will deliver a deployable output (DO) in a phased approach, to match the requirements of receiving SROs, commencing in 2031.

The regional and WRMP24 plans are still at a draft stage and will be subject to further consultation, regulatory scrutiny, and potential change through to their finalisation, which is anticipated to be autumn 2023. For Minworth SRO, we have used the indicative dates for the points when GUC and STT SROs will be required. Whilst the draft regional and company plans give an indication of these requirements, it is considered premature to establish firm conclusions at this stage, pending the outcome of this process and the approval of final plans.

The earliest deployable output (DO) for Minworth SRO to support the GUC SRO will be 2031, which at the time of writing supports the programme published by the GUC SRO (see Table 2.1 below for detail). Minworth SRO would make water available to enable up to 100 Ml/d DO transfer via the GUC SRO, with necessary treatment processes to meet the receiving waterbody's (Grand Union Canal) accepted quality requirements.

**Table 2.1: Minworth WwTW Outputs**

SRO Element	Yield Benefit Delivered	Cumulative Yield Benefit Delivered	Average Deployable Output Benefit Delivered	Cumulative Average Deployable Output Benefit Delivered	Earliest Deployable Output Date	Average Deployable Output Benefit Required*	WRSE Earliest Date Required*
GUC SRO (Phase I)	58 Mld	58 Mld	50 Mld	50 Mld	2031	50 Mld	2031
GUC SRO (Phase II)	57 Mld	115 Mld	50 Mld	100 Mld	2031	100 Mld	2040
STT SRO	115 Mld	230 Mld	70 Mld	170 Mld	2032	170 Mld	2060

\* Based on draft WRSE regional plan (November 2022)

The earliest deployable output (DO) for Minworth SRO to support the STT SRO will be 2032, which at the time of writing supports the programme published by the STT SRO in terms of the earliest possible construction date for the STT pipeline. This DO would be for Minworth SRO to be available and commissioned into service to supply 70Ml/d to the STT SRO, with necessary treatment processes to meet the receiving waterbody's (River Avon) accepted quality requirements.

## 2.2 Detailed Plan to Construction Ready

At the start of Gate 3 we are recommending that Minworth SRO progresses in line with GUC SRO as they are both linked. This will ensure that Minworth SRO is available to support GUC SRO when needed. We will continue to liaise closely with the STT SRO team in terms of the STT requirements, which will be linked to the final regional plan outputs. This will ensure that Minworth SRO is available to support STT SRO when needed.

As set out in Table 2.2 below, the Gate 3 duration is just over two years. This results in our proposed Gate 3 date being in Q3 (October to December) of 2025. At this stage we are recommending a time range, due to the level of programme risk and uncertainty through the next stage of the project.

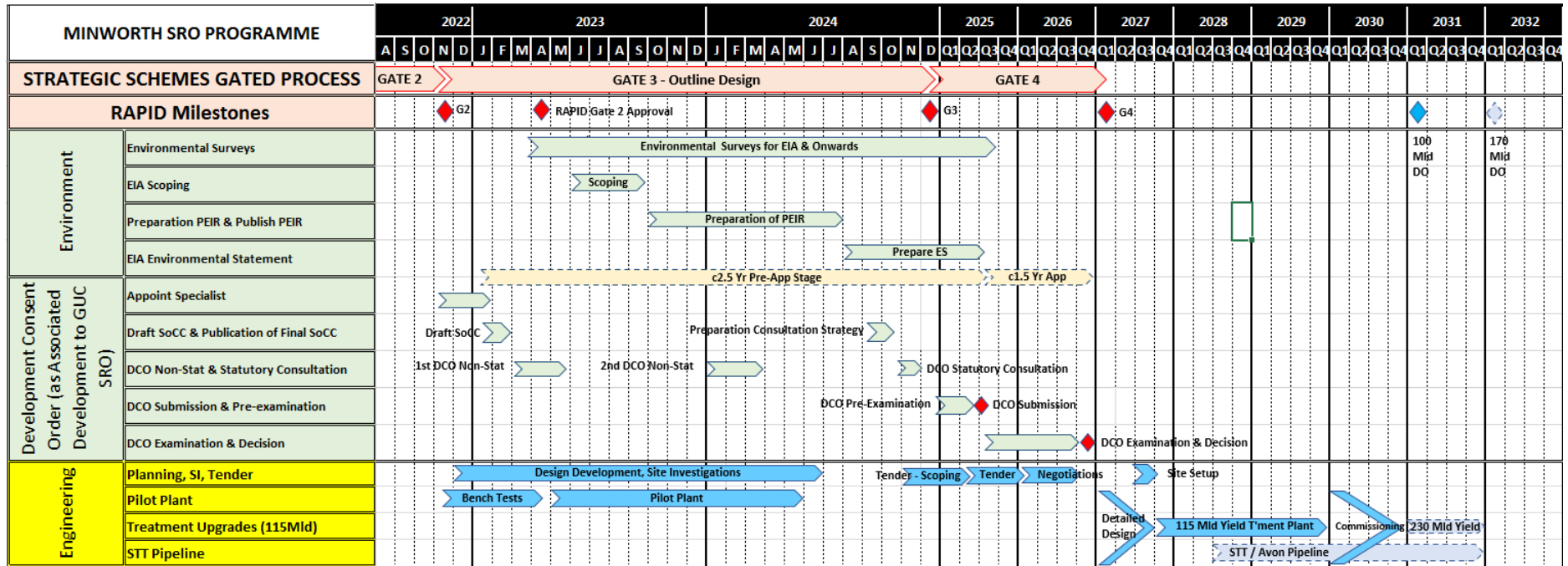
Our plan is based on Minworth SRO being 'construction ready' in AMP8 to be able to support the delivery of GUC. Table 2.3 below shows the plan to achieve this. It is considered the earliest possible timeline accounting for the design, consenting, procurement, construction, and commissioning activities. The construction plan indicates that the Minworth SRO could be 'construction ready' by 2027 and commissioned to enable the DO by 2031.

**Table 2.2: Significant Project Milestones**

Milestone	Key Output / Alignment	Date
End Gate 3 / Start Gate 4	Pre-Application Stage of DCO Process (includes EIA, PEIR, Environmental Statement, Non-Statutory and Statutory Consultations)	Q4 2024
End Gate 4	DCO Approval Decision	Q1 2027
Complete Procurement	Contract in place with appropriate design and build contractor	Q1 2027
Construction Ready	Detailed design completed to a point to permit site start; all land entry issues resolved	Q4 2027
Assets Commissioned	DO available for GUC	Q1 2031
Assets Commissioned	DO available for STT	Q1 2032

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Table 2.3: Integrated Programme



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The above programme relies on several assumptions. The significant assumptions are listed in Table 2.4 below:

**Table 2.4: Project Assumptions**

<b>Assumption</b>	<b>Commentary</b>
Option Selection	The programme assumes that Minworth SRO is still required to support GUC SRO and that GUC SRO will continue (the same applies to STT SRO, as part of a phased delivery)
DCO	It is assumed that all works required as part of the Minworth SRO can be consented as 'associated development' as part of any GUC DCO application (and that a separate DCO application is consented for the STT SRO, as part of a phased delivery)
Procurement	As per the advice provided, we have assumed that DPC is not applicable and that a design and build contract will be awarded through a compliant procurement process
WRMP Public Enquiry	It is assumed that, in the event of any enquiry, the GUC SRO can proceed (the same applies to STT SRO, as part of a phased delivery)
WRMP finalisation	It is assumed that this is completed in 2023
RAPID Gated Process	It is assumed that all activity can proceed whilst a decision is made at each approval Gate
DCO Approval	It is assumed that DCO is approved by the Secretary of State and that there are no exceptional or material requirement introduced that will affect the delivery of the SRO (for both GUC and STT elements)

## **2.3 Critical Path and Interdependencies**

The Minworth SRO critical path for both the GUC and STT SROs is currently being considered as running through the Development Consent Order (DCO) consenting and pre-application process. Note that Minworth SRO would be considered as Associated Development to the GUC SRO DCO application but would require its own DCO application for the STT element, with associated pipeline to the River Avon. This difference in consenting route is because the GUC SRO cannot progress without the Minworth SRO source, whereas STT SRO is able to phase and source yield from other providers, as required, depending upon water resource planning decisions at regional and national level.

There is an opportunity to shorten the planning and consenting timeline should a Town and Country Planning Act (TCPA) route prove to be viable, and investigations are ongoing into this possibility; this applies to both GUC and STT SROs.

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The key activities associated with the DCO pre-application process are:

- Consultation Report
- EIA Scoping
- Environmental Surveys (considering seasonality)
- Preliminary Environmental Impact Report
- Environmental Statement
- Non-Statutory Consultation
- Statutory Consultation
- Section 35 Request (if required)
- Collate application data and documents
- DCO drafting

The key interdependencies for the Minworth SRO are

- GUC SRO - needs to continue and be part of the WRMP24 approvals process
- STT SRO - needs to continue and be part of the WRMP24 approvals process
- Gate Approval – approval at the relevant RAPID Gate dates is essential to proceeding with the project
- DCO – Minworth SRO will be part of the GUC SRO DCO process as an ‘associated development’

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## 3. Risk Management

### 3.1 Programme Risk Register

We actively maintain a project risk register for Minworth SRO, which records risks and tracks mitigation actions. Key risks, defined as those with a high residual risk or those where mitigation plans are off track are reviewed by the Minworth SRO project board monthly.

Risk is managed across the SRO programme using two specific approaches:

1. A Costed Risk Register which is produced by the technical workstreams. This follows an industry standard Monte-Carlo methodology and provides the detailed breakdown of technical and construction phase risks that could have a material impact on the costs of the scheme.
2. The overarching Programme Risk Register is reported at high-level to RAPID through the quarterly reporting process. This provides a register of programme level risks to the overall delivery of the scheme. It includes risks associated with the GUC and STT SRO systems where these would not otherwise be dealt with at a scheme level.

The following tables are included below:

The risk RAG scoring matrix in Table 3.1

The risk RAG probability / value definitions Table 3.2

The RAPID risk definitions in Table 3.3

Current Minworth SRO Risk Register in Table 3.4

**Table 3.1: Risk RAG Scoring Matrix**

RISK RAG SCORING	Probability of risk occurring					
	1	2	3	4	5	
Impact of risk occurring	5	5	10	15	20	25
	4	4	8	12	16	20
	3	3	6	9	12	15
	2	2	4	6	8	10
	1	1	2	3	4	5

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**Table 3.2: Risk Probability / Value Definitions**

Probability of risk occurring				Impact of risk occurring			
Probability	Definition	Scale	Value	Probability	Definition	Scale	Value
Very High	Highly likely to occur	>50% chance	5	Very High	Could stop the project	Cannot deliver the project	5
High	Likely to occur	20% - 50% chance	4	High	Large impact to the project	Major shortfalls	4
Medium	Possible is may occur	10% - 20% chance	3	Medium	Medium impact to the project	Some shortfalls	3
Low	Low but not impossible	5% - 10% chance	2	Low	Low impact to the project	A few shortfalls	2
Very Low	Very low but not impossible	1% - 5% chance	1	Very Low	Very low impact to the project	Few shortfalls of a limited nature	1

**Table 3.3: RAPID Risk Definitions**

GREEN	No risk/further risk and progress is going to plan
AMBER	There is a risk that is impeding/could impede progress but there is a plan to manage/mitigate the risk
RED	There is a risk that is impeding/could impede progress and there is no current plan to manage/mitigate the risk

**Table 3.4: Current Minworth SRO Risk Register**

RAPID Risk number	Short Description	Detailed Description	Risk Score	Mitigation strategy	Category	Tread / States	Residual Risk
RSK003	Delays from extended environmental investigations	Due to the nature of the programme there could be pressures from environmental regulators (EA, NE) to undertake additional extensive varied environmental surveys at any stage.	12	Arrange workshops with EA to inform and receive inputs at fixed times, setting expectations for what can be achieved in the timescales. Technical experts from Severn Trent and Affinity involved in project.	Environment	Stable	6
RSK004	Regional Plan reconciliation	Risk that the regional Plans will not align, and that a difference will exist in the selection of SROs across the regional plans.	16	Active engagement with regional groups. Scenario planning work is currently being undertaken in case this risk is realised.	Planning	Stable	12
RSK005	Commercial information sharing	Where companies are working together on scheme costing they will be potentially sharing cost sensitive information which could be interpreted as being anti-competitive.	9	Embedded processes in the project to ensure competition law is not breached following advice from legal colleagues. An interim management strategy is to take a cautionary approach which means what is shared is only what is needed to be shared	Competition act	Stable	6
RSK007	CBA and social net gain valuations	Risk that our current CBA methodology doesn't adequately account for emerging views on social net gain valuation.	9	Common issues across SROs with a common solution being sought through ACWG. A brief has been written and shared with RAPID. Piece of work GUC for Social, non-water resource and environment valuation.	Environment	Stable	6
RSK009	Carbon Neutrality Approach	Lack of clarity around carbon neutrality requirements could lead to inconsistent costing across SROs and deliverables that don't meet RAPID's expectations.	12	All SROs are working with RAPID to get a clear and common position on Carbon Neutrality. A task and finish group has been established to provide a consistent approach across SROs.	Planning	Stable	6
RSK013	Clarity of WRMP requirements	Inputs for WRSE have been clarified for the March deadline. There is additional activity for the SRO as the metrics for WRW and WRSE are different. This risk has decreased with recent clarity around requirements and engagement over resilience metrics.	8	Inputs for WRSE have been clarified for the October deadline.	Other	Stable	6
RSK014	Potential for HS2 to leave Minworth landlocked	We have identified a risk that the construction of HS2 and the Curzon Street station spur could cut off Minworth from the 2 transfer SROs it has potential to supply.	16	We are working with the STW HS2 liaison team to understand the timelines and options for mitigation. This will continue into gate-3.	Engineering	Stable	12
RSK020	Navigational flow requirements on River Trent	Flows required for navigation on the River Trent at North Muskham or requirements to maintain flows for ecological reasons in the river Tame or Trent may limit the amount of effluent that can be diverted from the River Tame under low flow conditions, this risk relates directly to the downstream HDF	20	We have held a discussion with RAPID to emphasise this risk and are looking at potential to add storage options into this SRO to mitigate. Note that this represents a high cost mitigation strategy and may involve the creation of one or more high volume off-line storage facilities plus suitably sized connecting infrastructure.	Environment	Stable	12
RSK031	Impacts of planning process	Current timelines and gate requirements involved with potential DCO application may not align with gated process dates. Process will require significant resources, and there will be pressure on resources with multiple SROs requiring the same expertise from consultants	15	Employ specialist consultant to assist the project with the complications of planning and route strategy	Other	Stable	10
RSK032	Anticipated permitting is resulting in additional treatment - GUC	Due to the EA current requirements to undertake a surface water pollution risk assessment, the engineering consultant's solution deals with a worse case scenario - which has increased the SRO cost considerably from what was understood at Gate 1	25	Undertaking sensitivity analysis and dilution modelling reviews to establish if the proposed treatment and process units can be relaxed in the solution by provision of supporting information through further dialogue with the EA. Bench trials and pilot plants proposed in G3. Note that the mitigation outcome may take the form of a high cost treatment facility approaching a potable water plant in terms of scale and complexity.	Engineering	Stable	12
RSK033	Anticipated permitting is resulting in additional treatment - River Avon	Due to the EA current requirements to undertake a surface water pollution risk assessment, the engineering consultant's solution deals with a worse case scenario - which has increased the SRO cost considerably from what was understood at Gate 2	25	Undertaking sensitivity analysis and dilution modelling reviews to establish if the proposed treatment and process units can be relaxed in the solution by provision of supporting information through further dialogue with the EA. Bench trials and pilot plants proposed in G3. Lower risk to River Avon due to greater dilution levels	Engineering	Stable	10
RSK034	Securing cross company bulk water supply agreements	STW will need to agree a commercial contact with Affinity Water to cover the bulk supply of raw water to feed GUC SRO from Minworth SRO; risk to both projects remains until terms are agree and contract executed	15	Ongoing and continued close collaborative liaison between STW and Affinity, utilising appropriate legal and commercial support as required, to draft and agree appropriate contractual terms and conditions	Commercial	Stable	10

## 3.2 Key Activities

Table 3.5 below shows the high-level work breakdown structure and key activities. These are aligned to the requirements defined by Ofwat’s strategic regional water resource solutions appendix to the PR19 Final Determinations and Guidance for Gate 2.

**Table 3.5: Expected Key Activities and Decisions**

Phase	Timing	Name	Key Activities	Decisions
1	April 2020 – Jan 2022	Gate 1	<ul style="list-style-type: none"> <li>• <u>RAPID Gate 1 submission</u></li> </ul>	Gate 1 approved by RAPID
2	July 2021 – Nov 2022	Gate 2	<ul style="list-style-type: none"> <li>• <u>RAPID Gate 2 submission</u></li> </ul>	
3	Dec 2022 – Q4 2024	Gate 3	<ul style="list-style-type: none"> <li>• <u>Alignment of scheme need, timing and scale to Final WRMP24 and final Draft Regional Plan (winter 2023)</u></li> <li>• <u>Commence and complete engineering data collection and survey</u></li> <li>• <u>Commence environmental baseline data collection and survey</u></li> <li>• <u>Land referencing</u></li> <li>• <u>Complete remaining options technical appraisal for key aspects of the project</u></li> <li>• <u>Undertake Non-statutory consultation(s) on options and initial preferred scheme</u></li> <li>• <u>Develop EIA Scoping Report, submit to PINS and receive formal EIA Scoping Opinion</u></li> <li>• <u>Response to Scoping Opinion – clarity sought on issues raised. (non-statutory consultation(s) on options and initial preferred scheme</u></li> <li>• <u>Complete baseline data collection and survey</u></li> <li>• <u>Statement of Community Consultation (SoCC) drafted, agreed and published</u></li> <li>• <u>Preliminary Environmental Information Report (PEIR)</u></li> <li>• <u>Statutory consultation(s) on final scheme</u></li> <li>• <u>Further design refinement and development of initial preferred scheme to reflect survey data collection and stakeholder feedback at consultation</u></li> <li>• <u>Ongoing liaison and negotiation with affected landowners</u></li> <li>• <u>Formal Environmental Impact Assessment</u></li> <li>• <u>Creation of full DCO document suite</u></li> <li>• <u>Submission for RAPID Gate 3 document suite</u></li> <li>• <u>Design &amp; Build Contract Scoping</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>RAPID Gate 2 approval (Draft decision March 2023, Final June 2023)</u></li> <li>• <u>PINS EIA Scoping Opinion</u></li> </ul>
4	Q1 2025 – Q3 2026	Gate 4	<ul style="list-style-type: none"> <li>• <u>DCO submission to PINS preparation, preliminary meeting and examination in public</u></li> <li>• <u>Planning Inspector’s report to Secretary of State</u></li> <li>• <u>Submission for RAPID Gate 4 document suite</u></li> <li>• <u>Design &amp; Build Contract Tender</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Partner company approval to submit DCO application</u></li> <li>• <u>RAPID Gate 3 approval</u></li> <li>• <u>Secretary of State’s grants GUC DCO</u></li> </ul>
5	Q4 2026 - Q2 2027	Contract award	<ul style="list-style-type: none"> <li>• <u>Design &amp; Build Tender Assessment and Contract Award</u></li> <li>• <u>Confirm securement of land control/ acquisition</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>RAPID Gate 4 Approval</u></li> <li>• <u>Contract award for delivery</u></li> </ul>



Phase	Timing	Name	Key Activities	Decisions
				<ul style="list-style-type: none"> <li>• <u>Land acquisition contracts</u></li> </ul>
6	Q3 2027 – Q1 2031	Construction	<ul style="list-style-type: none"> <li>• <u>Construction lead-in and pre-mobilisation activities</u></li> <li>• <u>Construction and commissioning 50ML/d /100ML/d (phased as required)</u></li> </ul>	<ul style="list-style-type: none"> <li>• <u>Design approvals</u></li> <li>• <u>Final system testing</u></li> <li>• <u>Handover</u></li> </ul>