ANNEX E1

Procurement Strategy

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 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 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.

Strategic regional water resource solutions: RAPID Gate Two

Procurement Strategy Report relating to:

- Grand Union Canal Transfer SRO
- Minworth Reuse SRO
- Severn Trent Sources SRO

Date: 21 September 2022

Document history and status

Revision	Date	Description	Author	Checked	Reviewed	Approved

Glossary and Abbreviations

Glossary	
Treatment A	Treatment for phosphorous
Treatment B	Disinfection
Treatment C	Treatment for trace organics
GUC	Grand Union Canal Transfer SRO
Minworth	Minworth Reuse SRO
ST Sources	Severn Trent Sources SRO
STT	Severn-Thames Transfer SRO
The Trust	Canal & River Trust
Abbreviations	
AfW	Affinity Water
ARD	Allowed Revenue Direction
BSA	Bulk Supply Agreement
CAP	Competitively Appointed Provider
DPC	Direct Procurement for Customers
EIRR	Equity Internal Rate of Return
JV	Joint venture
Licence	Water company conditions of appointment
Ml/d	Mega litres per day
NPV	Net Present Value
RAPID	Regulator's Alliance for Progressing Infrastructure Development
RAV	Regulatory Asset Value
SRO	Strategic Resource Option
WwTW	Wastewater Treatment Works
STW	Severn Trent Water
Totex	Total expenditure
VfM	Value for money
WRSE	Water Resources South East

Contents

1. Introduction

This report sets out our current thinking on the commercial and procurement considerations of three Strategic Resource Options (SROs):

- Grand Union Canal Transfer SRO (GUC);
- Minworth Reuse SRO (Minworth); and
- Severn Trent Sources SRO (ST Sources).

The options and recommendations set out in this report build on the work undertaken at Gate 1 to develop the schemes to a point consistent with the requirements for Gate 2 of RAPID's gated process.[1]

The report reviews the physical characteristics of each scheme, including any updates since Gate 1. It reassesses the options under consideration and propose areas where the boundaries of the schemes could be adjusted to potentially simplify the commercial and procurement arrangements (Section 2).

It tests these options as to their suitability for Direct Procurement for Customers (DPC) – the default RAPID assumption that infrastructure will be competitively procured from a third party (the CAP) under a design, build, finance, operate and maintain (DBFOM) contract[2]. We update tests already undertaken at Gate 1 and run additional tests (including value-for-money) as required (Section 3.1).

With an understanding of which schemes (or elements of the schemes) may be suitable for DPC we consider alternative ownership options, identifying the party potentially best placed to appoint the CAP or otherwise manage the works as appropriate (Section 3.2 and 3.3).

For those elements of a scheme involving a CAP, we consider if there may be a basis for applying the Specified Infrastructure Project Regulations (SIPR)[3] – which provide for a directly licenced Infrastructure Provider (IP) under certain circumstances (Section 3.4).

Having established the key components of each SRO and the relevant managing parties, the report continues to consider the commercial arrangements necessary to facilitate the schemes (Section 4).

It considers where finance is raised and the impact on incentive, risk, and value for customer considerations of various options (Section 4.1). It goes on to consider how the various assets may, where required, operate together in a coordinated manner across a number of parties (Section 4.2). Finally, it sets out how the commercial arrangements may be governed contractually (Section 4.3).

The report then looks at the procurement options for each scheme (or element of the schemes), whether this is through a competitive tender (Section 5.1) or using in-house delivery (Section 5.2). We set out an indicative timetable for each option, consistent with alternative approaches to securing planning set out in the WSP Planning Policy Appraisal and Consents Strategy for the GUC SRO[4] (Section 5.3).

Finally, the report sets out next steps. We identify the key activities necessary to take forward the currently preferred commercial and procurement approach (Section 6).

[1] RAPID, 'Strategic regional water resource solutions guidance for gate two', (February 2022), 7.5

[2] RAPID, 'The regulatory and commercial framework for strategic water resource solutions – a consultation' (8 December 2021) pg17

[3] Statutory instruments 2013 No. 1582, 'The Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013', (27 June 2013)

[4] Version dated November 2021.

1.1 Key parties

The three SROs involve a number of parties with an interest in the successful delivery of the works and other SROs:

Table 1 - Key parties

	SRO		
	GUC	Minworth	ST Sources
Severn Trent Water (STW)	Transfer of water from Minworth	Existing asset owner	Existing asset owner
Affinity Water (AfW)	Delivery of water from Minworth	Source of water to meet needs	n/a
Canal & River Trust (The Trust)	Existing asset owner	n/a	n/a
Severn to Thames Transfer SRO (STT)	n/a	Source of water to meet needs	Source of water to meet needs

Below we briefly consider the relevant features of each party.

1.1.1 Severn Trent Water

STW is one of England's largest appointed water and sewerage undertakers. In 2021, they were second largest by revenue and third largest by regulatory capital value.

STW serve customers in the Midlands of England, operating across the catchments of the Severn and Trent rivers as shown in Figure 1.

In the context of the proposed SROs, STW will enable the potential source of the water resources to meet the needs of AfW and the STT SRO from the Minworth wastewater treatment works, and the STT SRO from the Netheridge wastewater treatment works.

Figure 1: STW supply area

Table 2 - Summary of STW financial position (FY22)[5]

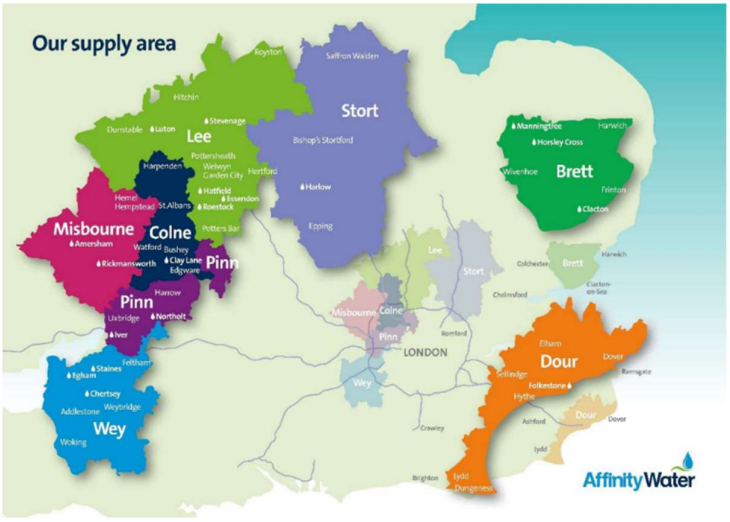
Metric		(£m)
Revenue		1,943.3
EBITDA		907.8
Assets		11,554.2
RCV (June 2022)		10,132.9
Net debt		(6,507.8)
Credit rating	Moody's:	Baa1 (stable)
	Standard and Poor's:	BBB+ (stable)

1.1.2 **Affinity Water**

AfW is England's largest appointed water-only undertaker, serving 3.83 million people across eight geographical zones – including parts of Bedfordshire, Berkshire, Buckinghamshire, Essex, Hertfordshire, Surrey, the London Boroughs of Harrow and Hillingdon and parts of the London Boroughs of Barnet, Brent, Ealing and Enfield. They also supply water to the Tendring peninsula in Essex and the Folkestone and Dover areas of Kent.

The Minworth and GUC SROs will, together, provide additional water resources to Affinity's north-western area of operations.

Figure 2: AfW supply area



[5] STW, Financial Statements 2022; RCV: Ofwat, www.ofwat.gov.uk/publications/regulatory-capital-value-updates/, (22 June 2022); Credit rating: STW, www.severntrent.com/investors/debt-investors/, (June 2022).

Table 3 - Summary of AfW financial position (FY21)[6]

Metric		(£m)
Revenue		286.8
EBITDA		66.8
Assets		1,862.1
RCV (*June 2022*)		1,478.4
Net debt		(1,004.3)
Credit rating	Moody's:	Baa1 (stable)
	Standard and Poor's:	BBB+ (stable)

1.1.3 The Canal & River Trust

The Canal & River Trust is a charitable company (limited by guarantee) charged with guardianship of over 2,000 miles of canals and rivers across England and Wales – including the Grand Union Canal, which forms a significant part of the GUC SRO transfer.

The Trust's objectives include delivering improvements in health and safety, maintaining and improving the resilience of its high-risk assets in the face of the growing impact from the climate emergency, supporting the UK Government's "levelling up" agenda, delivering sustainability and climate action, and providing the public with access to the outdoors.

The Trust was established in 2012, taking over the responsibilities of the state-owned British Waterways, and is financed from a mixture of sources, including Defra grant funding, investment and property income, utilities and water development activity (including water trading), boat licences and moorings, and third-party income from charitable activities. The Trust is currently working with Defra to acquire additional grant funding beyond the 15-year agreement put in place by the UK Government in 2012, which is due to expire in 2026/27.

Table 4 - Summary of CRT financial position (FY21)[7]

Metric		(£m)
Income		215.4
Defra grant funding		*52.6*
Investment and property income		*48.0*
Boat licences and moorings		*40.4*
Utilities and water development		*36.9*
Other (incl. 3rd party income, donations, etc.)		*37.5*
Assets		1,216.8
Net debt		(113.6)
Credit rating	Moody's:	N/A

[6] AfW, Financial Statements 2021; RCV: Ofwat, www.ofwat.gov.uk/publications/regulatory-capital-value-updates/, (22 June 2022); Credit rating: STW, www.affinitywater.co.uk/corporate/investors, (June 2022).

[7] Canal & River Trust, Annual Report 2021.

	Standard and Poor's:	N/A

The Trust's responsibilities include maintaining a significant asset base including, inter alia, structures (many of which are listed), canals and waterways, reservoirs, bridges and aqueducts. The Trust monitors and operates the canal network, and delivers capital works, planning and design activities. Operation is given effect through the Trust's MEICA SCADA system[8] which automatically operates pumps and control sluices, and through manual operation conducted by its employees. The Trust's engineering major works capability delivers its capital works, including routine surveys and works on the Trust's reservoirs, and the delivery of a programme of canal restoration. The Trust is a statutory consultee for the purpose of local planning applications and has a statutory duty to provide advice to the local planning authority. It is also a prescribed consultee for the purpose of the NSIP regime, and so is consulted at multiple stages of the DCO application process.

The Trust is not an appointed undertaker within the definition of the Water Industry Act 1991 and does not hold a supply or sewerage licence. It is therefore not subject to economic regulation by Ofwat. However, the Trust has a history of water trading and collaboration with regulated utilities, abstracting from the waterways within its control. In line with regulatory changes introduced through the Water Act 2003, the Trust's waterways are no longer exempt from abstraction licences, and so it is currently in the process of applying for 155 abstraction licences from the EA. Following the award of these abstraction licences, the Trust will be subject to conditions on abstraction designed to protect the environment, and in the case of drought, may be issued a "hands off flow" order to cease all abstraction at affected sites.

1.1.4 The Severn to Thames Transfer SRO

The Severn to Thames Transfer (STT) SRO was identified by Thames Water as part of its Water Resource Management Plan 2019 and is being jointly developed by Thames Water, Severn Trent Water and United Utilities.

STT will provide 300-500Ml/d of raw water to the South East of England during drought events (equating to a Dry Year Annual Average Deployable Output of 250 to 400Ml/d) from four potential sources of water:

- 180Ml/d from Lake Vyrnwy;
- 115Ml/d from STW's Minworth WwTW (part of the Minworth SRO);
- Temporary transfer of 15Ml/d licensed abstraction at Mythe (part of the ST Sources SRO);
- 35Ml/d from STW's Netheridge WwTW (part of the ST Sources SRO).

Collectively, interconnectors, treatment plant, mitigation works, source SROs and conveyance of the support elements through the river systems (Vyrnwy, Severn, Avon and Thames) form the elements of the STT system.

Optimisation modelling of source support and mitigation, undertaken on the basis of costs, deployable output and various demand profiles has shown that source elements can be introduced in a phased manner in response to an increasing deficit. Depending on the selected interconnector (pipeline or canal), the order of use for the source elements varies. This has the potential to affect the requirement for the Minworth and ST Sources SROs:

- The WRSE model will be used to determine whether the Minworth WwTW SRO will be used to support the STT SRO, the GUC SRO, or both in combination.

[8] MEICA SCADA refers to a Mechanical, Electrical, Instrumentation, Control and Automation Supervisory Control and Data Acquisition system.

- The Netheridge element of the ST Sources SRO is less expensive to deliver if a canal interconnector is selected rather than a pipeline, meaning it may see greater utilisation to mitigate supply deficits.

As the design of the STT system develops, it will therefore be important to consider the delivery and operating models of the Minworth Reuse and ST Sources SROs in the context of their expected contribution to the operation of the STT and GUC SROs.

1.2 Interdependencies

GUC, Minworth and ST Sources – together with the STT SRO being developed by STW, United Utilities and Thames Water – have a number of interdependencies with respect to ownership and procurement:

- The GUC requires Minworth as its only source of supply;
- Minworth could supply either the GUC or STT; and
- ST Sources is only required for the STT.

For the GUC in particular, the coordination with Minworth is critical. If the GUC scheme was delivered, but there were delays in delivering Minworth, this could lead to problems in commissioning. At the extreme, if Minworth was never delivered, the GUC could be left as a stranded asset. Similarly, if Minworth were delivered but the GUC was not, then Minworth may be not used up to its full potential and may have introduced additional treatment processes that are not required. We address this in the report by considering Minworth and the GUC as a complete system (see section 3.2).

Similarly, if Minworth or ST Sources were progressed but the STT transfer schemes were subsequently delayed or cancelled, then some or all of the value of the Minworth or ST Sources schemes may be lost. This would need to be considered at Gate 3 in conjunction with the STT SRO.

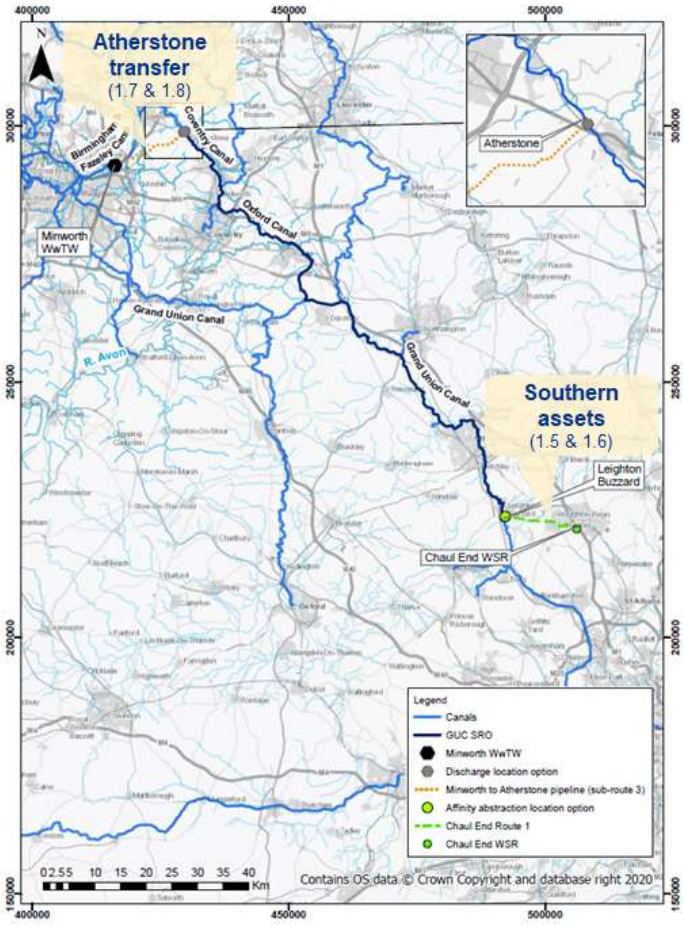
2. About the schemes

At Gate 1, we considered a number of options for each scheme reflecting the technical solutions under consideration at the time. With further development of the technical solutions, we have revisited the options available.

2.1 Grand Union Canal Transfer SRO

The GUC is a scheme to enable the transfer of water from Minworth wastewater treatment works (WwTW) in the STW region to the AfW region, where it is treated and stored to help AfW meet potential water deficits under a number of Water Resources South East (WRSE) scenarios. For much of its length the transfer would make use of existing canals owned by The Trust, with interventions as necessary along its route.

Figure 3 - GUC scheme overview (illustrative)



Since Gate 1 the preferred route for the transfer from Minworth WwTW to the canal network has been specified as a pumping station at Minworth taking water up to a break-pressure tank, followed by a pipeline to Atherstone where it discharges into the Coventry Canal.

The preferred abstraction point has been updated to Leighton Buzzard on the Grand Union Canal, where the scheme includes raw water storage and treatment. The scheme also includes an 8-12km potable water pipeline from Leighton Buzzard to Chaul End, where it connects to the existing AfW network (see Figure 3).

The size of the required transfer remains subject to both forecast demand (dependent on the outcome of the WRSE) and the available supply (dependent on the 'hands-off' flow of the River Trent). The potential size of the transfer is still currently estimated at either 57Ml/d or 115Ml/d.

At Gate 1, the GUC scheme as a whole was (in all options) considered as potentially unsuitable for DPC given the reliance on third party assets (the canal network). While we rerun the DPC assessment of the entire scheme, we also considered it prudent to test the scheme excluding the canal works, which may be expected to help improve the results of the discreteness test.

We note that excluding the canal would leave a set of non-contiguous assets – the short pipeline in the north to Atherstone and the more substantial assets (treatment, storage, pipeline) in the south – which could raise questions around delivery and potential contractual complexity given the number of interfaces this may create.

We therefore consider it prudent to consider a further option, comprising just the assets in the south on a standalone basis. In this scenario, the short pipeline in the north could, potentially, either be delivered by a third party or transferred to the Minworth Reuse SRO. We therefore propose to test the Atherstone pipeline (and associated assets) as a separate option to assess where it may best sit.

The total number of potential GUC scheme options for DPC assessment has overall been reduced to 8, as shown in Table 5:

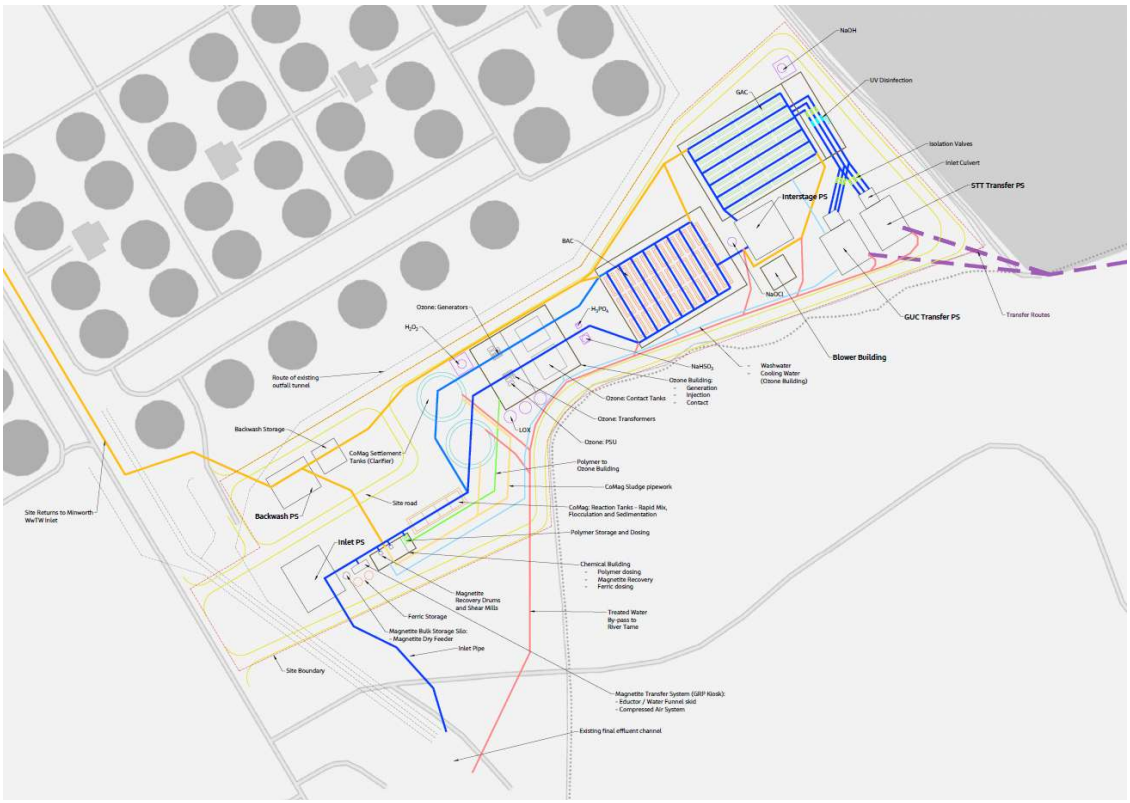
Table 5 - GUC scheme potential options for DPC assessment

	Assets							
	All		All excl. canal		Southern		Atherstone	
Capacity	57Ml/d	115Ml/d	57Ml/d	115Ml/d	57Ml/d	115Ml/d	57Ml/d	115Ml/d
Option no.	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8

2.2 Minworth Reuse SRO

Minworth is a scheme to add additional tertiary treatment to the existing Minworth WwTW owned by STW in order to supply either the GUC scheme, the STT scheme or, potentially, both. If supplying the STT, which makes use of the River Avon, the water needs to be treated for phosphorous (A), disinfection (B) and trace organics (C). The level of treatment if supplying the GUC alone (which makes use of a canal) is being explored, but may also need to be treated for A, B & C. Figure 4 below shows the Minworth expansion to supply both the GUC and STT schemes.

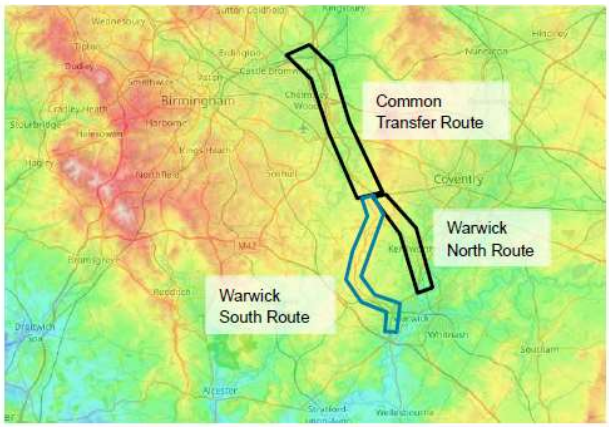
Figure 4 - Minworth expansion including supply to GUC and STT schemes



Minworth WwTW is the only source of water for the GUC scheme. The GUC SRO therefore includes a connection directly from Minworth to the canal network at Atherstone. As set out above, there is a case under certain options for reallocating this transfer (including the associated pumping station and break-pressure tank) into the Minworth SRO.

Unlike the GUC, the STT scheme has access to alternative sources of water. As such, a connection from Minworth WwTW is not in the STT scope. If Minworth WwTW were to supply the STT, then the Minworth scheme itself would have to include the construction of a pipeline. Two potential corridors for a pipeline connecting Minworth WwTW to the STT are being considered. Both options will cross the Warwick area whether from a south or north direction, as show in Figure 5 below.

Figure 5 - Corridors for Minworth pipeline to the STT



At Gate 1, there was some potential overlap in the GUC infrastructure and infrastructure connecting Minworth to the STT. With the preferred technical solution for the GUC identified as the pipeline to Atherstone, this overlap has been removed and the options for Minworth supplying the GUC (Minworth (GUC)) and STT (Minworth (STT)) can largely be considered independently.

The question of sequencing identified at Gate 1 remains. As at Gate 1, we continue to consider the Minworth scheme as a set of initial options with the potential for the procurement of an additional expansion at a later date. Both the size of the initial expansion and any future addition is dependent on the forecast demand from the GUC and STT, pending further work around the supply restrictions as a result of the 'hands off flow' of the River Trent.

With the GUC forecast at either 57Ml/d (low) or 115Ml/d (high) and demand from the STT estimated at 115Ml/d we have again considered the following initial three base options:

- Minworth (GUC) (low) – 57Ml/d expansion for treatment A+B+C;
- Minworth (GUC) (high) – 115Ml/d expansion for treatment A+B+C; and
- Minworth (STT) – 115Ml/d expansion for treatments A+B+C plus a pipeline connecting to the STT.

For Minworth (GUC) we also consider the option where the transfer to Atherstone is included alongside the treatment works expansion. Depending on which GUC options are taken forward, and whether the Atherstone pipeline is determined to be suitable for DPC as a standalone asset or not, then this combined option may become relevant.

For Minworth (STT), at Gate 1 the option was found to require further assessment for DPC based on uncertainty around 'discreteness' at the treatment works. While we will rerun the discreteness assessment for the scheme as a whole, we think it prudent to also look at the pipeline in isolation.

Altogether, these six options, along with their potential future additions, are summarised in Table 6:

Table 6 - Minworth scheme potential options for DPC assessment

<table>
<tr><th rowspan="2"></th><th colspan="3">Scenario</th></tr>
<tr><th>Scheme</th><th>Low GUC volume</th><th>High GUC volume</th></tr>
<tr><td>GUC first</td><td>Minworth (GUC)</td><td>Option 2.1: Expansion of capacity by 57Ml/d to A + B + C standard

Option 2.3: As 2.1 with transfer to Atherstone</td><td>Option 2.2: Expansion of capacity by 115Ml/d to A + B + C standard

Option 2.4: As 2.2 with transfer to Atherstone</td></tr>
<tr><td>STT first</td><td>Minworth (STT)</td><td colspan="2">Option 2.5: Expansion of capacity by 115Ml/d to A + B + C standard, plus pipeline to River Avon

Option 2.6: pipeline to River Avon</td></tr>
</table>

2.3 ST Sources SRO

Schematic redacted

ST Sources is a scheme to develop water resources, principally for the STT (being considered under a separate submission), but with the potential to also supply others. It is made up of two components:

- Transfer of unused abstraction licence for STW's Mythe WwTW to STT (estimated at 15Ml/d); and
- Diversion of 35Ml/d of water from STW's existing sewage treatment works at Netheridge, with the addition of treatment A, to a supply point for the STT.

The transfer of the Mythe abstraction licence has no capital cost associated with it. Procurement and ownership issues are therefore not relevant. This report therefore focuses on the diversion of water from Netheridge.

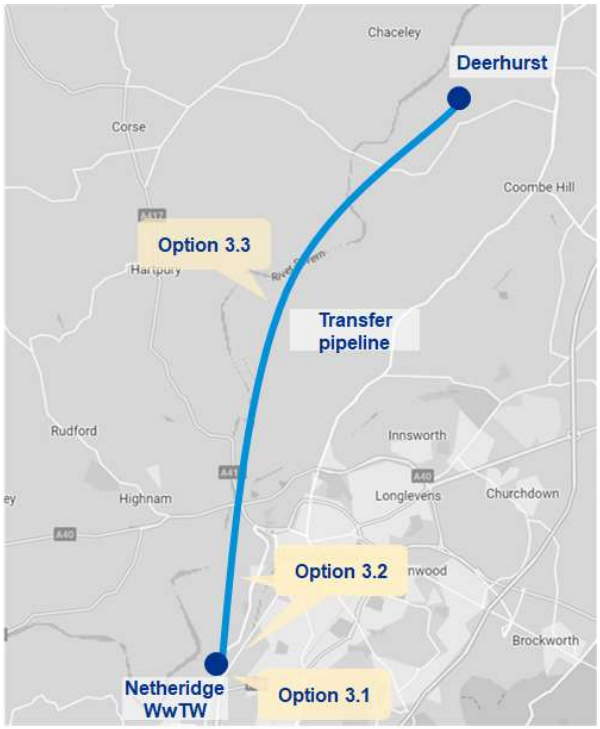
Diverting water from Netheridge will require works on the existing site, as shown in Figure 6 below:

Figure 6 - Addition of treatment A at Netheridge to support diversion of 35Ml/d

If supplying the STT SRO then the water from Netheridge may take one of two options for connecting to the STT SRO, depending on the route selected by the STT SRO. Should the STT SRO select a route making use of a pipeline, then Netheridge may require a pipeline to Deerhurst to connect the schemes. Alternatively, should the STT SRO select a route making use of a canal, then Netheridge may discharge directly into the canal adjacent to the site.

Discussions with STT suggest the pipeline to Deerhurst is likely to be required, but this will only be confirmed at a later stage. The options in this report have been taken forward on the basis of supplying the STT SRO through a supply point at Deerhurst, as illustrated in Figure 7:

Figure 7 - ST Sources scheme overview (illustrative)



The options include consideration of the Deerhurst pipeline on a standalone basis. This reflects the Gate 1 findings that the works at Netheridge require further assessment for DPC given concerns around 'discreteness'. Should the scheme not be considered suitable for DPC as a whole, the Deerhurst pipeline can then be considered in isolation.

Table 7 - ST Sources scheme main options

Options
Option 3.1: Treatment of 35Ml/d at Netheridge WwTW
Option 3.2: Treatment of 35Ml/d at Netheridge WwTW and pipeline to Deerhurst
Option 3.3: Pipeline to Deerhurst

3. Delivery and ownership

The default RAPID assumption is that SROs will be delivered via **DPC**, unless there are clear reasons for delivery to take place **in-house**. Where the SRO in its entirety is unsuitable for DPC, RAPID has asked that elements of the SRO should be considered for DPC.[9]

Below we set out the result of testing each option as to its suitability for DPC. Based on the results of these test we consolidate these options into sets of work packages, identifying whether each work package is potentially suitable for delivery by a CAP or is more suitable to being managed by another party.

Where a work package is identified as potentially suitable for delivery via DPC we identify the appropriate counterparty. We go on to check whether there is any basis for applying the Specified Infrastructure Provider Regulations (SIPR) in order to protect the CAP counterparty from certain financial liabilities under DPC.[10]

Based on this assessment, the key conclusions on delivery and ownership are as follows:

- The GUC SRO, in its entirety, is unsuitable for DPC given the necessary integration with assets owned and controlled by the Trust.
- There is a strong case for the Trust to own and operate the assets on the canal network itself. However, the Trust is unlikely to be in a position to finance the works on the canal. The CAP (see below) may be best placed to raise finance on behalf of the Trust. The CAP's contractors may also be best placed to undertake the works on the canal, before transferring them to the Trust for operation. This would be subject to market testing.
- The works from the abstraction point at Leighton Buzzard, including the treatment works, storage and pipeline to Chaul End, are suitable for DPC. However, including the pipeline connecting Minworth to the northern end of the canal adds additional interfaces and could be better delivered as part of the Minworth SRO.
- With the DPC works principally within the AfW region, and closely tied to their network, it is recommended that AfW procures and contracts with the CAP.
- Initially, Minworth is likely to be developed to supply the GUC, with a further expansions and pipeline to supply the STT SRO potentially added at a later date.
- As a scheme to supply the GUC, Minworth is not suitable for DPC given the works are an expansion on an existing site. It is recommended that STW delivers the assets and operates them subject to the coordination with the GUC.
- For the GUC/Minworth system as a whole, STW, The Trust, the CAP, and AfW as ultimate offtaker from the scheme, will need to put in place arrangements to carefully coordinate their operations. In particular the discharge into and abstraction from the canal needs to operate within an acceptable range.
- Where Minworth is supplying the STT SRO, a pipeline connecting Minworth to the STT SRO infrastructure is suitable for DPC. There is potentially a case for either STW or the Beneficiaries of the STT SRO to appoint the CAP. This should be further explored once details of the STT SRO are known, along with the appropriate mechanism for further expanding the Minworth treatment works.
- The ST Sources SRO, for reasons of discreteness, is not suitable for DPC. Given that it requires work on an existing STW site, it is recommended that STW delivers the assets.

[9] RAPID, 'The regulatory and commercial framework for strategic water resource solutions – a consultation' (8 December 2021)

[10] SIPR requirements: Defra, Financing Water Quality Management and Investment in Infrastructure

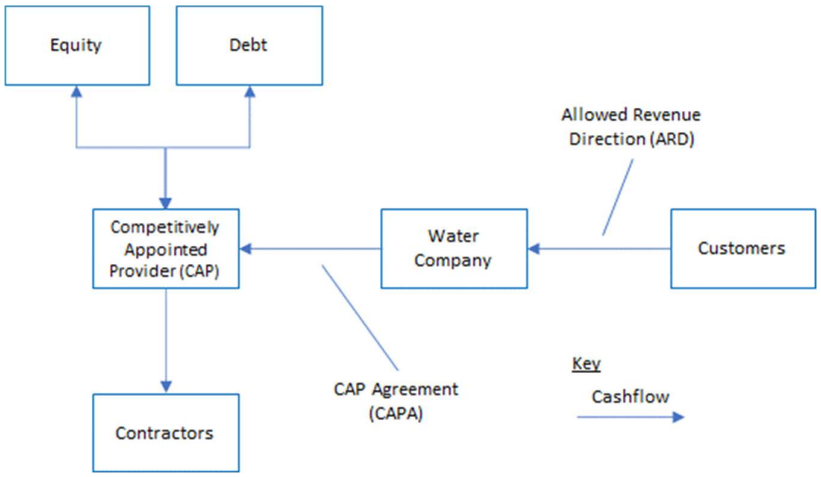
Arrangements for how it operates would need to be agreed with the relevant parties to the STT SRO once the STT scheme is more fully developed.

3.1 Assessment for DPC

DPC provides for a water company to use competitively appointed providers (CAPs) to design, build, finance, operate and maintain suitable infrastructure assets. The water company enters into a CAP Agreement (CAPA) with the CAP setting out the output requirements for the asset and the payment terms over the life of the contract.

DPC is supported by a number of changes to the water company's conditions of appointment (Licence). Modifications to Condition B and the addition of a Condition U to the Licence allow the water company to recover payments to the CAP from its customers through an Allowed Revenue Direction (ARD) and set out a methodology for bringing the project in-house at the end of the CAPA (if there is a residual asset) or on termination (see Figure 8).

Figure 8 - High-level DPC structure (illustrative)

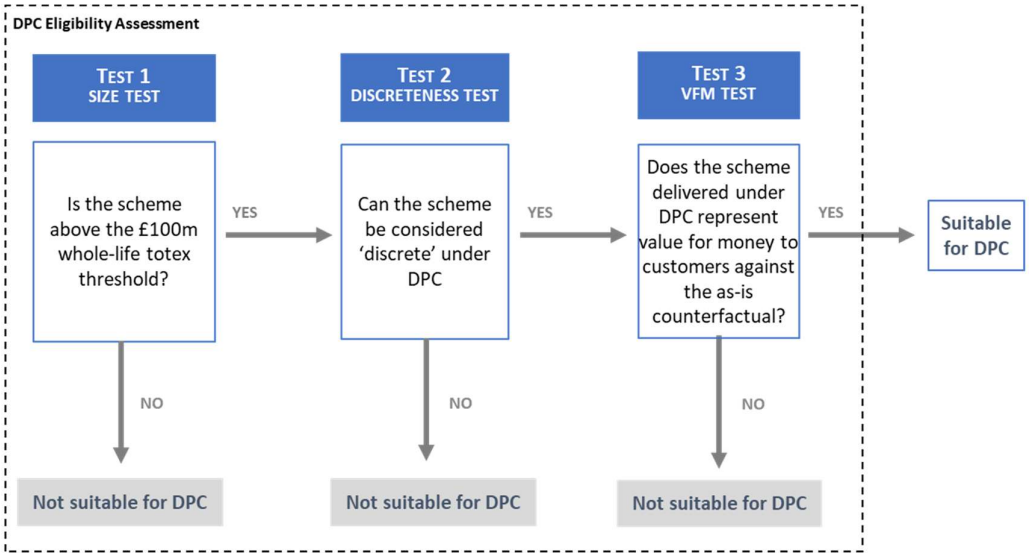


The Licence changes also provide for a DPC governance process, which includes a number of water company submissions to Ofwat: initiating the project (Strategic Outline Case); before starting procurement (Outline Business Case); and before agreeing the contract with the CAP (Full Business Case). There is no fixed timetable to the governance process and the timings will change depending on the point in a project's lifecycle it is put out to tender (see section 5.3).

Ofwat set out the criteria for assessing schemes for DPC in their guidance on what constitutes an eligible DPC project.[11] The assessment is in three stage, as shown in Figure 9.

[11] Delivering Water 2020: Our methodology for the 2019 price review Appendix 9: Direct procurement for customers

Figure 9 - Ofwat methodology for assessing schemes for DPC



Below we set out our current assessment of the identified options' suitability for DPC. The conclusions are relevant at Gate 2, but if there is any change to the technical solutions and costs these would have to be revisited.

3.1.1 Test 1: Size

The size test aims to determine which options pass the £100m[12] threshold for total expenditure (totex). At Gate 1, an initial size test was undertaken on the basis of the capex estimates available at the time. Below we have updated the size test to reflect current estimates of totex[13] over the assumed length of any CAPA[14] used in the value for money analysis (mid case, see Appendix A2).

Table 8 - GUC, Minworth, and ST Sources size test

Scheme	Option	Project totex	Size test recommendation
1. Grand Union Canal SRO	1.1 All (57)	£377m	Above the size threshold
	1.2 All (115)	£729m	Above the size threshold
	1.3 All excl. canal (57)	£286m	Above the size threshold

[12] Ofwat's consultation on the PR24 methodology ("Creating tomorrow, together: consulting on our methodology for PR24", (July 2022), Appendix 5) proposed that the size threshold be increased to £200m totex. If adopted, and applied to the identified options, this threshold would change the results for 2.6 and 3.1. For 2.6 in particular, which is currently taken forward as potentially suitable for DPC, this would need to be further considered.

[13] The cost data used in this report was provided on 24 May 2022.

[14] Ofwat's consultation refers to the threshold being applied to project totex. If, instead, totex was calculated over the asset life then option 1.8 would be over the £100m threshold but below the £200m threshold. Option 1.8 is currently not taken forward for reasons of size, but this would need to be further considered once the approach is confirmed.

Scheme	Option	Project totex	Size test recommendation
	1.4 All excl. canal (115)	£497m	Above the size threshold
	1.5 Southern assets (57)	£234m	Above the size threshold
	1.6 Southern assets (115)	£417m	Above the size threshold
	1.7 Atherstone transfer (57)	£52m	Below the size threshold
	1.8 Atherstone transfer (115)	£80m	Below the size threshold
2. Minworth Reuse SRO	2.1 GUC (57)	£242m	Above the size threshold
	2.2 GUC (115)	£426m	Above the size threshold
	2.3 GUC + Atherstone (57)	£294m	Above the size threshold
	2.4 GUC + Atherstone (115)	£506m	Above the size threshold
	2.5 STT (all)	£314m	Above the size threshold
	2.6 STT (pipeline)	£180m	Above the size threshold
3. ST Sources SRO	3.1 Treatment	£168m	Above the size threshold
	3.2 Treatment and pipeline	£205m	Above the size threshold
	3.3 Pipeline	£37m	Below the size threshold

The assessment suggests all the potential options for the GUC scheme would pass the £100m totex threshold except for the Atherstone pipeline (and associated assets) on a standalone basis. For Minworth, all options are considered to pass the threshold. For ST Sources, the assessment suggests that the options will meet the threshold, except for the pipeline on a standalone basis.

3.1.2 Test 2: Discreteness

The discreteness test considers the implications of a third party (the CAP) interacting with existing assets and operations. In the context of RAPID, we assume that schemes may impact more than one party and have interactions with a number of stakeholders.

The involvement of multiple parties adds complexity to the discreteness assessment, compared to a DPC project where a single water company appoints a CAP to undertake work within its own region for the benefit of its own customers.

For example, a larger number of stakeholders increases the number of interfaces, each of which needs to be considered and balanced against the others. Further work to explore the interaction of multiple stakeholders would be required at subsequent Gates.

In order to assess ‘discreteness’ consistently and fairly, schemes are evaluated against six criteria developed for the PR19 submission which are considered to address key characteristics that Ofwat noted impact discreteness (see Table 9). Each scheme is then assessed against the six evaluation criteria based on their technical characteristics and graded for their discreteness as either “High”, “Medium”, or “Low”.

Table 9 - 'Discreteness' criteria

Discreteness criteria	Considerations	Scoring
1. Physical asset location	Is the scheme an extension to an existing asset or a new asset constructed on a separate site? Does the asset have its own function or is it highly integrated with current processes of stakeholders? Does the construction impact the operation of existing assets?	High: stand alone separable asset Medium: minimal integration with existing site Low: highly integrated non-separable
2. Interfaces	Does the asset have interfaces with one or more water companies' wider networks? If so, is it an information or physical interface with one or multiple assets and parties? Is any sensitive information, customer data involved requiring robust security and confidentiality arrangements?	High: limited physical and non physical interfaces Medium: multiple interfaces Low: multiple complex interfaces with one to many relationships
3. Process	For similar type assets are raw materials and energy sourced centrally or locally? Is there an automated control over the asset and if so, is it run centrally or locally? Are resources shared with the wider operations? Does the operation require multi-skilled labour? Is the asset an explicit process stage with a clear input and output?	High: operate efficiently on standalone basis with limited need for wider network interaction Medium: operate efficiently on standalone basis/requires co-ordination with wider network Low: inefficient on standalone basis /requires high degree of co-ordination with wider network
4. Impact on service delivery	Does the service delivery impact any water company's statutory and performance obligations (e.g. ODIs)? If so, does it have an impact on quality or reliability metrics? Is the asset part of the water or the wastewater value chain? Does the operation of the asset directly impact customers? Is impact of asset failure well understood?	High: limited indirect impact on incumbent(s) operations and outputs Medium: impacts directly on incumbent(s) end customers and obligations Low: high impact directly on end customer and incumbent's obligations
5. Flexibility	Is the asset's usage likely to change over time? How likely is it that the asset becomes stranded or underutilised over time? Is the asset's operation scalable? Are there alternative usage options for the asset available? Can the operation be easily adapted to changing needs?	High: predictable asset's usage Medium: operation is scalable and adaptable to changing needs Low: no flexibility in operation and no alternative usages of the asset
6. Control	Is the asset needed for the day-to-day operation? Does the asset have a frequent interaction with the wider network? Is the asset required for resilience purposes? Can the contracting arrangements be designed efficiently and effectively? How comfortable water companies are to give responsibilities for resilience to 3rd parties?	High: resilience asset with limited interaction with the wider network Medium: limited interaction needed for the operation of the wider network Low: frequent interaction with the wider network on a day to day basis

Against each of the criteria, schemes are assessed as "High" will receive 3 points, "Medium" 2 points and "Low" 1 point. Only those schemes that receive 10 or more points as part of the discreteness

assessment will be recommended for further assessment and projects scoring below 10 will be considered to be insufficiently discrete for the purpose of DPC delivery.[15]

The table below sets out the results of the discreteness test for each option, with the full analysis attached in appendix A1.

Table 10 - GUC, Minworth, and ST Sources discreteness test

Scheme	Option	Discreteness test recommendation
1. Grand Union Canal SRO	1.1 All (57)	Not discrete
	1.2 All (115)	Not discrete
	1.3 All excl. canal (57)	Not discrete
	1.4 All excl. canal (115)	Not discrete
	1.5 Southern assets (57)	Discrete
	1.6 Southern assets (115)	Discrete
	1.7 Atherstone transfer (57)	Discrete
	1.8 Atherstone transfer (115)	Discrete
2. Minworth Reuse SRO	2.1 GUC (57)	Not discrete
	2.2 GUC (115)	Not discrete
	2.3 GUC + Atherstone (57)	Not discrete
	2.4 GUC + Atherstone (115)	Not discrete
	2.5 STT (all)	Not discrete
	2.6 STT (pipeline)	Discrete
3. ST Sources SRO	3.1 Treatment	Not discrete
	3.2 Treatment and pipeline	Not discrete
	3.3 Pipeline	Discrete

For those options that are considered not discrete, there are two key drivers:

[15] 10 points represents a “High” assessment in at least 2 of the 6 categories or “Medium” assessment in 4 of the 6 categories, suggesting a basis for contracting with a CAP.

- **Options 1.1, 1.2:** the works required on the canal network require significant modifications to existing assets and will need to be maintained and operated in a way that is consistent with the Trusts's obligations to other users of the waterways;

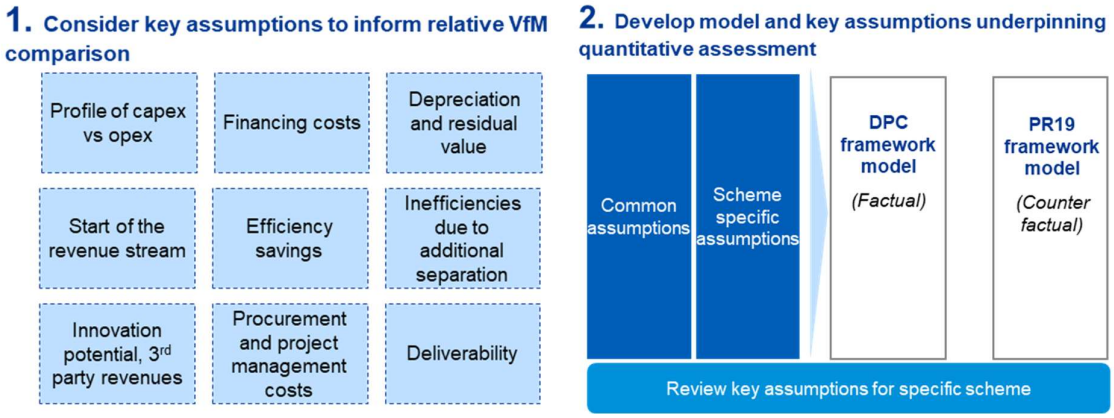
- **Options 1.3, 1.4:** excluding the canal creates two geographically separate sites for a third party to own and operate. This is likely to add complexity to construction and operation, and potentially doubles the number of interfaces that need to be managed. The third party becomes embedded in the water network; and

- **Options 2.1, 2.2, 2.3, 2.4, 2.5, 3.1, 3.2:** works required on existing sites, increasing interface risks and reducing potential synergies during construction and operations. In particular, potentially complex contractual arrangements would need to be developed to ensure the appropriate split of responsibilities is maintained.

3.1.3 Test 3: Value for Money

The value for money (VfM) test compares the total cost to customers of a scheme delivered through DPC versus a scheme delivered in-house by a water company under PR19 assumptions. Figure 10 sets out our approach to completing the VfM assessment.

Figure 10 - VfM Methodology

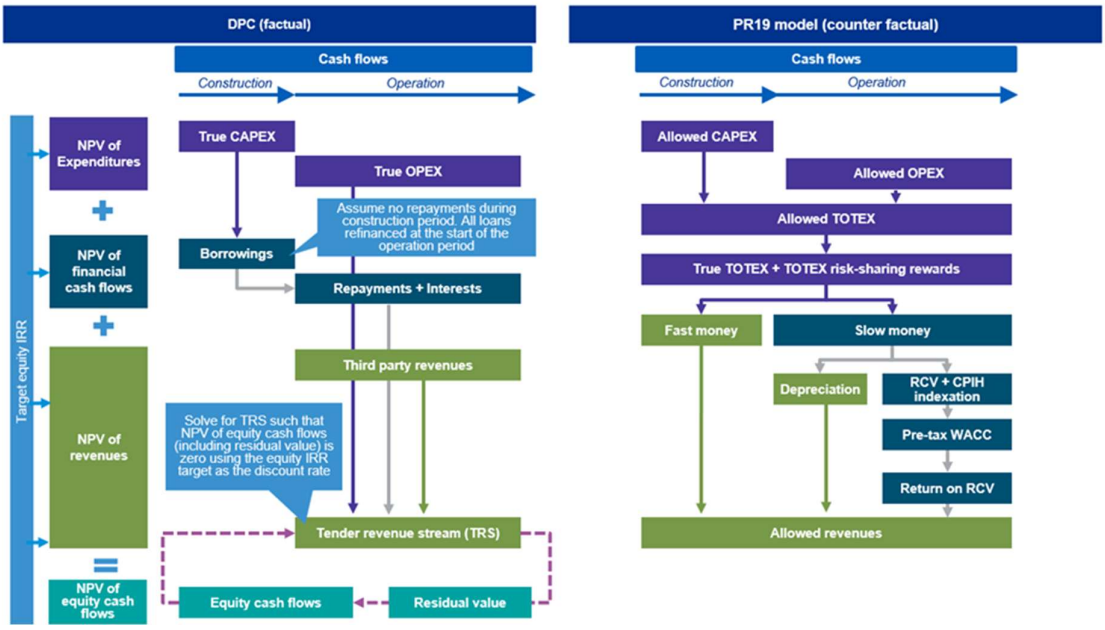


Central to the VfM assessment is a financial model to compare the Net Present Value (NPV) of required revenues under two alternative procurement routes, a factual and a counterfactual:

- **Factual:** a project finance type framework for delivery of the solution via DPC; and
- **Counterfactual:** delivery of the option in-house under a regulatory price control framework.

The mechanics of the financial model is set out in Figure 11 below.

Figure 11 - VfM financial model calculations



In the DPC modelling, depending on the length of the contract compared to the asset life, there may be a lump sum payment to the CAP when the asset is taken in-house. The lump sum payment is based on the depreciated and indexed value of the asset (calculated assuming straight-line depreciation and CPIH indexation respectively). From the point the asset is transferred in house, the cost to customers follows the counter factual approach.

There are two types of model inputs required to complete the analysis, common inputs and option specific inputs, as shown in the Table 11 below.

Table 11 - VfM financial model main inputs

Common inputs	Option specific inputs
▪ Fixed inputs in the model, underpinning DPC and PR19 frameworks and resulting profiles ▪ Depreciation ▪ Indexation ▪ Time horizon ▪ PV discount rate ▪ Cost to customer commencement	▪ Option specific inputs: ○ Opex ○ Capex ○ Construction period ○ Asset life ▪ The same option specific inputs will be used for DPC and PR19 framework assumptions

Cost of capital assumptions under the DPC model are based on Ofwat's standard assumptions for debt margin's and reflects the current market-based rates. The counterfactual (PR19) financing costs use Ofwat's Final Determination cost of capital for PR19. In general, lower costs of financing benefit customers under the DPC model, unless DPC is subject to limitations on gearing.

Ofwat's standard assumptions are also used for operating and capital efficiencies under DPC as well as additional DPC costs such as contract management, procurement and bidder costs. Any net capex and opex savings translate into greater value to customers in present value terms.

Table 12 below sets out key modelling inputs as per Ofwat's standard assumptions[16] which we would expect to use for the completion of the VfM assessment:

Table 12 - VfM financial model key assumptions

Key input assumptions	Item	DPC (Factual)	In-house (Counterfactual)
Customer payments	Value	Determined by CAP contract payments and Appointee costs	Determined by Allowed Revenues from PR framework
	Timing	From first payment by customers which would usually be expected after asset completion. If improved contractual terms are identified with earlier payments, then these should be considered.	From first payment by customers which would usually be when the appointee starts collecting from customers as per its business plan 'allowed revenue' profile.
Contract period	Length	Mid-case 25 years, Lower-case 20 years, Upper-case 50 years	n/a
PV calculation	Period	From the start of the customer payments until the end of the asset life (or until there is no difference in asset value, maintenance and finance costs).	
	Discount rate	Discount rate of 3.5% real decreasing overtime (Based on HM Treasury Green Book Supplementary Guidance: discounting (3.5% 0-30 years, 3.0% 31-75 years, 2.5% 76-125 years))	
Indexation		CPIH	CPIH
Financing cost	Cost of debt	Construction: forward Libor 6m swap + Margin (220bsp – 240bsp) Operation: forward Gilt / Libor 6m swap + Margin (120bsp – 140bsp) Amortising bond: forward Libor 6m swap + Margin (120-140bps) RCV bullet repayment: forward Gilt / Libor 6m swap + Margin (120bsp –140bsp)	Wholesale allowed return on capital 2.92% (vanilla CPIH real) As per Ofwat's Final Determinations
	Cost of equity	Equity IRR (Real) 8% (Upper case 7%, lower case 10%)	
	Gearing	Mid case 85% (Upper case 90%, lower case 80%) after asset completion	As per Ofwat's notional gearing of 60%
Asset depreciation	Method	Straight line or as per company policy for asset type, the treatment should be consistent between DPC and in-house deliver.	
	Depreciation Rate	Mid-case - As per company policy for this asset type Lowercase +25% faster company policy rate	As per company policy for this asset type
Cost	Capex efficiency saving	Mid case 10% (upper case +15%, lower case 5%)	
	Opex efficiency saving	Mid case 10% (upper case +15%, lower case 5%)	n/a
	Additional bidder costs	Additional bidder costs of 2% of capital spend (Upper case 1%, lowercase 3%)	n/a
	Procurement	Procurement costs of 1% of capital spend (uppercase 0.5%, lowercase 2%)	n/a

[16] Ofwat, 'Anglian Water: Direct procurement for customers detailed actions', 2019

Key input assumptions	Item	DPC (Factual)	In-house (Counterfactual)
	Management	Contract management costs £150k per annum (lowercase £300k per annum for high operational interaction solutions)	n/a

The VfM financial model produces the following outputs:

- An illustrative representation of a transfer bridge presenting how each key value driver impacts the NPV costs of delivering the scheme under DPC compared to PR19 framework;
- Quantitative results of the proposed solution under the base case assumptions; and
- Sensitivity analysis of the NPV costs under both models to determine how changes to the equity IRR and DPC costs efficiencies will impact the outcome of the base case model.

Overall, the results are primarily driven by three effects: the lower costs of debt under the DPC model; the assumed capex and opex saving under DPC; and the net effect of the additional procurement costs under the two models relative to the size of the option.

The table below sets out the results of the value for money test for each option, with the full analysis attached in appendix A2.

Table 13 - GUC, Minworth, and ST Sources value for money test

Scheme	Option	VfM test recommendation	% difference [DPC < PR19]
1. Grand Union Canal SRO	1.1 All (57)	Currently VfM via DPC	16.00
	1.2 All (115)	Currently VfM via DPC	16.15
	1.3 All excl. canal (57)	Currently VfM via DPC	15.08
	1.4 All excl. canal (115)	Currently VfM via DPC	14.13
	1.5 Southern assets (57)	Currently VfM via DPC	13.79
	1.6 Southern assets (115)	Currently VfM via DPC	13.17
	1.7 Atherstone transfer (57)	Currently VfM via DPC	2.55
	1.8 Atherstone transfer (115)	Currently VfM via DPC	6.24
2. Minworth Reuse SRO	2.1 GUC (57)	Currently VfM via DPC	13.31
	2.2 GUC (115)	Currently VfM via DPC	14.35
	2.3 GUC + Atherstone (57)	Currently VfM via DPC	15.47
	2.4 GUC + Atherstone (115)	Currently VfM via DPC	17.48
	2.5 STT (all)	Currently VfM via DPC	19.63
	2.6 STT (pipeline)	Currently VfM via DPC	17.76
3. ST Sources SRO	3.1 Treatment	Currently VfM via DPC	14.48
	3.2 Treatment and pipeline	Currently VfM via DPC	15.44
	3.3 Pipeline	Currently not VfM via DPC	-3.50

Currently, only the ST Sources pipeline to Deerhurst is not considered VfM for delivery via DPC. This is principally because of its size relative to the fixed costs of procurement.

3.1.4 Conclusions

The table below summarises the results of the tests for DPC for each option:

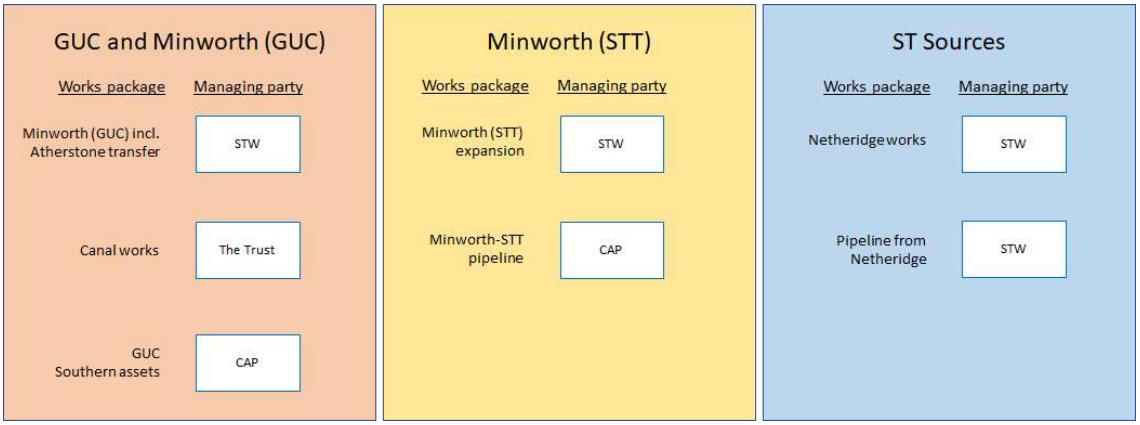
Table 14 - DPC assessment conclusions

Scheme	Option	Size	Discreteness	VfM	Overall
1. Grand Union Canal SRO	1.1 All (57)				Not suitable for DPC
	1.2 All (115)				Not suitable for DPC
	1.3 All excl. canal (57)				Not suitable for DPC
	1.4 All excl. canal (115)				Not suitable for DPC
	1.5 Southern assets (57)				Potentially suitable for DPC
	1.6 Southern assets (115)				Potentially suitable for DPC
	1.7 Atherstone transfer (57)				Not suitable for DPC
	1.8 Atherstone transfer (115)				Not suitable for DPC
2. Minworth Reuse SRO	2.1 GUC (57)				Not suitable for DPC
	2.2 GUC (115)				Not suitable for DPC
	2.3 GUC + Atherstone (57)				Not suitable for DPC
	2.4 GUC + Atherstone (115)				Not suitable for DPC
	2.5 STT (all)				Not suitable for DPC
	2.6 STT (pipeline)				Potentially suitable for DPC
3. ST Sources SRO	3.1 Treatment				Not suitable for DPC
	3.2 Treatment and pipeline				Not suitable for DPC
	3.3 Pipeline				Not suitable for DPC

3.2 Work packages

Based on the results of the DPC assessment we have looked to narrow down and organise the options into a set of works packages for each scheme that maximise the amount of works delivered via a CAP. Note that the managing party may not directly finance the works. The alternative financing options are discussed in Section 4.1:

Figure 12 - Works packages for each scheme



We note that the works package for ST Sources may or may not include the pipeline from Netheridge (depending on the STT SRO conclusions), but in either case the DPC assessment suggests the works would all be managed by STW.

For work packages that are not delivered through DPC, we would expect the ownership of the asset to remain with the relevant managing party. However, for work packages delivered under DPC, the ownership of the asset will initially sit with the CAP. The ownership of the asset will then, by default, transfer to the CAP's contract counterparty at the end of the contract. Below we consider which party is best placed to appoint and contract with the CAPs identified above, and which will therefore potentially become the eventual owners of the assets.

3.3 CAP counterparties

At Gate 1 we set out three alternative arrangements for appointing and contracting with the CAP:

- The water company whose customers receive water supplied by the scheme (the **Beneficiary**);
- The water company who is supplying the water (the **Provider**); and
- The Beneficiary and Provider jointly (a **Joint Venture**).

Since Gate 1, RAPID has proposed two additional potential models for appointing and contracting with the CAP:[17]

- **Third Party:** under this option, a third-party specialising in procurement would run the tender. However, as RAPID note, this would still require a water company to contract with the CAP. This option is not yet fully developed and in its current form is a sub-option of those identified above. As such, we will continue to keep under review and potential consider at a later date where relevant; and

[17] RAPID, 'The regulatory and commercial framework for strategic water resource solutions – a consultation', (December 2021)

- **Hybrid:** under this option, either the Beneficiary or Provider would take the lead, but the other would have a contractual involvement with the CAP. This option could be considered a sub-option of the Joint Venture, with an alternative allocation of responsibility. As such, we will consider this option where the Joint Venture approach is preferred.

Below we review the Beneficiary, Provider and Joint Venture alternatives before applying then to the potential GUC (Southern) and Minworth-STT Pipeline CAPs.

Beneficiary appoints the CAP

Figure 13 - High-level DPC structure where the Beneficiary appoints the CAP (illustrative)

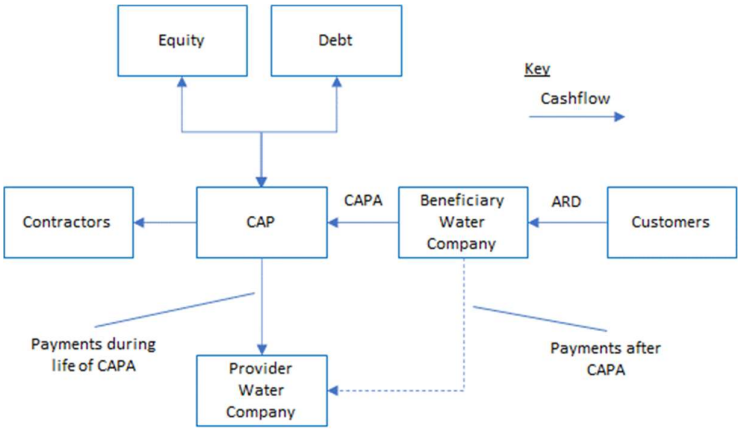


Figure 13 considers a situation where the Beneficiary appoints the CAP. In this instance, if the Provider is required to help facilitate the scheme (for example, by providing a licence to use a piece of land or undertaking enabling works) they could contract directly with the CAP to minimise the interface risk.

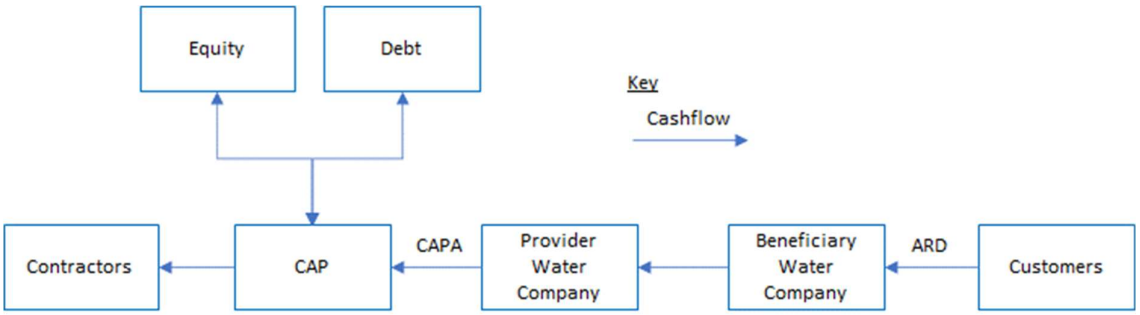
Once the CAP contract comes to an end, and the asset's ownership transfers to the Beneficiary, any arrangements the CAP has with the Provider would need to be novated to allow the service to continue.

This arrangement may be most appropriate where the Provider plays a relatively limited role in facilitating the works.

Provider appoints the CAP

Figure 14 below sets out an alternative where the Provider appoints the CAP instead of the Beneficiary.

Figure 14 - High-level DPC structure where the Provider appoints the CAP (illustrative)



In this case, the Beneficiary would then pay the Provider an amount to cover the cost of the CAP, plus any costs incurred by the Provider, directly. The Beneficiary would, in turn, recover the total cost from its customers.

Changes to the DPC licence conditions may be required to facilitate this. For example, the Provider would need a mechanism to recover costs from another water company (potentially as part of a Bulk Supply Agreement (BSA)) and the Beneficiary would need the benefit of an ARD that is not back-to-back with a CAPA, as currently envisaged.

Once the CAPA comes to an end, ownership of the asset would transfer to the Provider and the payment arrangement between the Beneficiary and Provider could continue – subject to any necessary

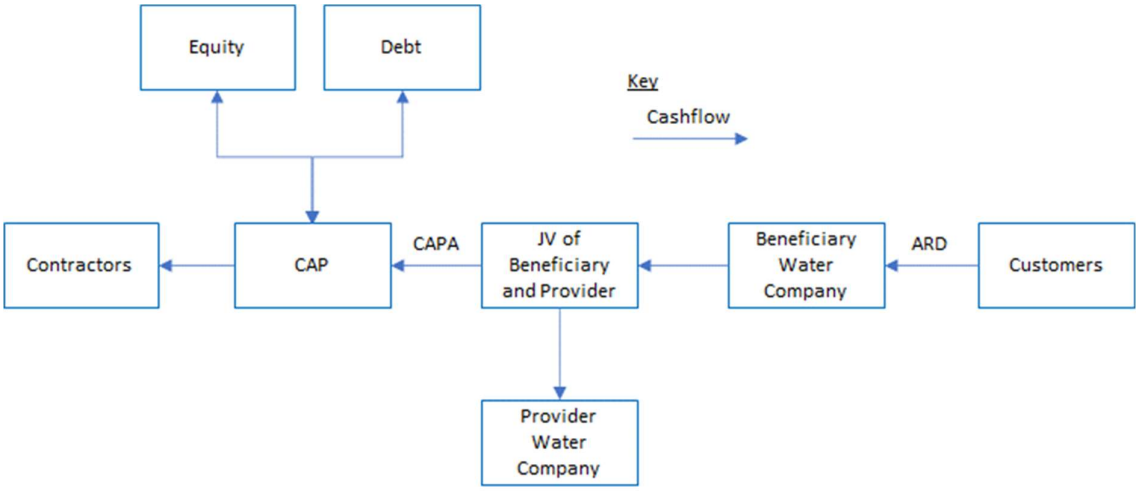
adjustments. Clarity would be required on how price controls for the two companies are updated to ensure risk is appropriately managed.

This arrangement may be most appropriate where the Provider plays a significant role in facilitating the works, which the CAP may be unable or unwilling to manage.

Joint Venture (JV) appoints the CAP

Figure 15 sets out an arrangement where the Beneficiary and Provider jointly appoint the CAP through a JV. The JV could provide the CAP with any necessary licences and permits and undertake any required enabling works.

Figure 15 - High-level DPC structure where a JV appoints the CAP (illustrative)



Costs incurred by the CAP and the Provider in facilitating the scheme would still need to be recovered from Beneficiary customers, which may again require changes to the ARD. Payments from the Beneficiary to the Provider may potentially be included in any BSA but would be separate from payments to the CAP via the JV.

At the end of the CAPA, the ownership of the assets could be shared between the water companies, potentially in a proportion to reflect the split in costs incurred by the CAP and the Provider in delivering the asset.

This arrangement may be most appropriate where the Provider plays a significant role in facilitating the works, which the CAP may be unable or unwilling to manage and the Provider is unable or unwilling to sit in between the Beneficiary (which benefits from the ARD) and the CAP.

3.3.1 Conclusions on the CAP counterparty

Below we set out the how the alternative models for appointing the CAP may apply to the two CAPs under considerations: GUC (Southern) and Minworth-STT Pipeline.

GUC (Southern)

In assessing who should appoint the CAP for the GUC (Southern) works, we considered:

- The works are for the benefit of AfW customers;
- The assets connect into the AfW network at one end, and, through a single abstract point, to the canal network at the other; and

- There is therefore no requirement for STW, or any water company other than AfW, to help deliver the works package.

As such, it is recommended that the Beneficiary of the GUC (Southern) works, AfW, appoint the CAP.

Minworth (STT) Pipeline

In assessing who should appoint the CAP for the Minworth (STT) works, we considered:

- The works are for the benefit of customers of water companies making use of the STT SRO;
- The assets connect into the Minworth WwTW owned by STW at one end, and the River Avon at the other; and
- The assets sit entirely within the STW region.

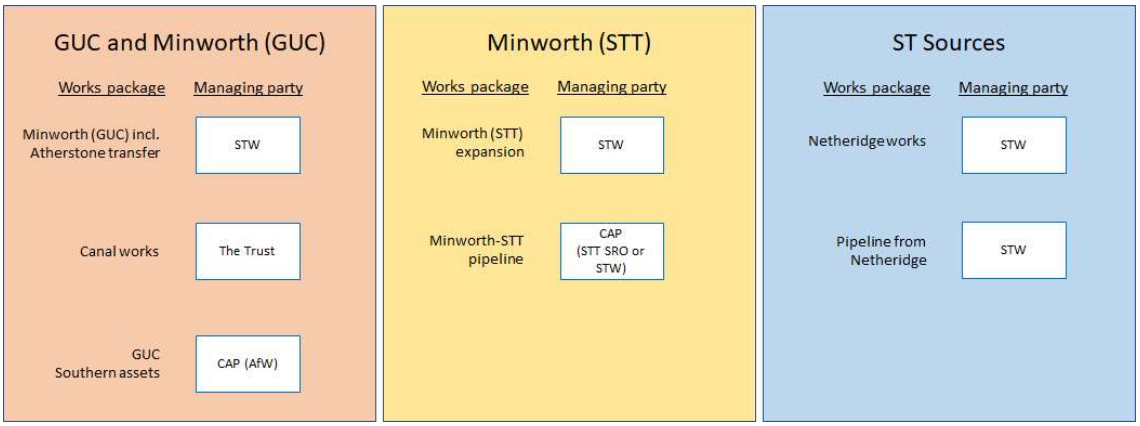
There is a potential trade-off between a streamlined financial structure or simplified set of operational arrangements. The following options should be further considered at Gate 3 alongside the STT SRO Gate 2 conclusions:

- The principal Beneficiary of the Minworth-STT Pipeline, to be identified by the STT SRO, appoints the CAP. While there may be multiple water companies taking supply from Minworth using the STT system, as acknowledged by the STT SRO, the CAP is likely to look to a single source of revenue. While the principal Beneficiary will need to recover part of the payment to the CAP from other Beneficiaries, the principal Beneficiary has the benefit of an ARD for at least a portion of the cost; or
- The water Provider, STW, appoints the CAP. While STW would have to recover payments to the CAP from the Beneficiaries, this may minimise interfaces and produce operational synergies.

Summary

The figure below updates the arrangement of work packages to include the recommended contract counterparty for each CAP:

Figure 16 - Recommended delivery party for each works package (incl. CAP contract counterparty)



3.4 Assessment for SIPR

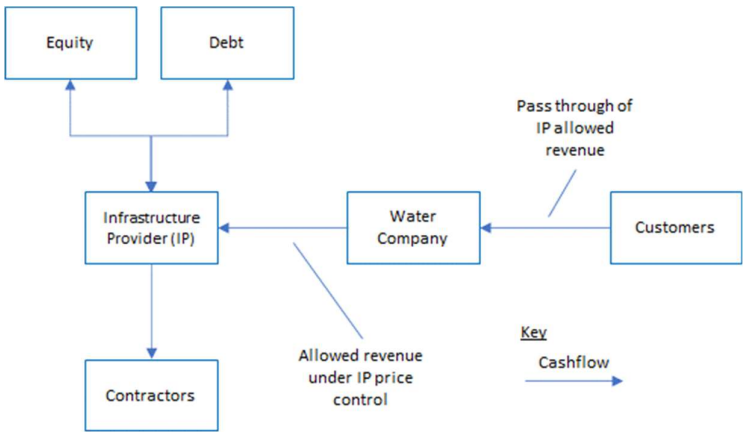
RAPID has requested that, where a solution is considered eligible for DPC, consideration is given as to whether it may be more suitable for delivery under a "licensing model" – as per the Thames Tideway Tunnel (TTT).[18]

TTT was procured under the Specified Infrastructure Projects Regulations (SIPR), which provides for the creation of a licenced infrastructure provider (IP) to deliver the works where:[19]

- The project is 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.

By appointing an IP instead of a CAP, the water company is not required to enter into a CAPA and has none of the associated liabilities. The IP would receive a revenue allowance under its own price control, and while the IP is likely to collect revenue via the water company's billing of its customers, this is expected to be on a pass-through basis with no payment obligation on the water company.

Figure 17 - High-level Infrastructure Provider structure (illustrative)



In assessing whether SIPR should be applied to the TTT, the Secretary of State looked at a number of criteria to determine whether the size and complexity of the project threatened Thames Water's ability to provide services to customer.[20] These considerations included the scale of the project, along with the construction risk, management risk and regulatory risk Thames would be taking on.

Considerations with respect to TTT were between in-house delivery and SIPR. While under DPC the risks may already be largely passed on to the CAP (subject to the CAPA risk allocation), the scale of the scheme remains relevant given the payment obligations assumed by the water company appointing the CAP.

The capex of the TTT was calculated as 30% of Thames Water's RCV, and it was concluded that at this level it was likely to impact the company's credit rating if delivered in house. Under DPC, while the

[18] RAPID, "Strategic regional water resource solutions guidance for gate two", February 2022 (p.25)
[19] The Water Industry (Specified Infrastructure Projects) (English Undertakers) Regulations 2013
[20] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/317558/TTTP-reason-notice-ldmsig.pdf

water company is not directly financing the capex, credit agencies may look through the CAP to the counterparty's payment obligations. This may mean the water company's credit rating is impacted.

In the table below, for each potential DPC scheme, we set out the capex and potential annual CAP payments and compare these to the relevant water company's asset base and turnover. For the GUC southern assets, the assessment includes a scenario including the capex of the canal works. This reflects a potential financing structure outlined in Section 4.1

Table 15 - Size of potential work packages relative to owner's financials

Works package	Relevant water company	Asset size			Cashflow impact		
		Capex	Water company RCV	% of water company RCV	Annual CAP payment	Water company turnover	% of water company turnover
GUC (Southern) 57 (Opt 1.5)	AfW	£88m	£1.47bn	6%	£8m	£287m	3%
GUC (Southern) 115 (Opt 1.6)	AfW	£136m	£1.47bn	9%	£15m	£287m	5%
GUC (Southern) 57 with canal works capex	AfW	£130m	£1.47bn	9%	£9m	£287m	3%
GUC (Southern) 115 with canal works capex	AfW	£266m	£1.47bn	18%	£16m	£287m	6%
Minworth (STT) pipeline	STW	£177m	£10.13bn	2%	£6m	£1,943m	0%
	STT SRO	Principal Beneficiary to be confirmed with STT SRO					

Applying the 30% threshold used in TTT, none of the works packages identified as potentially suitable for delivery through DPC would appear suitable for SIPR. In addition, Ofwat has indicated that the threshold should take into account the construction risk of the asset. Each of the assets considered above are likely to be less complex than TTT (which involves deep tunnelling under central London) and the size threshold may therefore be more than 30% in this instance.

However, there may be other potential reasons for considering SIPR. The schemes considered above involve multiple water companies and non-water companies, whereas TTT only involved TW. These schemes will require BSA arrangements and SIPR may be considered as a potential delivery route option to help address the additional level of complexity. Further, some schemes involve the treatment of potable water where regulators, such as the DWI, may take comfort from having a licenced (rather than a contracted) entity responsible.

We will continue to assess the appropriateness of SIPR as part of Gate 3 activities – taking into account Ofwat's warning of the potential for SIPR to impact the scheme's timeline, due to potential changes in legislation required to facilitate the SIPR route.

3.4.1 Adjustments for SIPR

SIPR can be considered as a variant of DPC – a competitively appointed third party undertaking the design, build, finance, operation and maintenance of an asset for the benefit of a water company's customers. The conclusions with respect to DPC are likely to equally apply to SIPR:

- Both the CAP and IP would expect to be constituted as an SPV, raising project finance to finance the works;
- Operationally, the CAP and IP would expect to receive instruction in the same way and face the same incentives around payment; and
- Contractually, the IP would expect to have a direct relationship with a water company in order to collect its allowed revenue.

For the purposes of this report, we therefore consider the financing, operational, and contractual issues primarily with respect to DPC. These arrangements would also apply under SIPR, replacing the CAP with an IP and the CAPA with a revenue recovery agreement (supported by the IP's licence).

4. Commercial and operational arrangements

In this section, we consider the financial, operational, and contractual arrangements that would support the delivery and ownership recommendations set out above.

We set out a range of alternative options for financing each works package and assess them based on the delivery incentives they produce, the risks they place on the relevant parties, and their potential impact on value for customers.

We consider how, once completed, the assets may be operated in a coordinated manner such that different owners of work packages within a scheme effectively communicate with each other and the scheme's Beneficiary.

Based on the preferred financing solution and operational considerations we set out a high-level contractual structure, identifying the type of agreements necessary to capture the arrangements.

Key conclusions:

- For the GUC and Minworth (GUC) scheme, a CAP would finance and operate the southern assets for the duration of the CAPA with AfW – as per the DPC framework. AfW would recover its payments to the CAP under an ARD.
- The CAP may also be best placed to finance and undertake the canal works – transferring them to the Trust on completion to operate and maintain alongside its existing assets. The Trust would need a separate agreement with AfW to recover its ongoing operating and maintenance costs and set service standards.
- STW would finance the Minworth (GUC) expansion works and connection to the canal network on balance sheet and use its supply chain to undertake the works. STW would require an agreement with AfW to recover its finance costs (along with O&M). This may be incorporated into a BSA, subject to confirming a BSA's applicability where the water is passing through the canal network. Otherwise, an alternative form of agreement would be required.
- In order to ensure water levels in the canal network remain balanced (within a certain tolerance), STW's discharge agreement and the CAP's abstraction agreement need to be linked and operated in a coordinated manner. This may be best achieved by a system operator.
- For Minworth (STT), a CAP would finance and operate the pipeline for the duration of the CAPA with either STW or the STT SRO principal Beneficiary as the contract counterparty. If the counterparty is the STT SRO principal Beneficiary, they could recover their payments to the CAP under its own ARD and from other Beneficiaries. If the counterparty is STW, an arrangement would need to be put in place with the STT SRO Beneficiaries to recover costs.
- STW would finance the Minworth (STT) expansion works on balance sheet and use its supply chain to undertake the works. STW would require an agreement with the STT SRO Beneficiary to recover its finance costs (along with O&M). This may be incorporated into a BSA, if applicable. Otherwise, an alternative form of agreement would be required.
- For ST Sources, STW would finance the Netheridge expansion works and connection to the STT on balance sheet and use its supply chain to undertake the works. STW would require an agreement with the STT SRO Beneficiary to recover its finance costs (along with O&M). This may be incorporated into a BSA, if applicable. Otherwise, an alternative form of agreement would be required.

4.1 Financing

Below we set out a range of options for financing the capex of each works package, along with current thinking as to the most appropriate party to raise finance based on three key drivers:

- For a delivery party, being required to raise finance (rather than being paid in milestone payments) will tend to increase the incentive to achieve completion. With any revenue potentially withheld until the service commences, and debt service payments to make, there is additional pressure to achieve scheduled completion;
- Some delivery parties will be better placed to raise finance than others, based on their prior experience and financial standing. For example, CAPs are established with the primary objective of raising finance to fund works and would be specifically structured to manage debt. Water companies are also, typically, experienced in raising debt finance to meet their investment requirements; and
- All the costs of a scheme are, ultimately, met by the customers of the Beneficiary water company. As such, the Beneficiary water company may look for a direct financial relationship with each of the work packages to enable it to better monitor and control performance.

For each scheme, we consider how these drivers may help determine where finance is raised.

4.1.1 GUC and Minworth (GUC)

Structure 1

Figure 18 – GUC and Minworth Financing – Structure 1

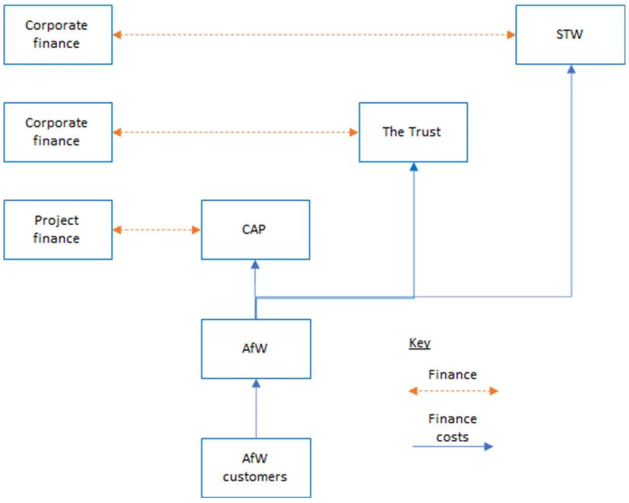


Figure 18 sets out a financing structure that may be expected to maximise the incentive to achieve target completion. Each delivery party raises finance for its' own works package and only receives revenue to meet the associated finance costs on service commencement.

However, The Trust, as a charity with limited existing borrowings, may not be well placed to finance its own works. The Trust's existing borrowing are c.£114m. With the canal works capex of £42-130m this would represent a substantial increase in its liabilities. Alternatively, the Trust could raise funds by issuing a bond, however, AfW would need to ensure that the financial liability would be covered.

Figure 19 and Figure 20 set out two alternative sources of finance for the Trust works – through the AfW and the CAP.[21]

[21] There is a potential variation where the STW works are also directly funded. However, this would reduce the completion inventive and there is no clear driver for adopting such an approach. There is also the potential for financing the canal works through STW. However, this may be expected to raise issues similar to financing through AfW but add additional complexity to the cost recovery given that STW customers are not the beneficiaries. These options are therefore currently excluded.

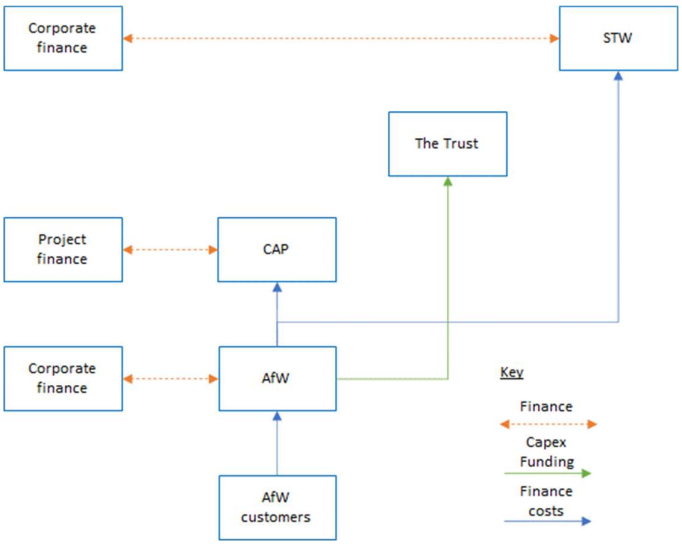
Structure 2

AfW could, instead of paying the finance costs of The Trust once service commencement is achieved, make capex payments on achieving certain milestones.

While this may weaken the completion incentive on The Trust, AfW would be able to control the payments and monitor performance directly as the Beneficiary water company. If AfW wanted to take more direct control over delivery of the works, there may be scope for using its AfW's supply chain to undertake the construction – The Trust adopting the assets once completed and providing operations and maintenance.

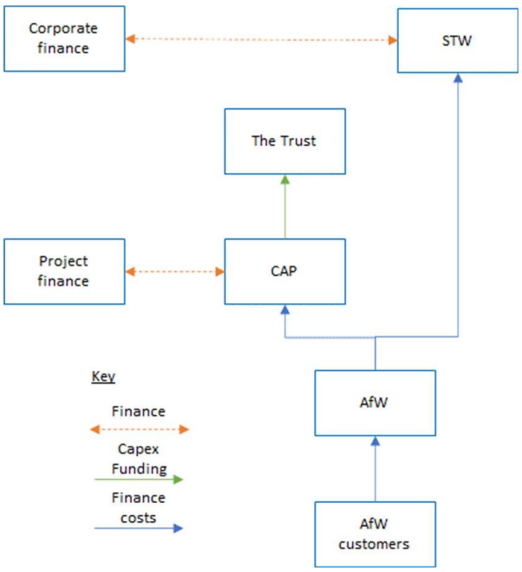
AfW would look to raise the cost of the works on balance sheet using its existing corporate finance programme.

Figure 19 – GUC and Minworth Financing – Structure 2



Structure 3

Figure 20 – GUC and Minworth Financing – Structure 3



Alternatively, as the CAP is committed to raising project finance to fund its own works, there is an option for the CAP to increase the amount of finance it raises in order to fund the works undertaken by the Trust, alongside its own. This approach would maximise the amount of funding raised off-balance sheet.

The CAP could pay The Trust milestone payments to undertake the works using its own contractors – in effect treating The Trust as a sub-contractor. As a sub-contractor, the CAP is likely to look for typical sub-contractor provisions from The Trust (potentially flowed down to its own contractors), including liquidated damages (LDs) in the event of delays to completion.

These LDs are likely to be sized based on the potential loss of revenue to the CAP, which may include revenue not only associated with the canal works but those of the GUC southern assets. Given the potential difference in scale between the canal works' contract and the associated LDs, contractors may be unwilling to enter into such an arrangement.

The concern with delay LDs may be somewhat reduced by the CAP using its own contractors to undertake the canal works – The Trust adopting the assets once completed and providing operations and maintenance. Given they are undertaking a larger works package, the CAP's contractors may be willing to take on the LDs associated with completion of the canal works.

However, the Trust would still need to facilitate the works, for example providing access to the CAP's contractors. The CAP would look to be protected from a failure by The Trust leading to a delay. As the Trust is unlikely to provide LDs in these circumstances, this may need to be managed by AfW, potentially by providing the CAP with relief from any penalties in the event of a delay caused by The Trust.

These options for funding work on The Trust's assets would need to be explored further at the next stage with The Trust and through market engagement with potential contractors and bidders.

The table below summarises the impact of each structure on risk, incentives, and value for customers:

Table 16 - Overview of GUC and Minworth Financing Structures

Structure 1	Structure 2	Structure 3
Risks:		
- Trust may not be in a position to raise capital to finance the works, or the cost of capital may be high. - One or more parties may be delayed in completion while others are available and require payments from AfW customers. - One or more parties may become unavailable while others are available and require payments from AfW customers.	- The cost of overall AfW finance is increased by its involvement with the canal works. The extent of this potential contagion may depend on AfW's level of involvement: if financing the work by the Trust's contractors, then contagion may be minimal; if the AfW's supply chain are undertaking the works, to the extent there are additional risks, there may be an impact on the cost of capital. - One or more parties may be delayed in completion while others are available and require payments from AfW customers. - One or more parties may become unavailable while others are available and require payments from AfW customers.	- The cost of overall CAP finance is increased by its involvement with the canal works. The extent of this potential contagion may depend on the CAP's level of involvement: if just financing work by the Trust's contractors, then contagion may be minimal; if the CAP contractors are undertaking the works, to the extent there are additional risks, there may be an impact on the cost of capital. - One or more parties may be delayed in completion while others are available and require payments from AfW customers. - One or more parties may become unavailable while others are available and require payments from AfW customers.
Incentives:		
- Construction: STW, The Trust and CAP incentivised to achieve completion to trigger revenue start. Additional LDs for impact of delay on other parts of the system to be considered, but may not be acceptable to market (CAP) or to Trust and STW given relative size of works packages to potential damages (i.e. payments to other parties by AfW customers). - Operation: CAP incentivised through payment	- Construction: STW, CAP incentivised to achieve completion to trigger revenue start. Less incentive on The Trust if receiving milestone payments from AfW. Alternative of AfW contractors undertaking the works on the canal may mitigate this. Additional LDs for impact of delay on other parts of the system to be considered, but may not be acceptable to market (CAP) or to The Trust (if undertaking the works) and	- Construction: STW, CAP incentivised to achieve completion to trigger revenue start. Less incentive on The Trust if receiving milestone payments from CAP. Alternative of CAP contractors undertaking the works on the canal may mitigate this. Additional LDs for impact of delay on other parts of the system to be considered, but may not be acceptable to market (CAP) or to The Trust (if undertaking the works) and

Structure 1	Structure 2	Structure 3
mechanism. Trust and STW incentive regime to be negotiated.	STW given relative size of works packages to potential damages (i.e. payments to other parties by the AfW customers). - Operation: CAP incentivised through payment mechanism. Trust and STW incentive regime to be negotiated.	STW given relative size of works packages to potential damages (i.e. payments to other parties by the AfW customers). - Operation: CAP incentivised through payment mechanism. Trust and STW incentive regime to be negotiated.
Value for customers:		
- Given the nature of the Trust, their cost of capital may be higher than a water company or CAP. This would need to be tested. - Three parties to coordinate. Delay LDs may be limited, exposing AfW customers to making payments when the system is not available.	- AfW cost of capital may be lower than the Trust's, to be tested. The Trust's contractors undertaking the canal works: - Milestone payments may reduce the incentive on the The Trust to achieve completion and expose AfW customers to finance costs when the system is not available. - Three parties to coordinate. Delay LDs may be limited, exposing AfW customers to making payments when the system is not available. AfW's supply chain undertaking the canal works: - Potential contagion of AfW cost of capital would need to be tested and net impact assessed. - Milestone payments may reduce the incentive on the supply chain to achieve completion. Available LDs on the canal works limited to those provided by the supply chain. - Two other parties to coordinate. Delay LDs may be limited, exposing AfW customers to making payments when the system is not available.	- CAP cost of capital may be lower than the Trust's, to be tested. The Trust's contractors undertaking the canal works: - Milestone payments may reduce the incentive on the The Trust to achieve completion. CAP unlikely to accept risk of Trust completion preventing revenue start, putting risk back on to AfW customers. - Three parties to coordinate. Delay LDs may be limited, exposing AfW customers to making payments when the system is not available. CAP contractors undertaking the canal works: - Canal works included in the competitive procurement process and may be expected to benefit from capex efficiency (Ofgem estimate of 10%) - Saving may be offset by potential contagion of CAP cost of capital. This would need to be tested and net impact assessed. - CAP incentivised to complete canal works as well as the southern assets in order to trigger revenue start. - One other party to coordinate. Delay LDs may be limited, exposing AfW customers to making payments when the system is not available.
Conclusion:		

Structure 1	Structure 2	Structure 3
Structure 3 (with CAP contractors undertaking the canal works) currently is preferred. Net impact on finance costs compared to Structure 1 and 2 will need to be tested, but this option: - May be expected to lead to a capex saving based on Ofwat assumptions (see Table 12); - Maximises incentive for completion; and - Minimises the amount of co-ordination with other parties		

4.1.2 Minworth (STT)

As set out in section 3.3.1, the counterparty to the CAP delivering the pipeline connecting the treatment works to the STT will need to be determined at Gate 3 alongside the STT SRO Gate 2 conclusions. In the structures considered below, the figures show a direct payment from STT SRO to the CAP as if the STT SRO principal Beneficiary is the counterparty. Should, instead, STW be the counterparty, then the finance cost payments would need to be routed via STW. However, as STT SRO is the Beneficiary of the scheme, these payments would need to be on a back-to-back basis, with no liability sitting with STW. As such, the CAP counterparty should not change the conclusions as to where financing is raised.

Structure 1

Figure 21 – Minworth (STT) Financing – Structure 1

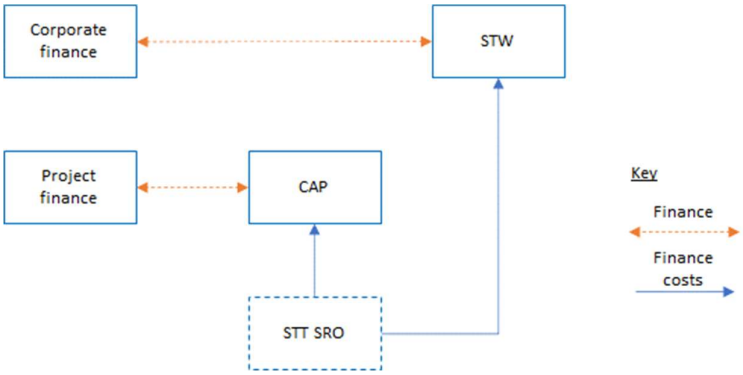


Figure 21 sets out a financing structure that may be expected to maximise the incentive to achieve target completion. Each delivery party raises finance for its' own works package and only receives revenue to meet the associated finance costs on service commencement.

The appropriate financing approach for Minworth (STT) will depend, to some extent, on the arrangements put in place by the STT SRO in financing its own works. While alternative arrangements may reduce the completion incentive, there may be other benefits that would be considered at the next stage in conjunction with the STT SRO. Potential alternative arrangements include those set out in Figure 22 and Figure 23.[22]

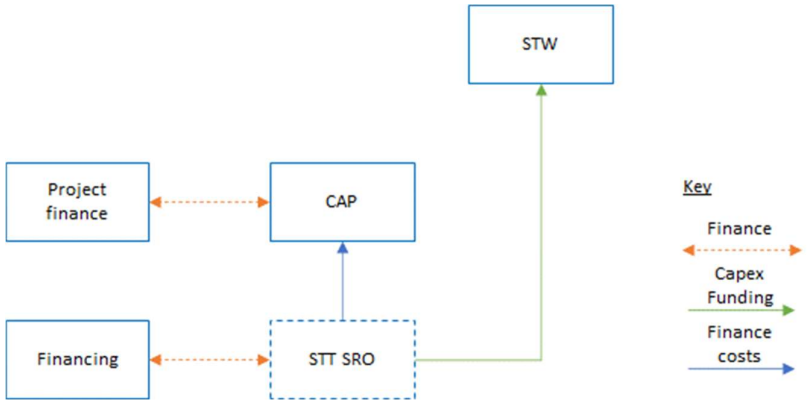
[22] Note, that whereas with the GUC and Minworth (GUC) scheme there may be scope for those financing the works on a third party's assets to also contract to undertake the work, this is unlikely in the case of expansion works on existing STW sites given the potential impact on ongoing operations.

Structure 2

In Figure 22, the STT SRO arranges additional financing, on top of amounts to fund its own works, to pay STW in milestone payments during construction.

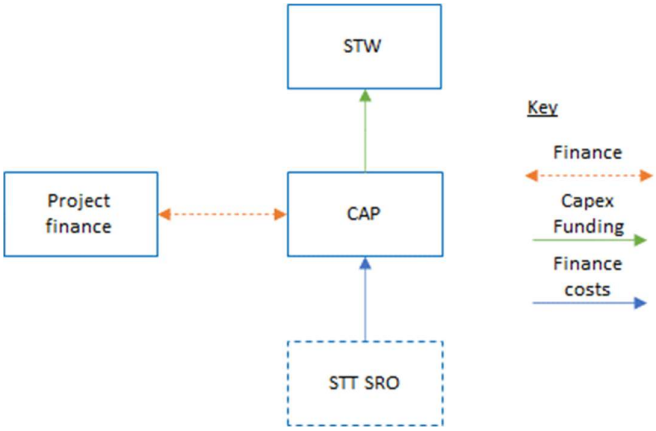
As the Beneficiary of the Minworth (STT) works, this approach may provide STT SRO with greater oversight during construction to the works being undertaken by STW, and potentially allow for more control over delivery.

Figure 22 – Minworth (STT) Financing – Structure 2



Structure 3

Figure 23 - Minworth (STT) Financing – Structure 3



In Figure 23, the CAP increases the amount of finance it raises in order to fund the works undertaken by STW alongside its own.

This approach would maximise the amount of funding raised off-balance sheet but may place financial pressure on the CAP. Funders are likely to try and ensure that the contractual arrangements and risk allocation (see the following section) protect the CAP from performance failures (such as delay) by STW, potentially by requesting delay LDs.

As the consequence of a delay may include the withholding of payment for both the Minworth expansion works and pipeline, these LDs may be disproportionate to the size of the STW works package. STW (or its contractors) may be unwilling to provide this level of guarantee.

The table below summarises the impact of each structure on risk, incentives, and value for customers:

Table 17 - Overview of Minworth (STT) Financing Structures

Structure 1	Structure 2	Structure 3
Risks:		
- One or more parties may be delayed in completion while others are available and require payments from STT SRO customers. - One or more parties may become unavailable while	- The cost of overall STT SRO finance is increased by its involvement with the STW works. The extent of this potential contagion may be limited if the relationship is restricted to financing.	- The cost of overall CAP finance is increased by its involvement with the STW works. The extent of this potential contagion may be limited if the relationship is restricted to financing.

Structure 1	Structure 2	Structure 3
others are available and require payments from STT SRO customers.	- One or more parties may be delayed in completion while others are available and require payments from from STT SRO customers. - One or more parties may become unavailable while others are available and require payments from from STT SRO customers.	- One or more parties may be delayed in completion while others are available and require payments from from STT SRO customers. - One or more parties may become unavailable while others are available and require payments from from STT SRO customers.
Incentives:		
- Construction: STW and CAP incentivised to achieve completion to trigger revenue start. Additional LDs for impact of delay on other parts of the system to be considered, but may not be acceptable to market (CAP) or STW given relative size of works packages to potential damages (i.e. payments to other parties by STT SRO customers). - Operation: CAP incentivised through payment mechanism, and STW incentive regime to be negotiated.	- Construction: Only CAP incentivised to achieve completion to trigger revenue start. Less incentive on STW if receiving milestone payments from STT SRO. Additional LDs for impact of delay on other parts of the system to be considered, but may not be acceptable to market (CAP) or STW given relative size of works packages to potential damages (i.e. payments to other parties by the STT SRO customers). - Operation: CAP incentivised through payment mechanism, and STW incentive regime to be negotiated.	- Construction: Only CAP incentivised to achieve completion to trigger revenue start. Less incentive on STW if receiving milestone payments from CAP. Additional LDs for impact of delay on other parts of the system to be considered, but may not be acceptable to market (CAP) or STW given relative size of works packages to potential damages (i.e. payments to other parties by the STT SRO customers). - Operation: CAP incentivised through payment mechanism, and STW incentive regime to be negotiated.
Value for customers:		
- STT SRO will have two other parties to coordinate. Delay LDs may be limited, exposing STT SRO customers to making payments when the system is not available.	- To be tested if STT SRO's cost of capital could be lower than the STW's. - Two other parties to coordinate. Delay LDs may be limited, exposing STT SRO customers to making payments when the system is not available.	- To be tested if CAP's cost of capital could be lower than the STW's. - Two other parties to coordinate. Delay LDs may be limited, exposing STT SRO customers to making payments when the system is not available.
Conclusion:		
Structure 1 currently is preferred. The completion incentives are maintained and any potential reduction in financing costs from the other structures are uncertain. With no changes to the contracting arrangements there is no potential reduction in the number of parties being coordinated.		

4.1.3 ST Sources

Structure 1

Figure 24 - ST Sources Financing – Structure 1

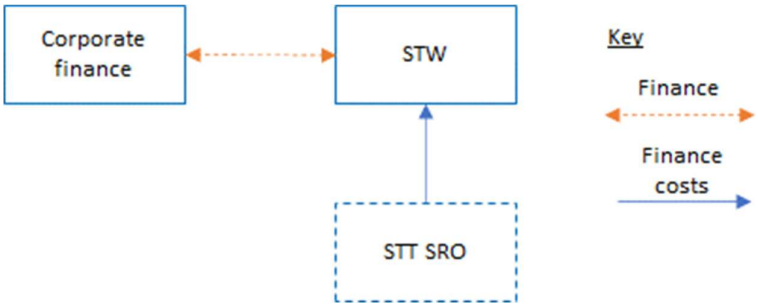


Figure 24 sets out a financing structure that may be expected to maximise the incentive to achieve target completion. Each delivery party raises finance for its' own works package and only receives revenue to meet the associated finance costs on service commencement.

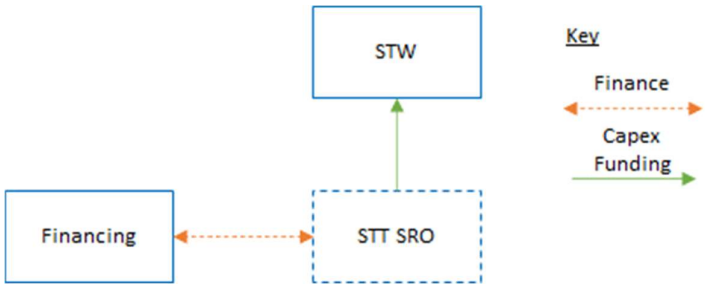
The appropriate financing approach for ST Sources will depend, to some extent, on the arrangements put in place by the STT SRO in financing its own works. While alternative arrangements may reduce the completion incentive, there may be other benefits that would be considered at the next stage in conjunction with the STT SRO.

Structure 2

A potential alternative arrangement may be for the STT SRO to arrange additional financing, on top of amounts to fund its own works, to pay STW in milestone payments during construction (see Figure 25).

As the Beneficiary of the ST Sources works, this approach may provide STT SRO with greater oversight during construction to the works being undertaken by STW, and potentially allow for more control over delivery.

Figure 25 - ST Sources Financing – Structure 2



The table below summarises the impact of each structure on risk, incentives, and value for customers:

Table 18 - Overview of ST Sources Financing Structures

Structure 1	Structure 2
Risks:	
- One or more parties may be delayed in completion while others are available and require payments from STT SRO customers. - One or more parties may become unavailable while others are available and require payments from STT SRO customers.	- The cost of overall STT SRO finance is increased by its involvement with the STW works. The extent of this potential contagion may be limited if the relationship is restricted to financing. - One or more parties may be delayed in completion while others are available and require payments from from STT SRO customers. - One or more parties may become unavailable while others are available and require payments from from STT SRO customers.

Structure 1	Structure 2
Incentives:	
- Construction: STW incentivised to achieve completion to trigger revenue start. Additional LDs for impact of delay on other parts of the system to be considered, but may not be acceptable to STW given relative size of works packages to potential damages (i.e. payments to other parties by STT SRO customers). - Operation: STW incentive regime to be negotiated.	- Construction: Less incentive on STW if receiving milestone payments from STT SRO. Additional LDs for impact of delay on other parts of the system to be considered, but may not be acceptable to STW given relative size of works packages to potential damages (i.e. payments to other parties by the STT SRO customers). - Operation: STW incentive regime to be negotiated.
Value for customers:	
- STT SRO will have one other parties to coordinate. Delay LDs may be limited, exposing STT SRO customers to making payments when the system is not available.	- To be tested if STT SRO's cost of capital could be lower than the STW's. - One other parties to coordinate. Delay LDs may be limited, exposing STT SRO customers to making payments when the system is not available.
Conclusion:	
Structure 1 currently is preferred. The completion incentives are maintained and any potential reduction in financing costs from the other structure is uncertain. With no changes to the contracting arrangements there is no potential reduction in the number of parties being coordinated.	

4.2 Operation

In this section we consider how the different owners of the work packages within a scheme may communicate effectively to ensure the coordinated operation of the scheme as a whole.

In doing so, we assume that the initial instruction for water resource will come from the Beneficiary of the scheme. There may then be, broadly, two routes for passing instructions to other relevant parties:

- Through a series of **bilateral** communications between each party as required; or
- Through a **system operator** relaying instructions to all parties.

Below we set out some initial consideration for each scheme. These would be developed at a later stage.

4.2.1 GUC and Minworth (GUC)

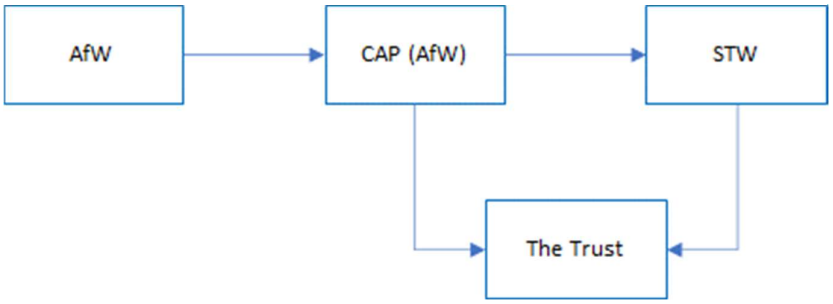
The GUC and Minworth (GUC) scheme is expected to provide a baseload supply of water to AfW with the ability to increase or decrease within a range. The range within which the transfer operates is constrained by the operational requirements of the canal, where The Trust has a duty to maintain a navigable waterway[23].

[23] Navigable canals and rivers, together with bridges, tunnels, aqueducts, docks and reservoirs, along with museums and archive collections

In addition, The Trust will require that abstraction by the CAP and discharge by STW are broadly balanced, subject to certain allowances. Within these operating constraints, the canal network is then potentially able to operate automatically – with pumps controlled by a SCADA system working to maintain water levels.

Based on this, Figure 20 sets out the potential flow of bilateral instructions between parties.

Figure 26 - Flow of operating instructions (bilateral)

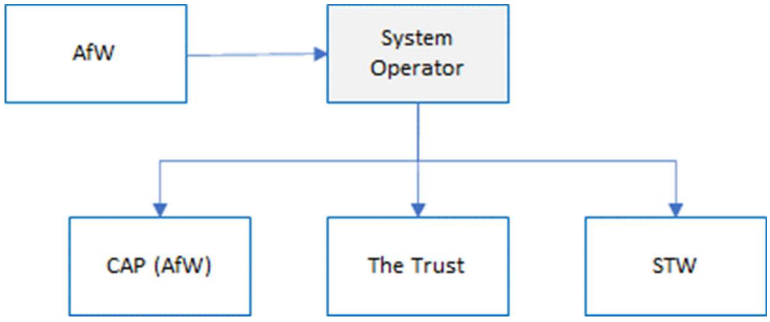


Under this arrangement, following AfW's request to the CAP for water, the CAP would need to instruct STW to match its forecast abstraction with a discharge. Both the CAP and STW would need to inform the Trust of their intentions who can confirm the proposed actions are within the required operating parameters.

While this system of instructions may work in most eventualities, there is a concern as to how it would respond to disruptions in any part of the chain – for example a temporary restriction on abstraction or discharge, or the Minworth WwTW output being unable to match AfW's demand. Where instructions cannot be followed or need to be modified a central clearing house, or System Operator, may be required.

Figure 27 sets out the potential flow of instructions to parties via a System Operator (SO).

Figure 27 - Flow of operating instructions (System Operator)



The SO would be able to relay instructions from AfW to all the parties involved. If a party is unable to follow an instruction, then the SO can be informed. The SO is able to modify all the related instructions in response – including, potentially, AfW's original instruction.

This may suggest that AfW is best placed to act as the SO. If the scheme is unable to meet AfW's original instruction it may need to make adjustments in the rest of its network, and if AFW will take on the role of the SO, then it will be best placed to assess this trade-off.

4.2.2 Minworth (STT)

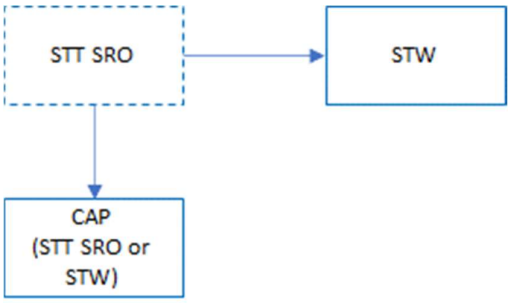
The Minworth (STT) scheme would provide water resources to the STT SRO. Based on the discussions held with the STT SRO, it is expected that the use of the asset will be for resilience purposes and may include additional purchasing of water when needed.

Under either scenario, the pipeline (owned by the CAP) is expected to be a largely passive asset not requiring day-to-day operational instructions. For longer term operational issues, it may then be most efficient for the CAP to directly coordinate with its contract counterparty – whether the principal Beneficiary of the STT SRO or STW.

For the Minworth WwTW, the current STT SRO expectation is that individual water companies making use of the system will enter into bilateral BSA's with STW, as owners and operators of the expansion, for supply. STW may therefore receive multiple instructions from the Beneficiaries of the STT SRO or, potentially, a single set of instructions consolidated by a System Operator.

Further details on the operation of the Minworth (STT) will be developed once work on the STT SRO operations is concluded.

Figure 28 - Flow of operating instructions



4.2.3 ST Sources

As with Minworth (STT), the ST Sources scheme would provide water resources to the STT SRO. Again, it is expected that the use of the asset will be for resilience purposes and may include additional purchasing of water as required.

The current STT SRO expectation is that individual water companies making use of the system will enter into bilateral BSA's with STW, as owners and operators of the expansion and transfer, for supply. STW may therefore receive multiple instructions from the Beneficiaries of the STT SRO or, potentially, a single set of instructions consolidated by a System Operator.

Figure 29 - Flow of operating instructions

Further details on the operation of the ST Sources will be developed once work on the STT SRO operations is further advanced.

4.3 Contract structure

Based on the options set out above regarding delivery, ownership, financing and operation, below we set out some initial thinking on the potential contractual arrangements between the relevant parties. These arrangements are all subject to change, as the schemes are developed further, but helps provide an overview of the types of contracts that will need to be put in place.

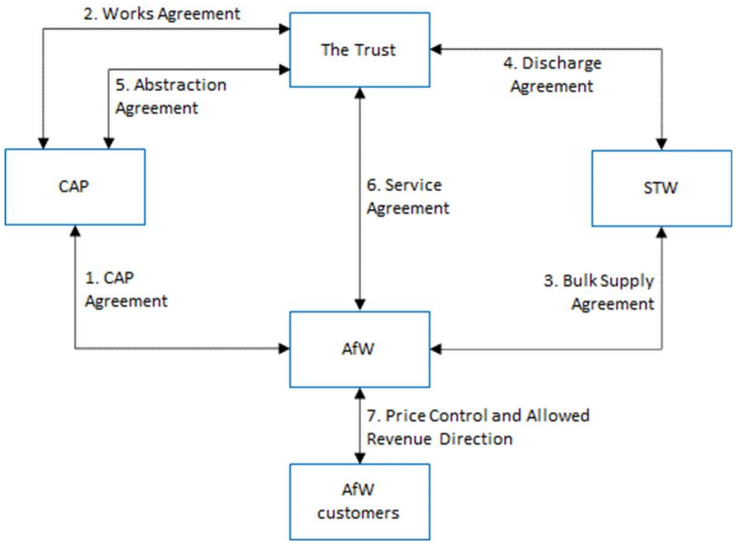
4.3.1 GUC and Minworth (GUC)

Figure 30 shows a potential set of contractual arrangements for the GUC and Minworth (GUC) scheme based on the following assumptions:

- The scheme is split into three works packages, with AfW appointing the CAP, as per Section 4.2.3;
- The CAP will undertake the works on the canal, transferring them to The Trust on construction completion, as per Section 4.1.1. The value of the assets transferred to The Trust may be recognised as a lease, with The Trust's lease payments being made on its behalf by AfW directly to the CAP. AfW would, in turn, deduct the lease payment from any amounts due to The Trust for the services it provides. Alternative arrangements, with the same economic effect, may be explored;
- Any works undertaken by STW will covered under the Bulk Supply Agreement (BSA) for the water resources, modified as required; and
- That any BSA (or alternative agreement covering the necessary cost recovery and supply obligations) between STW and AfW would have to allow for The Trust's position in the supply chain. In particular, it would have to recognise the discharge and abstraction agreements that The Trust will need to have in place. It is expected that the discharge agreement will link to the EA permit to discharge requirements and that The Trust will apply for the abstraction agreement.

  Subject to confirming the legal status of the water, it may also be necessary for The Trust to enter into the water trading arrangements. Potentially the BSA between STW and AfW would be replaced with two 'BSA' type agreements – one between STW and The Trust and a second between The Trust and AfW give that Trust is expected to own the water once it enters the canal. To the extent there is any gap between the two 'BSAs', such an arrangement may leave the Trust with additional risk, however there may be a scope for consolidation of the agreements.

Figure 30 - Indicative contract structure – GUC and Minworth



The principal purpose of each contract would be:

1) *CAP Agreement*: sets out the services the CAP will deliver and the basis on which they will be paid. The payment amount will be based on the bid during the competitive procurement process. Should the CAP be undertaking the construction work on the canal, the payment will be sized to include any associated funding costs.
2) *Works Agreement*: to allow the CAP to undertake work on canal assets they will require The Trust to facilitate this by providing access etc. The agreement would also set out the basis on which the assets are transferred to The Trust on completion.
3) *Bulk Supply Agreement*: any BSA (or alternative agreement) between AfW and STW could be modified to include the provision of the capacity at Minworth and the transfer to Atherstone alongside any payment for the water resource.
4) *Discharge Agreement*: provision for STW to discharge water into the canal network, subject to The Trust's operational requirements, including coordination with the CAP's Abstraction Agreement.
5) *Abstraction Agreement*: provision for the CAP to abstract water from the canal network, subject to The Trust's operational requirements, including coordination with the STW's Discharge Agreement.
6) *Service Agreement*: sets out the service The Trust will provide once it receives the assets from the CAP and the basis on which they will be paid (payment for the operation and maintenance, as the construction cost is recovered under the CAP Agreement).
7) *Price Control and Allowed Revenue Direction*: AfW would look to recover all the costs of the scheme from customers. While certain costs may be recoverable through the standard price control, other cost (in particular the CAP costs) would be recovered under an Allowed Revenue Direction granted by Ofwat.

Note, this structure is purely indicative and other arrangements may be available to capture the necessary arrangements.

4.3.2 Minworth (STT)

Figure 31a and b show two potential sets of contractual arrangements for the Minworth (STT) scheme based on the following assumptions:

- The scheme is split into two works packages, with either the principal Beneficiary of the STT SRO (a) or STW (b) appointing the CAP, as per Section 4.1.2;
- Any works undertaken by STW on its own assets will be covered under the BSAs for the water resources, modified as required; and
- Where STW is the CAP counterparty (Figure 31b), any CAP costs may also be recovered through the BSAs.

Figure 31a – Indicative contract structure – Minworth (STT) – STT SRO as CAP counterparty

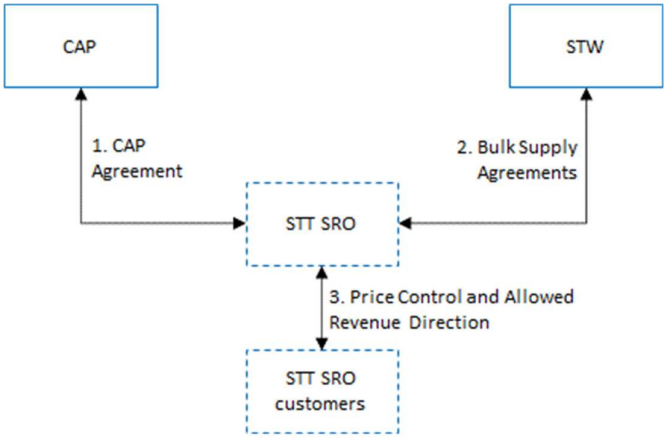
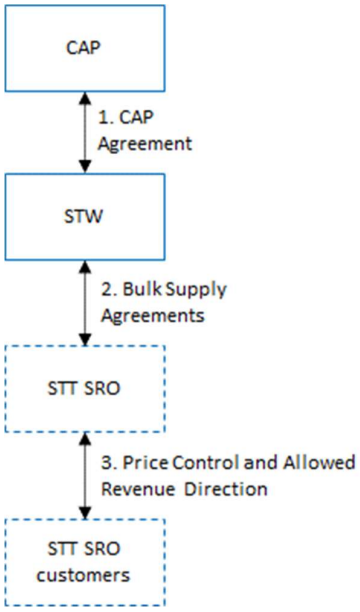


Figure 31b - Indicative contract structure – Minworth (STT) – STW as CAP counterparty



The principal purpose of each contract would be:

1) *CAP Agreement*: sets out the services the CAP will deliver and the basis on which they will be paid. The payment amount will be based on the bid during the competitive procurement process.
2) *Bulk Supply Agreements*: any BSAs between STT SRO Beneficiaries and STW could be modified to include the provision of the capacity at Minworth any payment for the water resource. Where STW is the CAP counterparty, there would also need to be provision for recovering CAP costs on a back-to-back-basis, leaving no liability sitting with STW.
3) *Price Control and Allowed Revenue Direction*: STT SRO would be expected to recover the schemes costs from its customers, as appropriate.

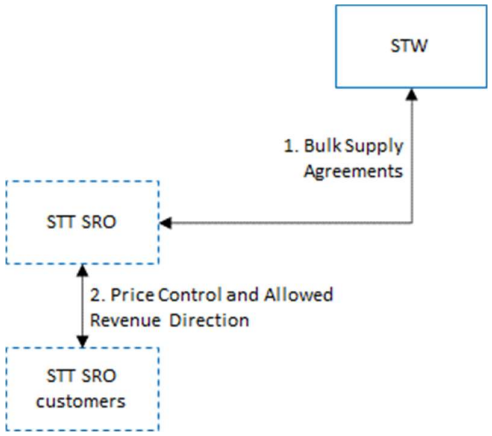
Note, this structure is purely indicative and other arrangements may be available to capture the necessary arrangements.

4.3.3 ST Sources

Figure 32 shows a potential set of contractual arrangements for the ST Sources scheme based on the following assumptions:

- The scheme potentially comprises one or two works packages, though both would be delivered by STW Section 4.1.3; and
- Any works undertaken by STW on its own assets will be covered under the BSAs for the water resources, modified as required.

Figure 32 - Indicative contract structure – ST Sources



The principal purpose of each contract would be:

1) *Bulk Supply Agreements*: BSAs between STT SRO Beneficiaries and STW could be modified to include the provision of the capacity at Minworth alongside any payment for the water resource.
2) *Price Control and Allowed Revenue Direction*: STT SRO would be expected to recover the schemes costs from its customers, as appropriate.

Note, this structure is purely indicative and other arrangements may be available to capture the necessary arrangements.

5. Procurement

Key conclusions:

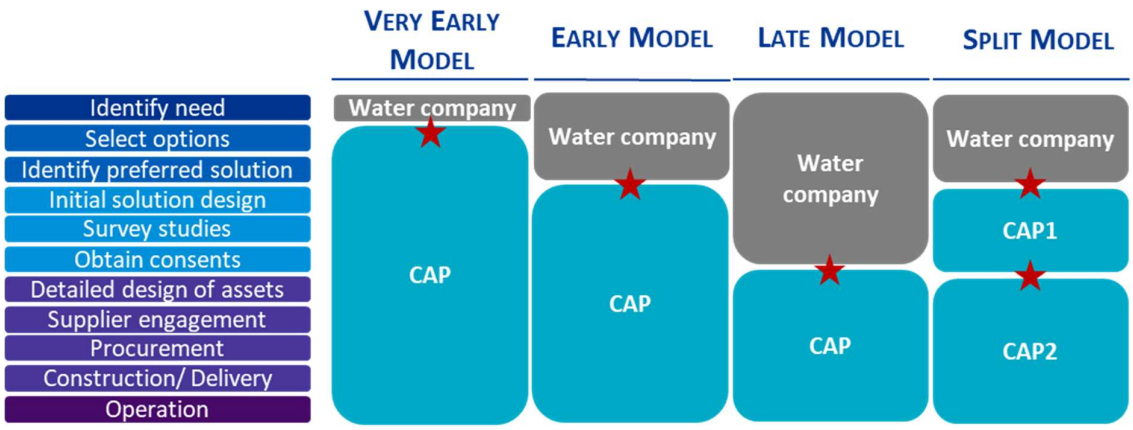
- For those assets procured under DPC, it is recommended to apply the late tender model. While potentially removing some scope for innovation, it allows for bidders to provide fixed prices and removes the risk of subsequent cost increases. The late model DPC procurement process currently appears compatible with either DCO or T&C planning application.
- For those assets that are not being procured through DPC, the relevant party will review their standard internal procurement processes to confirm they are suitable for the size and scope of the works they are required to deliver.
- Both the Trust and STW have established O&M arrangements that, given the proximity of the new works to existing assets, may be readily extended to incorporate the new works. This suggests a D&B contract is most suitable to the provision of the works, which both the Trust and STW are experienced in procuring on a value for money basis.

5.1 DPC tender

For DPC, Ofwat expects companies to identify the most suitable point to competitively tender a project, i.e. the point in the project lifecycle when launching the tender provides the greatest benefit to customers. The project lifecycle consists of activities from identifying the need to the start of operations.

As shown in the figure below, Ofwat identified four alternatives for when a project could be tendered – 'very early', 'early', 'late' and 'split' models.[24] Under each option the allocation of the design, planning & consenting and preconstruction works carried out by the water company or a CAP are different.

Figure 33 - Four proposed tender model options



The key characteristics of these alternative models are as follows:

- **Very early model** – schemes will be tendered out after the need has been identified by incumbent companies. The tender and handover of assets will be at the 'select options' stage;

[24] Ofwat, Delivering Water 2020: Our methodology for the 2019 price review, Appendix 9: Direct procurement for customers (December 2017)

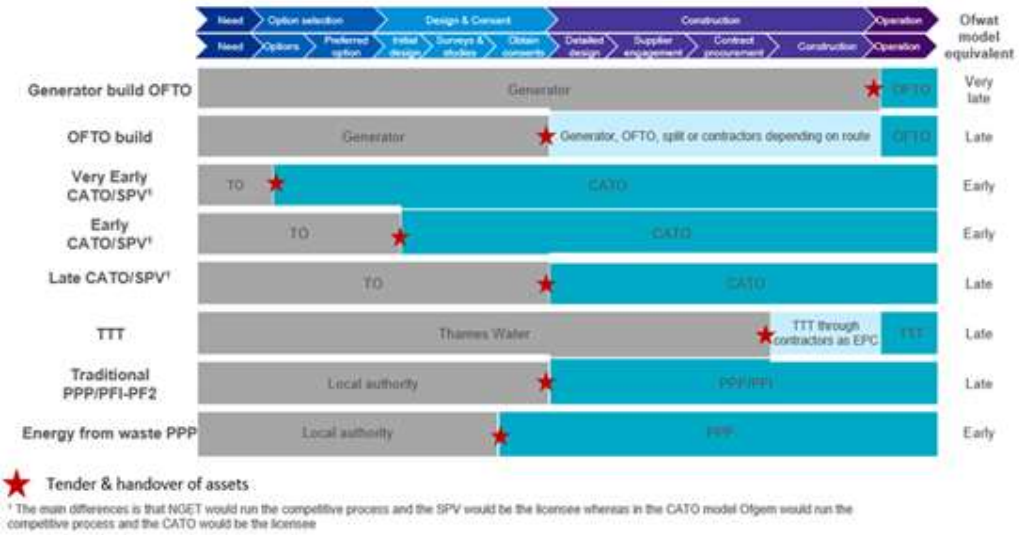
- **Early model** – schemes will be tendered out once the preferred solutions have been identified by incumbent companies. The tender and handover of assets will be at the 'initial solution design' stage;
- **Late model** – schemes will be tendered out once after incumbent companies will obtain consent and initial design has been completed. The tender and handover of assets will be at the 'detailed design of assets' stage;
- **Split model** – scheme is tendered out in two separate tenders; one for the design and second for the construction and operation of the asset. There may be further variations of this model, where the finance will be split from design and build. Under this model, there will be two handover points, one at the 'initial solution design' stage and second at the 'detailed design of assets' stage.

The RAPID guidance for gate two also requests high-level consideration of a further model:[25]

- **Separation of construction and financing** – following the example of TTT, the separate procurement of the construction contractor and the project company that will finance and own the asset. This could be considered a bespoke version of the late model.

Ofwat has not provided any further guidance on how the tender model should be selected other than it should reflect project specific considerations. There is also no standardised DPC framework for assessing appropriate tender models beyond the requirement it should drive best value for customers. We have therefore considered the tender models adopted by a range of infrastructure procurements, mapped these against the models identified by Ofwat (see Figure 34), and considered their lessons for DPC.

Figure 34 - Tender model precedents



There are a number of key lessons from these precedents applicable to DPC, as set out in Table 19.

[25] RAPID, "Strategic regional water resource solutions guidance for gate two", February 2022 (p.26)

Table 19 - Key characteristics and lessons learned from the selected tender model precedents

Generator build Offshore Transmission Operator (OFTO)
• The model has a proven track record, with the seventh tender round currently in progress. Competition is primarily focused on financing and bidders' cost of capital. It is a mature market with a wide and increasing variety of funding solutions. • The market is dominated by established investors and consortia. Generator build OFTO is considered a familiar asset class and tender model by investors with homogenous risk profile across the various solutions tendered in the market. This model could be easily replicated with an existing investor base but is a very late model with no design or construction risk.
OFTO build
• Ofgem developed several variants of an OFTO build model where the OFTO would take ownership of the design and construction of the asset. • Offshore windfarm developers have generally resisted this model out of concern about losing control over a critical component of their projects Consideration needs to be given to the link between asset quality, interfaces and responsibility.
Very Early/Early/Late Competitively Appointed Transmission Operator (CATO) / SPV
• Ofgem and the Electricity System Operator (ESO) are developing Non-Network Solutions Pathfinder projects as well as alternative approaches pre-CATO legislation. • The CATO/SPV model is still currently under development and no project has been delivered through this regime yet. There are significant challenges to running the competition at the very early stage in terms of identifying the need and structuring the procurement process.
Thames Tideway Tunnel (TTT)
• It is a large one-off project which is a discrete part of the network and has its own bespoke regulatory framework. • The construction and finance of the asset was procured as part of different tenders with the aim to achieve the lowest possible financing costs for customers and to meet project timelines. • TTT has its own licence, backed up by various Government support mechanisms to manage risks for the Infrastructure Provider (IP), such as significant cost overrun risk. A bespoke late model with novation where all works are undertaken prior to procurement can support a very low cost of capital.
Traditional Public Private Partnership (PPP)/PFI-PF2
• The private sector provider is engaged to design, build, finance, operate and maintain (DBFOM) the asset. • Risk associated with construction delay, cost overrun, and maintenance are transferred to the private sector.

• Proven solution, however, the UK Government has announced that it will no longer use Private Finance 2 (PF2), the current model of Private Finance Initiative (PFI). There is a lot of market experience for DBFOM who could transfer their skills/approaches to DPC.
Energy from waste PPP
• In energy from waste projects PFIs have been awarded earlier in the asset lifecycle where contractors took planning and project development risk (in some cases with financial compensation to contractors). • However, this is unusual even with the government as the procuring authority and ultimate owner of planning decisions. Planning risk can be transferred but only under specific circumstances.

Considering the precedents outlined above, the early and late tender model appear to be the most applicable models:

- The early tender model will allow the CAP to undertake the initial design and consenting work associated with the scheme, which is expected to result in a greater potential scope for innovation in relation to the initial project design. This model, however, will require significant lead time before operations are scheduled to start; and
- In cases where a scheme will not be suitable for the early tender process, the late tender model should be considered, allowing water companies to develop the scheme in parallel to procuring the CAP. The late tender model may be most suited to the current RAPID Gate process.

A key difference between the two approaches is which party takes risk on planning and consenting. Under early competition the bidder would look to secure planning and consents for their proposal. Under late competition, bidders are likely to require evidence that planning, and consents are in place (or are in the process of being secured) prior to entering the tender process. A selected list of additional benefits and risks associated with the early and late tender models are highlighted in the table below.

Table 20 - Key benefits and risks of the early and late tender models

Tender model	Potential benefits	Potential risks
Early Tender	• Help drive solution innovation • Market based comparison of alternatives • Free up internal resources from design/consenting	• During the detailed design and consenting, cost rises may be passed back to incumbent • Funding cost may not be fixed at the point of tender due to the delay in starting construction
Late Tender	• Investor and contractor familiarity with approach • Bidders will have greater cost certainty achieved through mature design, reduced risk profile and ability to agree cost adjustment mechanism/indices over a shorter construction timeframe • Financing could be part of the tender and costs locked in	• Solution put out to tender is not optimal • Internal resources to develop design/consenting/planning

Based on the analysis above of the early and late tender models, we propose that the late tender models should be the preferred option for schemes being procured under DPC as it can be aligned to the DCO

and TCPA application timelines as well as provides additional benefits to customers in a form of fixed prices for the contract duration.

As per TTT, under the late model there is the potential to split the procurement of the construction and finance. However, this likely to mean that bidders are unable to optimise the risk allocation between contractor and project company, potentially leaving more risk with the appointing company.

5.2 Non-DPC delivery

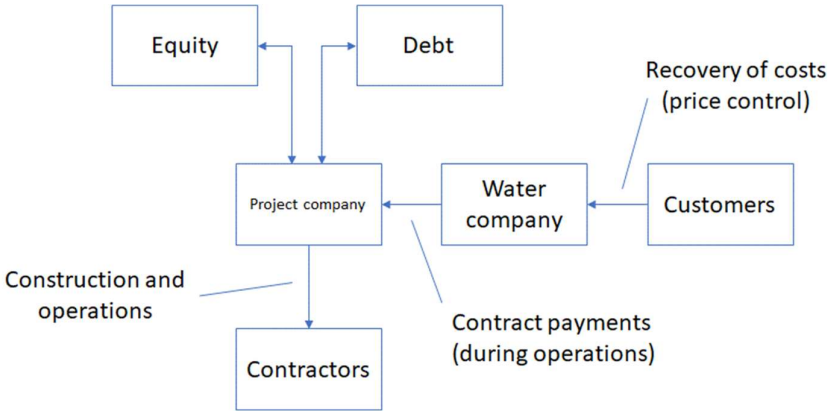
For those schemes found not to be suitable for DPC there are a number of alternative procurement options to consider, depending on the which functions – design, build, finance, operate and maintain – STW or AfW are looking to outsource.

Below we set out three potential options that could be explored further for relevant schemes.

5.2.1 Non-DPC DBFOM

One potential option is procurement of the project through a DBFOM contract with a competitively appointed third party, but *outside* the DPC framework (i.e. without Licence changes) (see Figure 35).

Figure 35 - High-level non-DPC DBFOM structure (illustrative)



Outside the DPC framework the procurement would not be subject to the DPC approval process. Not requiring Ofwat approvals may potentially simplify the process, but for the water company a non-DPC DBFOM procurement also creates a number of potential risks, in particular:

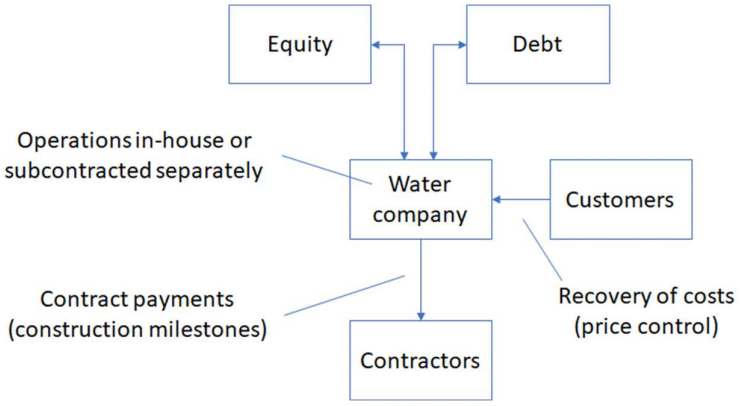
- A potential mismatch between the long-term contractual payment obligation with the project company and the water company's price control revenues revised periodically; and
- Reliance on the standard IDOK mechanism for bringing a project back in-house at the end of the contract or on termination, with the usual timeframe and thresholds.

Further consideration would need to be given to the potential significance of these risk and any steps for mitigating them.

5.2.2 Design, build, operate and maintain (DBOM) or design and build (D&B)

The schemes could also be procured in-house by the water company using existing procurement processes and funding arrangements (see Figure 36).

Figure 36 - High-level in-house delivery structure (illustrative)



Under this approach, once Ofwat grants a totex allowance for the project, the water company selects a contractor to undertake the construction works and raises additional debt on balance sheet to fund the construction milestone payments.

Once completed, the water company may operate and maintain the asset itself or enter into an O&M contract with a service provider. The cost of servicing the debt, along with the O&M, is recovered through customer bills in line with the allowed revenue – with the water company facing the risk (subject to sharing with the customer) that the outturn cost of the project is more or less than the allowed amount.

5.2.3 Conclusion

For those work packages not considered suitable for DPC, the letting of D&B contracts is likely to be the most appropriate procurement approach:

- Having not passed the tests for a DPC DBFOM procurement, it is unlikely that a non-DPC DBFOM would be beneficial – either for reasons of size, discreteness or value for money; and
- Both the Trust and STW are experienced in operations and maintenance, and with the works based on exisiting sites will be carrying out O&M in close proximity. As such, there are likely to be significant efficiency saving from combining the O&M of new assets with existing operations, making a DBOM approach less attractive and likely to outweigh efficiencies gained through the DPC tender process due to increased complexity and number of handoff points; and
- The alignment of a D&B procurement with planning, starting once the planning application is accepted, is set out in in Figure 39, Figure 40, Figure 41, and Figure 42.

5.3 Procurement timelines

The timeline for the procurement process will vary depending on the selected delivery route. The process must be designed to reflect the proposed tender model and to align with the planning & consenting processes. Below we set out an assumed procurement process and timeline for both the

DPC (which may also be applicable to non-DPC DBFOM) and in-house (D&B) procurement scenarios.[26] We detail the activities undertaken within each stage, explaining the differences between scenarios.

Next, we table the assumptions defining how the procurement scenarios will interact with the Development Consent Order (DCO)[27] and Town & Country Planning Act (TCPA) planning application timelines. We illustrate how these timelines can be aligned to progress in parallel. This alignment has been prepared on the basis of the DCO and TCPA timelines and assumptions set out in the WSP Planning Policy Appraisal and Consents Strategy for the GUC SRO[28].

These are brought together into overall timelines in Figure 39, Figure 40, Figure 41, and Figure 42.

5.3.1 DPC procurement scenario

A DPC procurement process is complex, working towards the appointment of a CAP who will assume responsibility for the Design, Build, Finance, Operation and Maintenance of the SRO.

In advance of a DPC procurement process, the Appointee must undertake a process of tender preparation. This will involve the development of tender documentation (e.g. SQ and ITT questionnaires and evaluation criteria, and a draft CAP agreement (CAPA)), and the staged progression through Ofwat's DPC Control Point process, including:

- Control Point B, which involves the preparation and submission of a Strategic Outline Case (SOC). This business case sets out the scope of the project and the rationale for pursuing a DPC procurement, and so is reflected as the commencement of the tender preparation process.
- Control Point C, which involves the preparation and submission of a procurement plan, setting out more detail on how the project will be brought to market. It is typically submitted c.6 months after Control Point B.
- Control Point D, which involves the preparation and submission of the tender documentation (SQ, ITT, CAPA) once ready for the procurement. As such, this Control Point typically occurs shortly (c.3 months) before the commencement of the procurement process.
- Control Point E, which involves the preparation and submission of an Outline Business Case (an updated version of the SOC), reflecting a more advanced case for the delivery of the project through DPC, informed by additional design, procurement preparation, and a better understanding of the impacts of the project upon the Appointee. This stage reflects the end of the tender preparation process, as once approval of Control Point E has been received, the DPC procurement can be launched.

Once the procurement preparation stage is complete, the DPC procurement process will commence, involving the following stages:

- A pre-qualification stage, to identify bidders with the sufficient technical and financial capability to deliver the project.
- An ITT stage, wherein bidders produce a tender submission. Critically, within a DPC process the CAP will be responsible for providing the financing required to deliver the works. This means that the ITT stage must allow sufficient time for bidders to complete a design which is sufficiently detailed to secure commitments from financiers.
- An evaluation and negotiation stage, during which time submitted bids are assessed and details negotiated with participants in the competition; and

[26] The in-house (DBOM) procurement scenario, which may be considered less applicable, is not explicitly considered here is but likely to be longer than D&B and shorter than DBFOM timelines.

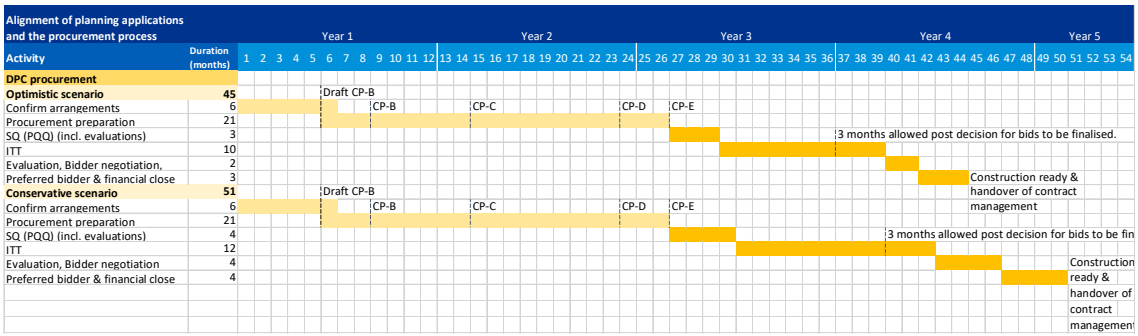
[27] A Development Consent Order (DCO) is awarded by the Secretary of State under the Nationally Significant Infrastructure Projects (NSIP) regime.

[28] Version dated November 2021.

- A preferred bidder and financial close stage, where the procuring authority finalises terms with the preferred bidder in order to reach contract award.

These stages are shown in Figure 37 below, which illustrates an optimistic timeline with a duration of 18 months and a conservative timeline with a duration of 24 months.

Figure 37 - Optimistic and Conservative scenarios for a DPC procurement process



The procuring authority may elect to plan on the basis of an optimistic or conservative scenario. The comparison of two scenarios shows how additional time would likely be reflected in the procurement timeline if required. DPC is a novel procurement model, and the appropriate length of the procurement process will be defined by the particular nature of the project in question and the activities bidders will be expected to complete during the procurement process. Future engagement with the market will provide insight into the more appropriate scenario for the SRO.

SIPR

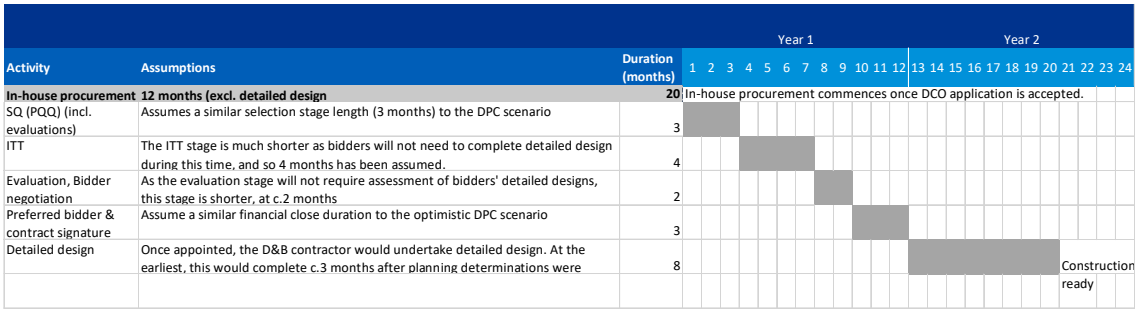
As a variation to DPC – still requiring the competitive procurement of a third party to design, build, finance, operate and maintain the asset – the procurement timelines for an IP are expected to be similar to those for a CAP, subject to the necessary legislation being in place (see Section 3.4). The principal difference will be the role of Ofwat, with a licence rather than a contract being awarded at the end of the process. Ofwat may need to consult on the terms of the licence and, the extent to which this can not be done in parallel with the procurement, could add some additional time.

5.3.2 In-house (D&B) procurement scenario

The in-house (D&M) procurement timeline is similarly complex by comparison to a typical Appointee procurement exercise. The in-house procurement scenario assumes the appointment of a contractor to assume responsibility for the Design & Build (D&B) of the SRO only, with the procuring authority to retain responsibility for Finance, Operation and Maintenance. This process includes:

- A pre-qualification stage, to identify bidders with the sufficient technical and financial capability to deliver the project.
- An ITT stage, wherein bidders produce a tender submission.
- An evaluation and negotiation stage, during which time submitted bids are assessed and details negotiated with participants in the competition; and
- A preferred bidder and financial close stage, where the procuring authority finalises terms with the preferred bidder in order to reach contract award.
- A detailed design stage which, although undertaken after contract award, has been included to facilitate the comparison of procurement timelines, as this activity would be undertaken at ITT stage in a DPC procurement process.

Figure 38 - In-house (D&B) procurement timeline



5.3.3 Planning and procurement interaction assumptions

Having established the activities and duration of the procurement processes in the DPC and in-house (D&B) scenarios, it is then necessary to set out how these processes will align when conducted in parallel with a planning application process. Table 21 captures the assumptions governing the interaction between the procurement and planning scenarios.

Table 21 - Procurement timeline assumptions and impact on the procurement timeline

Assumption	Effect on procurement timeline
Assumptions applicable to both DCO and TCPA planning scenarios	
Bidders will be unwilling to prepare a bid without visibility of submitted planning applications.	If possible, the procurement would take place once planning applications have been granted. However, recognising this is not always possible, the procurement process should not commence before planning applications have been submitted.
Bidders will be unwilling to submit final bids/prices on the basis of planning applications only and will prefer to bid on the basis of planning determinations.	The procurement process should be structured such that planning determinations are received prior to final bid submission. An allowance should be made within the tender development window, after planning determinations are received, for bidders to amend their bids accordingly
Unforeseen circumstances may delay the planning determination timeline.	If delays occur, this can be addressed through one of two mechanisms: • Allow additional time in the procurement process for all bidders, i.e. extend the bid submission window. • Implement a change control mechanism within the contract that allows for planning determinations and/or changes which occur after the preferred bidder has been appointed to be addressed as a change control mechanism. Both options are subject to the materiality of the changes that arise.
Material changes to the planning determinations may arise.	Material changes may require the procurement process to be restarted. If an unsuccessful bidder was able to successfully argue that they would have bid differently had they known the outcome of the planning determinations, and that on the basis of the assessments made, this would have resulted

Assumption	Effect on procurement timeline
	in a different outcome, then that bidder may be able to successfully challenge and void the procurement process.
Market engagement will need to be maximised so that participants understand the project and procurement process.	The better educated potential bidders are on the project and the stages of the procurement process, the more likely they are to be able to prepare efficient bids and to participate in the procurement process in a timely fashion. This will help to limit delays to the process.
Under the DPC model, STW / AfW would undertake necessary enabling works	Enabling works are assumed to run in parallel to the procurement process such that the construction start date for the main works is unaffected.
The DPC process requires a period of c.18 months (beginning from submission of the Strategic Outline Case) to prepare for tender.	Preparation for the tender and progression through Ofwat's DPC Control Points must occur in advance of the procurement process. If a shorter timeline for planning application preparation is assumed, this may place the DPC tender preparation timeline on the critical path.
The in-house scenario assumes that a new D&B contractor must be appointed.	If the planned works could be delivered within a party's existing framework agreement, then the timeline for delivery may be reduced.
DCO-specific assumptions	
Judicial review of a DCO process will result in either the acceptance of the grant or a rejection but will not change the terms of the DCO itself.	Whilst bidders may be unwilling to reach financial close without the JR process being complete, this should not delay the finalisation of bids on the basis of an awarded DCO that is under judicial review.
TCPA-specific assumptions	
Based on the planning assumption that "other consents" (within the TCPA scenarios) must be obtained sequentially, it is assumed that these activities cannot be undertaken in parallel.	Insofar as elements of the "other consents" are needed for bidders to finalise their bids, the date at which other consents are achieved will need to be at least 3 months prior to final bid submissions.
It is unlikely that bidders will be willing to place final bids without achieving "other consents". In particular, CPO, biodiversity and environmental permits are likely to be considered essential.	Whilst it may be possible to finalise bids without obtaining these consents, procurement plans should be produced on the basis that they are required. If bids were submitted before these consents were obtained, mitigations exist that would allow for later changes to be accommodated, including as pass-through costs, or appointing a preferred bidder subject to consent award.

5.3.4 Alignment of planning applications and the procurement scenarios

WSP's Planning Policy Appraisal and Consents Strategy for the GUC SRO[29] sets out four planning application timelines, represented in Table 22.

Table 22 - Planning application scenarios

Planning application	Planning authority	Duration of application process
DCO	Planning inspectorate	36 months
TCPA – Best case	Local planning authorities	18 months
TCPA – Middle case		23 months
TCPA – Worst case		34 months

The figures on the following pages illustrate the alignment of the DPC and in-house procurement processes with each planning application timeline when the assumptions set out in Table 21 are applied equally to each. The diagrams show that:

- Typically, all three procurement scenarios will allow the CAP (DPC) or D&B contractor (in-house) to reach construction readiness within a similar timeframe (<6 months apart) after the award of planning determinations, whether through a DCO or TCPA application.
- Where the planning process can be optimised and achieved in a short timeframe, this may allow a CAP to reach construction readiness earlier, having undertaken detailed design as part of its ITT submission within a DPC procurement process.
- A longer planning application process may allow a D&B contractor to reach construction readiness sooner where the length of the planning determination process lends sufficient time for the contractor to be appointed and complete a significant proportion of detailed design in advance of planning determination.
- By virtue of the time required to prepare for a DPC tender process and progress through the DPC Control Points, it may be necessary to begin preparation for the tender before beginning preparation for planning applications. Where a shorter planning application timeline is assumed (as per the TCPA best and middle cases), outperformance in tender preparation period may offer the opportunity to shorten the overall programme for delivery.

5.3.4.1 Alignment to a DCO application

Figure 39 illustrates that in the event of a 36-month DCO application (where DCO award occurs in month 34), the in-house procurement scenario would allow the D&B contractor to be construction ready the earliest, having been procured on the basis of the DCO application, and adjusting its detailed design once appointed to account for any conditions imposed at DCO award.

In the optimistic DPC procurement scenario, the date of DCO award acts as the principal constraint for the commencement of the procurement process. In line with the assumption that bidders will need a period of 3 months after planning award to adjust and finalise their designs, the procurement does not commence immediately upon the submission of planning applications, but is delayed by 5 months to allow sufficient time later in the process. Whilst the CAP's detailed design would be complete during ITT on the basis of the awarded DCO, the post-ITT (evaluation, negotiation, preferred bidder and financial close) stages mean that a CAP would not be construction ready until 3 months later than the in-house scenario.

In the conservative DPC procurement scenario, the same constraint (DCO award) applies to the commencement of the procurement process. However, as this scenario assumes a longer procurement process, the competition can launch only 2 months earlier. Similarly, the post-ITT stages have a longer duration, meaning the CAP would be construction ready 6 months later than the in-house scenario.

[29] Version dated November 2021.

5.3.4.2 Alignment to a best-case TCPA application

Figure 40 illustrates that in the event of an 18-month TCPA application, the optimistic DPC procurement scenario would allow a CAP to be construction ready the earliest. As consents are awarded quickly (12 months after application), this allows the DPC procurement to commence immediately upon submission of planning applications and for consent determinations to be incorporated as part of the detailed design at ITT stage.

The conservative DPC procurement scenario also begins upon submission of planning applications, however whilst the timeline is not constrained or otherwise delayed, reaches construction readiness the latest (6 months later than the optimistic DPC scenario) due to the overall length of the procurement process.

The in-house procurement scenario also begins upon submission of planning applications, however as the post-ITT stages will be in progress at the time when consents are granted, the CAP's detailed design activity can commence only once contract award has been made. As such, the detailed design completes later than the completion of the DPC contract award (2 months later than the optimistic DPC scenario).

5.3.4.3 Alignment to a middle-case TCPA application

Figure 41 illustrates that in the event of a 23-month TCPA application, the in-house procurement route allows a D&B contractor to reach construction readiness the earliest. The 15-month period from TCPA application to consent award allows sufficient time for the D&B contractor to be appointed and undertake a detailed design, with consents granted in the middle of the detailed design stage.

In the optimistic DPC procurement scenario, the date of TCPA consent award acts as the principal constraint for the commencement of the procurement process. In line with the assumption that bidders will need a period of 3 months after planning award to adjust and finalise their designs, the procurement does not commence immediately upon the submission of planning applications, but is delayed by 5 months to allow sufficient time later in the process. Whilst the CAP's detailed design would be complete during ITT on the basis of the awarded DCO, the post-ITT (evaluation, negotiation, preferred bidder and financial close) stages mean that a CAP would not be construction ready until 3 months later than the in-house scenario.

In the conservative DPC procurement scenario, the same constraint (TCPA award) applies to the commencement of the procurement process. However, as this scenario assumes a longer procurement process, the competition can launch only 2 months earlier. Similarly, the post-ITT stages have a longer duration, meaning the CAP would be construction ready 6 months later than the in-house scenario.

5.3.4.4 Alignment to a worst-case TCPA application

Figure 42 illustrates the impact to each procurement scenario in the event of a 34-month TCPA application that includes a period of appeal. As the need to account for an appeal process would not be known in advance, it is assumed that the procurement processes would commence as planned for a middle-case TCPA application timeline.

In the case of a worst-case TCPA application, the in-house procurement route allows a D&B contractor to reach construction readiness the earliest. This scenario assumes a period where the procurement is paused for 8 months to allow for the completion of the TCPA appeal process. The pause begins during the evaluation and bidder negotiation stage, after bidders would have submitted their original ITT bids. As such, an additional 2 months is included in the procurement timeline to allow for ITT bids to be updated in line with the outcome of the appeal. After this, the procurement continues through the remainder of the post-ITT stages and into the D&B contractor's detailed design.

In the optimistic DPC procurement scenario, the procurement begins as per the plan for the middle-case TCPA timeline, but must be paused early in the ITT process to allow for the 8-month TCPA appeal process. After the appeal has concluded, a 2-month period of bidder remobilisation is assumed, allowing time for bidding consortia to reorganise and re-establish their bid teams. Once remobilised, the

procurement timeline continues without additional constraint or delay, however due to the period of remobilisation, the CAP reaches construction readiness 2 months later than the D&B contractor in the in-house scenario.

In the conservative DPC procurement scenario, the procurement also begins as per the plan for the middle-case TCPA timeline. This competition is launched 2 months earlier than the optimistic scenario in line with the conservative timeline and the assumed date of consent award. The effect of the TCPA appeal is the same as in the optimistic scenario; an 8-month pause is followed by a 2-month remobilisation period. Once remobilised, the procurement timeline continues without additional constraint or delay, however due to the conservative timeline (allowing additional time during the post-ITT stages), the CAP reaches construction readiness 5 months later than the D&B contractor in the in-house scenario.

Figure 39 - DCO application process aligned to the DPC (late) and in-house (D&B) procurement scenarios

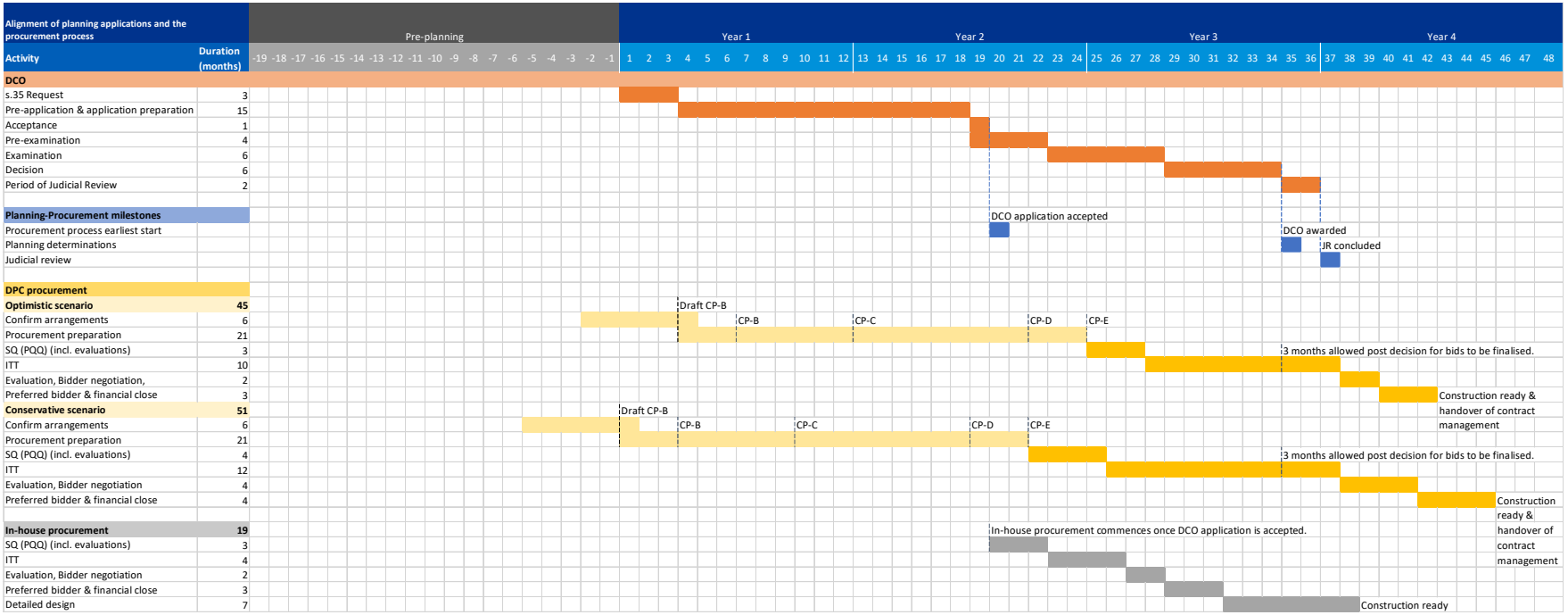


Figure 40 – Best case TCPA application timeline aligned to the DPC (late) and in-house (D&B) procurement scenarios

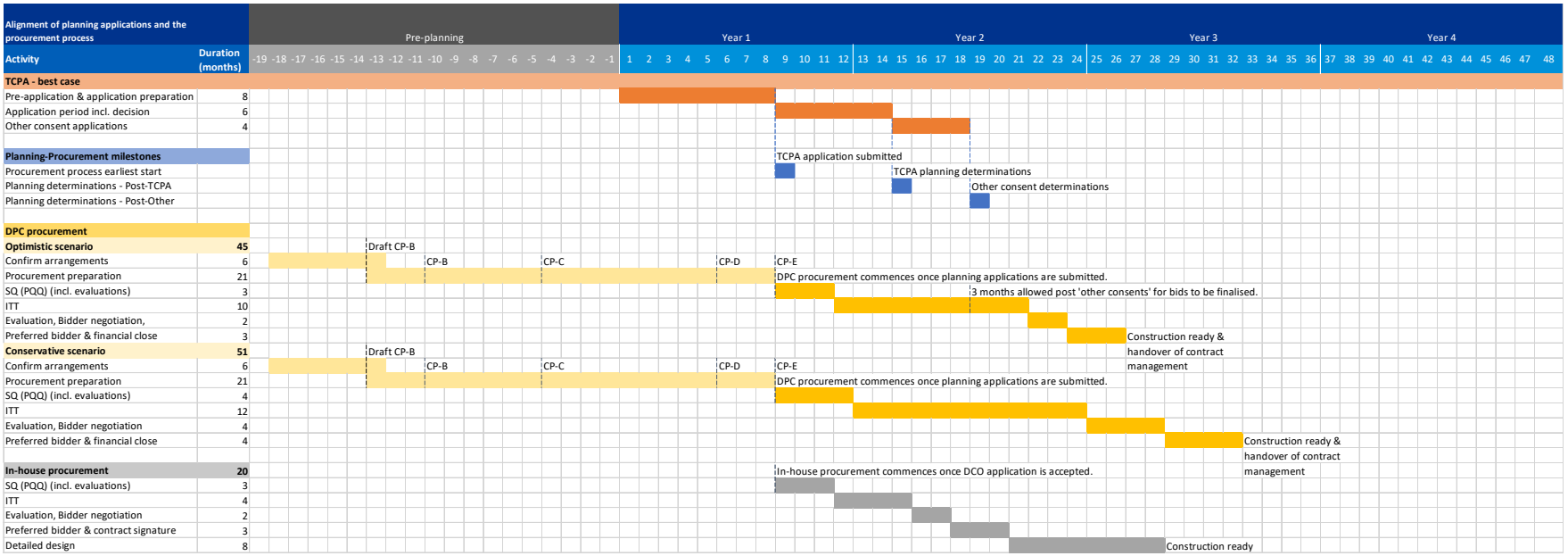


Figure 41 - Middle case TCPA application aligned to DPC (late) and in-house (D&B) procurement scenarios

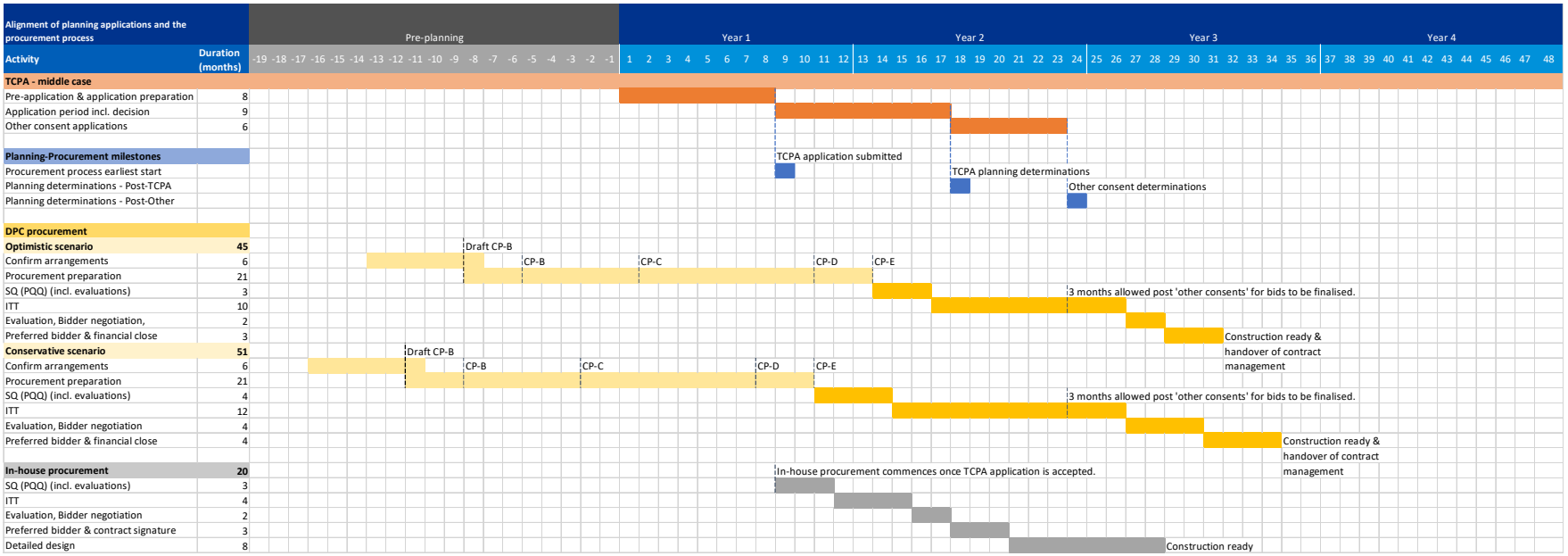
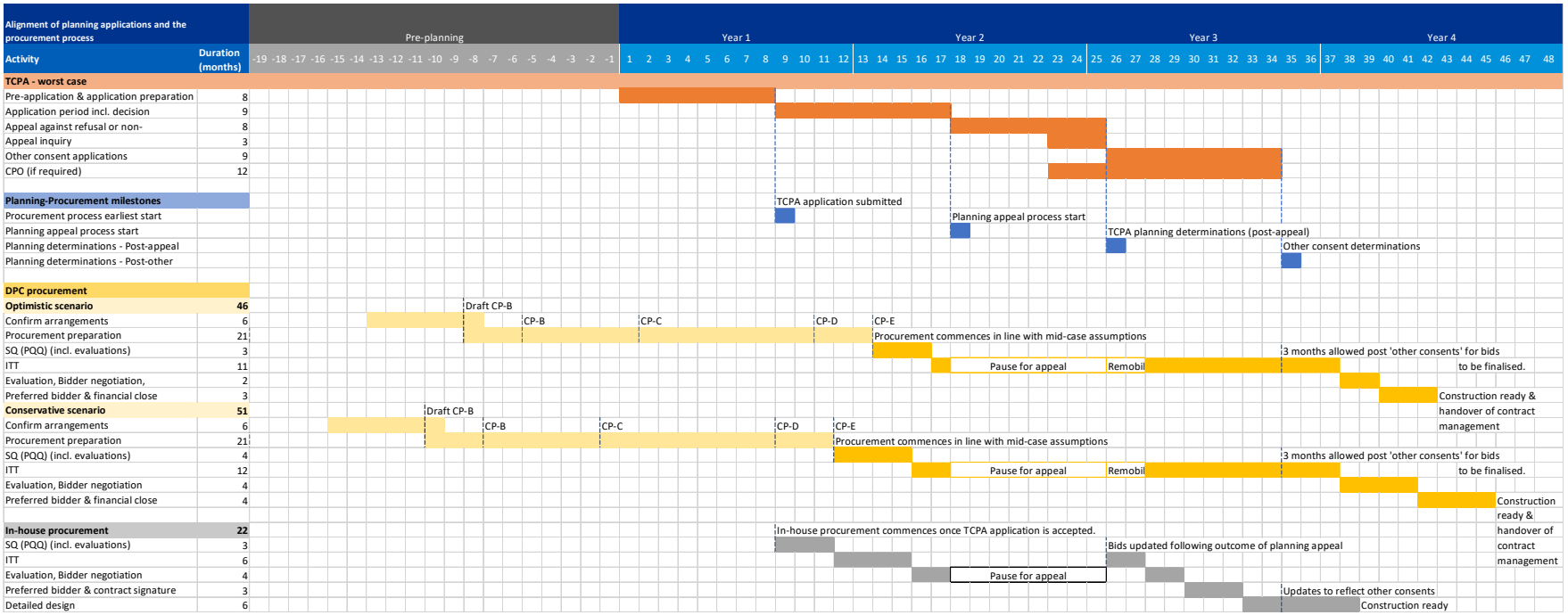


Figure 42 - Worst case TCPA application timeline aligned to DPC (late) and in-house (D&B) procurement scenarios



6. Next steps

Below we consider potential next steps in taking forward the procurement and commercial arrangements of each scheme. Next steps include both actions to further support some of the recommendations set out in this report and preparations by each party for taking the recommendations forward.

6.1 GUC and Minworth (GUC)

Key actions to further support the recommendations include:

- Market engagement – the scheme includes the potential appointment of a CAP. Through market engagement with investors and contractors, insight could be gained as to the attractiveness of the project to prospective bidders. It could be used to test issues such as undertaking work on The Trust's assets and better understand the potential risk appetite and pricing; and

- Finance costs – further work could be done to understand the financing costs of each party involved, including The Trust, STW and AfW. This could be used to support the conclusions as to which parties are best placed to finance the work packages.

In taking the recommendations forward, parties will need to:

6.1.1 STW

- Review conclusions regarding (1) the delivery party for each element of the scheme; (2) potential operational arrangements; and (3) the proposed commercial arrangements (in particular the proposed funding arrangements);
- Review internally the indicative contractual arrangements;
- Consider in-house delivery options for the Minworth expansion and Atherstone transfer; and
- Start to consider key terms of the BSA and discharge agreement.

6.1.2 AfW

- Review internally the conclusions regarding (1) the delivery party for each element of the scheme, in particular the conclusions around the CAP counterparty; and (2) the proposed commercial arrangements (in particular the proposed funding arrangements);
- Consider whether there is a case for SIPR;
- Consider the process for procuring a CAP and the timing of Control Point B (see Figure 39, Figure 40, Figure 41, and Figure 42). This will depend on when there is sufficient certainty around the arrangements to complete the SOC;
- Review internally the indicative contractual arrangements;
- Start to consider key terms of the BSA, CAPA, abstraction, works and service agreement; and
- Start to consider the recovery mechanism for the costs of the scheme (ARD/price control).

6.1.3 The Trust

- Review internally the conclusions regarding (1) the delivery party for each element of the scheme; and (2) the proposed commercial arrangements (in particular the CAP funding and proposal that the CAP undertake works on The Trust's assets);
- Review internally the indicative contractual arrangements; and
- Start to consider key terms of the discharge, abstraction, works and service agreement.

6.2 Minworth (STT)

Key actions to further support the recommendations include:

- Market engagement – the scheme includes the potential appointment of a CAP. Through market engagement with investors and contractors, insight could be gained as to the attractiveness of the project to prospective bidders. It could be used to test issues such as the contract counterparty and around risk appetite and pricing; and
- Engagement with STT SRO – further work could be done to understand the proposed arrangements for the STT SRO, including how other elements of the scheme are being financed and any proposed risk allocation for completion and performance. Discussions are required around the most appropriate contract counterparty for the potential pipeline CAP.

In taking the recommendations forward, parties will need to:

6.2.1 STW

- Review conclusions regarding (1) the delivery party for each element of the scheme; (2) potential operational arrangements, in particular the conclusions around the CAP counterparty; and (3) the proposed commercial arrangements (in particular the proposed funding arrangements);
- Consider whether there is a case for SIPR with regards the STT pipeline;
- Consider the process for procuring a CAP and the timing of Control Point B (see Figure 39, Figure 40, Figure 41, and Figure 42). This will depend on when there is sufficient certainty around the arrangements to complete the SOC;
- Review internally the indicative contractual arrangements;
- Consider in-house delivery options for the Minworth expansion; and
- Start to consider key terms of the BSA.

6.3 ST Sources

Key actions to further support the recommendations include:

- Engagement with STT SRO – further work could be done to understand the proposed arrangements for the STT SRO, including how other elements of the scheme are being financed and any proposed risk allocation for completion and performance.
- Engagement with other water companies – further evaluation of the option to supply others would help define the scope of ST Sources SRO and inform arrangments with the STT SRO.

In taking the recommendations forward, parties will need to:

6.3.1 STW

- Review conclusions regarding (1) the delivery party for each element of the scheme; (2) potential operational arrangements; and (3) the proposed commercial arrangements (in particular the proposed funding arrangements);
- Review internally the indicative contractual arrangements;
- Consider in-house delivery options for the Netheridge expansion and Deerhurst transfer; and
- Start to consider key terms of the BSA.

A1 Discreteness test

The 'discreteness' test focuses on the asset's role as part of core operations and the extent to which it is integrated as part of network management.

In order to assess 'discreteness' consistently and fairly, schemes will be evaluated against 6 criteria developed for the PR19 submission. These criteria were developed acknowledging the characteristics that Ofwat noted to impact discreteness, those being 'limited economies of scale and scope with the rest of the appointees' network system', 'simple or limited, well understood and manageable physical and operational interactions with the appointees' network', 'assets with capacity that is shared by multiple appointed companies, and 'assets that are more 'passive' and are not actively managed as part of the overall system.

Schemes are scored against each of the criteria based on their technical characteristics and associated discreteness. Only those schemes that exceed [10] points will be progressed to the next stage, with projects scoring below [10] considered insufficiently discrete.

GUC discreteness test

The discreteness assessment below has been completed for three different scheme variants:

- **Variant 1.1 & 1.2**: a single DPC project covering all elements of the GUC scheme,
- **Variant 1.3 & 1.4**: a single DPC project covering all elements of the GUC scheme excluding any works required on the canal, and
- **Variant 1.5 & 1.6**: a single DPC project covering abstraction, treatment, pipeline and storage between Leighton Buzzard to Chaul End – GUC (Southern).
- **Variant 1.7 & 1.8**: a single DPC project covering a transfer pipeline to Atherstone.

Table 23 - GUC discreteness test

Discreteness Criteria	**Scheme:** Grand Union Canal Transfer SRO				
	Assessment				**Rationale**
Variant:	**1.1 / 1.2**	**1.3 / 1.4**	**1.5 / 1.6**	**1.7 / 1.8**	
1. Asset location	**L**	**M**	**M**	**M**	• The Grand Union Canal Transfer scheme proposes the transfer of water from Minworth (STW region) to Affinity's customers around the Chaul End area (AfW region). For much of its route the transfer uses an existing canal managed by CRT, requiring enhancement construction work along its length. In the AfW region, water from the canal would be abstrated at Leighton Buzzard and then stored, treated and transferred to Chaul End. • The works will be highly integrated with the existing canal and need to allow current day-to-day canal operations to continue e.g. boating, locks, weirs. • There is little seperation of the asset from existing assets for the majority of its length under Variants 1.1 and 1.2. The asset is not standalone and there is significant sharing of location with existing assets.

Discreteness Criteria	Scheme: Grand Union Canal Transfer SRO				
	Assessment				Rationale
Variant:	1.1 / 1.2	1.3 / 1.4	1.5 / 1.6	1.7 / 1.8	
					• Whilst Variants 1.3 and 1.4 provide greater separation from existing assets, a CAP will be required to manage two separate sites at both ends of the GUC scheme (i.e. one site located in STW region and the second in AfW region). • Variants 1.5 to 1.8 allow for scheme elements to be delivered and managed at a standalone location, although the scheme would be delivered on the AfW land.
2. Interfaces	L	L	L	L	• The scheme may include a number of physical interfaces, depending on the prefered route to transfer water from STW's waste water treatment works to the discharge location. • The number of physical interfaces will however, be limited if the water transfer will only occur through the existing canals. • Whilst there is a cost of managing interfaces these are relatively well understood and are expected to be simple in nature. • The CAP and the Trust will need a contractual relationship that is clear in terms of responsibility and liability. Depending on the selected Variant, SVT and AfW may also need to enter into contractual arrangements. • STW and AfW would likely look to transfer risk of asset failure to the CAP. This could be challenging as the asset will be connected with the existing canals and would need be reflected through contractual arrangements, and the CAP may look to price this risk into its contract with all relevant parties.
3. Process	L	L	M	M	• There is limited overlap in operations with STW and AfW. • Significant coordination with existing CRT operations and obligations will be required. • CRT will be able to use its existing networking planning and SCADA system to maintain the level of navihgation with minimal level of oversight. • Under Variants 1.5 to 1.8, the CAP will be able to operate more efficiently on somewhat standalone basis, although coordination between the non-DPC elements of the scheme will be required.
4. Impact on service delivery	M	M	M	M	• An unplanned outage of the asset may result in direct customer impact and potentially impact AfW's performance commitments. • Impact most likely limited to volume and not water quality or safety.
5. Flexibility	M	M	M	M	• The scheme is scalable for potential future needs. Currently two flow levels are being considered at 57Ml/d and 115Ml/d.

Discreteness Criteria	Scheme: Grand Union Canal Transfer SRO				
	Assessment				Rationale
Variant:	1.1 / 1.2	1.3 / 1.4	1.5 / 1.6	1.7 / 1.8	
					• Contractual arrangements between the CAP, STW and AfW would need to be put in place to allow for flexibility for potentially increased flow output during the concession period.
6. Control	L	M	M	M	• Preference from CRT to operate the scheme on continuance basis with an agreed base flow level, which would reduce operational risks. • High level of interaction with the canal network under Variants 1.1 and 1.2.
Overall score	8	9	10	10	**Variants 1.5 – 1.8 are considered to meet the discreteness requirements.**

Minworth discreteness test

The discreteness assessment below has been completed for four different scheme variants:

- **Variant 2.1 & 2.2**: expansion of Minworth WTW for volume of water required at GUC scheme,
- **Variant 2.3 & 2.4**: expansion of Minworth WTW and transfer pipeline to Atherstone (GUC scheme),
- **Variant 2.5**: expansion of Minworth WTW and transfer pipeline to STT scheme, and
- **Variant 2.6:** transfer pipeline from Minworth WTW to STT scheme.

Table 24 - Minworth initial discreteness test

Discreteness Criteria	**Scheme:** Minworth Reuse SRO				
	Assessment				**Rationale**
Variant	**2.1 / 2.2**	**2.3 / 2.4**	**2.5**	**2.6**	
1. Asset location	**L**	**L**	**L**	**H**	• Minworth Reuse scheme proposes to expand the existing treatment work owned by STW (Variants 2.1 – 2.5). It will require a construction of new building facilities, storage, UV channel and chambers as well as value chamber and kiosk. • The scheme may also include construction of a pipeline, if the Minworth scheme were to serve the GUC scheme (Variants 2.3 and 2.4) or the STT scheme (Variant 2.6). • Some coordination between the CAP and STW will be required during the construction period, and it's possible that the operation of the existing WTW would need to be reduced whilst construction is undertaken. • The additional treatment stages in a self contained area at the end of the existing process but is dependent on its output. • It is expected that STW will not be willing to give away the Minworth site or land to the CAP.
2. Interfaces	**L**	**L**	**L**	**H**	• The expansion works on the WTW are expected to be integrated with the existing sites. This means that a number of facilities (power, access roads etc) and processes will also need to be shared between the CAP and the existing STW works. This could make it complex to manage the interactions and interdependencies and differentiate between the existing and new interfaces arising from asset upgrade. • Due to the level of integration with existing STW assets, potentially complex contractual arrangements would need to be developed to ensure the appropriate split of responsibilities is maintained. • This is mitigated by a single connection point between the existing assets and the new assets that can be monitored. • The CAP and STW will need to also maintain continous discussions with STT and AfW to understand any changes in the output requirements.
3. Process	**L**	**L**	**L**	**M**	• It is likely that the operation of WTW's expansion will require a dedicated team, responsible for the ongoing operation and maintenance of the assets and will have frequent interactions with existing STW network on daily basis. Coordinating such interaction between the various parties could be operationally complex and also difficult to translate into contractual arrangements.
4. Impact on service delivery	**M**	**M**	**M**	**M**	• An unplanned outage of the asset could result in direct customer impacts. The scheme will be also heavily embedded in the water treatment works and therefore it may be difficult to determine which party should be liable for the unplanned outages. • Were a CAP to deliver this scheme, STW would likely look to transfer risk of asset failure to the DPC provider.

Discreteness Criteria	Scheme: Minworth Reuse SRO				
	Assessment				Rationale
5. Flexibility	M	M	M	M	• The scheme provides some flexibility to the potential flow outputs. • There is a scope to increase flow capacity at WTW via additional pumping stations.
6. Control	M	M	M	M	• The asset is expected to be used on reactive operational strategy, if connected to the GUC. • How the STT SRO expects to make use of Variant 2.5 and 2.6 (i.e. as baseload or a resilience asset) will be confirmed at a later stage.
Overall score	9	9	9	14	**Variant 2.6 is considered to meet the discreteness requirements.**

ST Sources discreteness test

The discreteness assessment below has been completed for three different scheme variants:

- **Variant 3.1**: Additional treatment of 35Ml/d at Netheridge sewage treatment works,
- **Variant 3.2**: Additional treatment of 35Ml/d at Netheridge sewage treatment works and pipeline to Deerhurst,
- **Variant 3.3**: Pipeline to Deerhurst.

Table 25 - ST Sources initial discreteness test

Discreteness Criteria	Scheme: ST Sources SRO			
	Assessment			Rationale
Variant	3.1	3.2	3.3	
1. Asset location	L	L	H	• The ST Sources scheme proposes diversion of water at the existing Netheridge sewage treatment works to STT. • Under Variants 3.1 and 3.2, the scheme will be co-located at an STW owned site, and threfore a contractual arrangement will need to be agreed with the CAP and STW. • The additional treatment stages in a self contained area at the end of the existing process but dependent on its output. • The pipeline is expected to be used and operated on a standalone basis.

Discreteness Criteria	Scheme: ST Sources SRO			
	Assessment			Rationale
2. Interfaces	M	M	H	• Under Variants 3.1 and 3.2, the expansion works on the WTW are expected to be highly integrated with the existing sites. This means that a number of facilities and processes will also need to be shared between the CAP and the existing STW works. This could make it complex to manage the interactions and interdependencies and differentiate between the existing and new interfaces arising from asset upgrade. • This is mitigated by a single connection point between the existing assets and the new assets that can be monitored. • The Mythe abstraction licence that is now owned by STW will need to be split and transferred to the CAP, however it is not envisaged that there will be any costs associated with the licence transfer. • The scheme will also include a pipeline to Deerhurst where it will connect to the STT.
3. Process	L	L	M	• It is likely that the operation of sewage treatment works exapnsion will require a dedicated team, responsible for the ongoing operation and maintenance of the assets and will have frequent interactions with existing STW network on daily basis. • Coordinating such interaction between the various parties could be operationally complex and also difficult to translate into contractual arrangements.
4. Impact on service delivery	L	L	L	• An unplanned outage of the asset could result in direct customer impacts. The scheme will be also heavily embedded in the water treatment works and therefore it may be difficult to determine which party should be liable for the unplanned outages. • Were a CAP to deliver this scheme, STW would likely look to transfer risk of asset failure to the DPC provider.
5. Flexibility	M	M	M	• Alternative operational strategies are considered relevant for an asset supplying the STT. • There may be a opportunity for WTW to service others, however, this will need to be further explored.
6. Control	M	M	M	• The consideration of alternative operational strategies is considered relevant for an asset supplying the STT. It has yet to be determined if the scheme will be used on resilienece or reactive strategy basis.
Overall score	**9**	**9**	**13**	**Variant 3.3 is considered to meet the discreteness requirements.**

A2 Value for money bridges

In addition to the assumptions outlined in section 3.1.3 above, other specific model input assumptions and adjustments have been made to ensure that various options can be effectively compared. The VfM recommendation may change depending on assumptions, especially where there is a marginal difference in DPC vs the in-house delivery model. The Minworth, GUC and STT schemes can be pursued through various options. For this discussion, we will differentiate between options and components of options. A comprehensive list of the various components is presented in the table below, each component has its associated input costs. Input costs comprise capex, opex and base year of indexation.

Table 26 - VfM scheme component

Scheme	Components
1. Minworth	
	1a. Minworth (GUC) expansion to 57Ml/d
	1b. Minworth (GUC) expansion to 115Ml/d
	1c. Minworth expansion to 115Ml/d for transfer to STT
	1d. Pipeline connecting to STT assuming 115Ml/d
2. GUC	
	2a. GUC: Minworth WTW to Atherstone @57Ml/d
	2b. GUC: Minworth WTW to Atherstone @115Ml/d
	2c. GUC: Canal works @57Ml/d
	2d. GUC: Canal works @115Ml/d
	2e. GUC: Leighton Buzzard to Chaul End @57Ml/d (abstraction, treatment, pipeline & storage)
	2f. GUC: Leighton Buzzard to Chaul End @115Ml/d (abstraction, treatment, pipeline & storage)
3. ST Sources	
	3a. Netheridge (STT) expansion to 35 Ml/d
	3b. Pipeline Netheridge to Deerhurst @ 35 Ml/d

Each option has been developed through costing the various components. Options comprise a single component, or a combination of the components as listed below.

Table 27 - VfM option construction

Option	Component 1	Component 2	Component 3
1.1	2a	2c	2e
1.2	2b	2d	2f
1.3	2a	2e	
1.4	2b	2f	
1.5	2e		
1.6	2f		
1.7	2a		
1.8	2b		
2.1	1a		
2.2	1b		
2.3	1a	2a	
2.4	1b	2b	

Option	Component 1	Component 2	Component 3
2.5	1c	1d	
2.6	1d		
3.1	3a		
3.2	3a	3b	
3.3	3b		

The VfM assessment has been performed based on project specific inputs as well as Ofwat's standard assumptions:

- **Cost & scope inputs** - The same cost estimate inputs are used for both the Factual and Counterfactual cases[30].
- **Financing costs** - PR19 allowed return vs project finance structure under DPC.
- **Cost efficiency** - Capex and opex efficiency savings under DPC in the range of 5% and 15%.
- **Additional DPC costs** - Tender (0.5% - 2%), bidder (1% - 3%) and contract management costs (£150k - £300k) associated with DPC in relation to CAP tender.
- Same **depreciation profile** under DPC and PR19.
- **Contract length** of 25 years for operation under the Mid case, 20 years under the Low case and 40 years under the High case in line with Ofwat's proposition and available information.
- **Indexation** based on CPIH of 2% in line with Ofwat's guidance[31]. Prevailing inflation rates of 7%[32] are significantly higher than the targeted inflation used for the indexation.

The cost of debt assumption is based on market rates drawn on 22 April 2022 (in-line with the price base used for the cost estimates of the project) plus pre-defined margins as per Ofwat's guidance.

Whilst the cost of debt assumptions under the DPC model have been updated, the Weighted Average Cost of Capital (WACC) as per Ofwat's PR19 Final Determination has been applied throughout the contract period for the in-house delivery model and has not been updated for cost of debt indexation or future price controls.

Severn Trent notes that timing of the VfM assessment has a significant impact on the outcome of the eligibility analysis due to the volatility in market factors and the trend of increasing interest rates which is only reflected under the DPC model in line with Ofwat's guidance. The table below expands on the standard DPC model and highlights overarching adjustments made to the standard assumptions.

Table 28 - Further adjustment to standard VfM assumptions

Key input assumptions	Item	
Customer payments	Timing	Some components that are combined to form an option have different construction periods. The assumed construction period would be the

[30] Differences in outcome of the VfM analysis between the Factual and Counterfactual are, at this time, driven by Ofwat's standard DPC assumptions (i.e. capex, opex and financing efficiencies assumed in the DPC case).

[31] Ofwat (December 2019) PR19 final determinations, Allowed return on capital technical appendix

[32] https://www.bankofengland.co.uk/monetary-policy/inflation

Key input assumptions	Item	
		maximum duration between the two component and any operating expenses would be reimbursed if there are partial or early completion of one of the components through the ARD.
Contract period	Length	An upper-case contract length has been used for 40 years due to the limited availability of forward rate data from Refinitiv Eikon as drawn on 22 April 2022. This is ten years less than the DPC upper case defined at 50 years.
Financing cost	Cost of debt	Updated from Refinitiv Eikon as drawn on 22 April 2022 using an excel based add-in and interpolation models provided by Eikon. The values used are based on the average valuation for the previous 12 end of month periods.

Further to the adjustments above, the following basic assumptions were applied to the component inputs with the aim of standardising the comparison between DPC components in relation to the in-house delivery model:

- All components were assumed to commence with the same indexation base year of 2019.
- End of contract repeat operating expenditure has been smoothed over the preceding 5 to 8 years to mimic the use of a maintenance reserve account for the syclical operating requirements, and to maintain a minimum cash balance per period.
- Significant end of contract capital expenditure, which would require additional funding, has been ingnored as it is assumed that the CAP would not make major capital expenditures prior to transfering the asset to the water company. The CAP would also be limited in its ability to raise additional finance for major capital investments with a short remaining contract period (circa less than 5 years)

VfM summary table and transfer bridges

The summary table below read in conjunction with the figures representing the net value for money of DPC as compared to the in-house delivery method. By assessing the transfer bridge figures, the drivers of value for money can be assessed for each option. Financing cost, capex efficiency and opex efficiency drives a lower NPV for the DPC delivery route. The net benefit is however reduced for lower Totex options due to the additional costs associated with DPC outweighing the benefit.

Table 29: GUC, Minworth, and ST Sources value for money test

Scheme	Option	£ difference [DPC < PR19]	% difference [DPC < PR19]
1. Grand Union Canal SRO	1.1 All (57)	£ 30m	16.00
	1.2 All (115)	£ 58m	16.15
	1.3 All excl. canal (57)	£ 22m	15.08
	1.4 All excl. canal (115)	£ 35m	14.13
	1.5 Southern assets (57)	£ 16m	13.79
	1.6 Southern assets (115)	£ 27m	13.17
	1.7 Atherstone transfer (57)	£ 1m	2.55
	1.8 Atherstone transfer (115)	£ 3m	6.24

Scheme	Option	£ difference [DPC < PR19]	% difference [DPC < PR19]
2. Minworth Reuse SRO	2.1 GUC (57)	£ 17m	13.31
	2.2 GUC (115)	£ 33m	14.35
	2.3 GUC + Atherstone (57)	£ 24m	15.47
	2.4 GUC + Atherstone (115)	£ 45m	17.48
	2.5 STT (all)	£ 32m	19.63
	2.6 STT (pipeline)	£ 17m	17.76
3. ST Sources SRO	3.1 Treatment	£ 13m	14.48
	3.2 Treatment and pipeline	£ 17m	15.44
	3.3 Pipeline	-£ 1m	-3.50

Figure 43: Grand Union Canal SRO, Option 1.1, All (57)

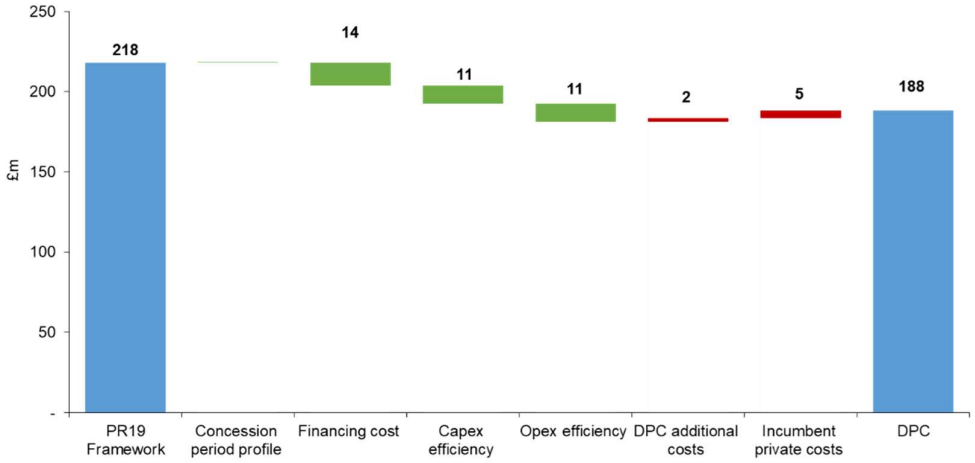


Figure 44: Grand Union Canal SRO, Option 1.2, All (115)

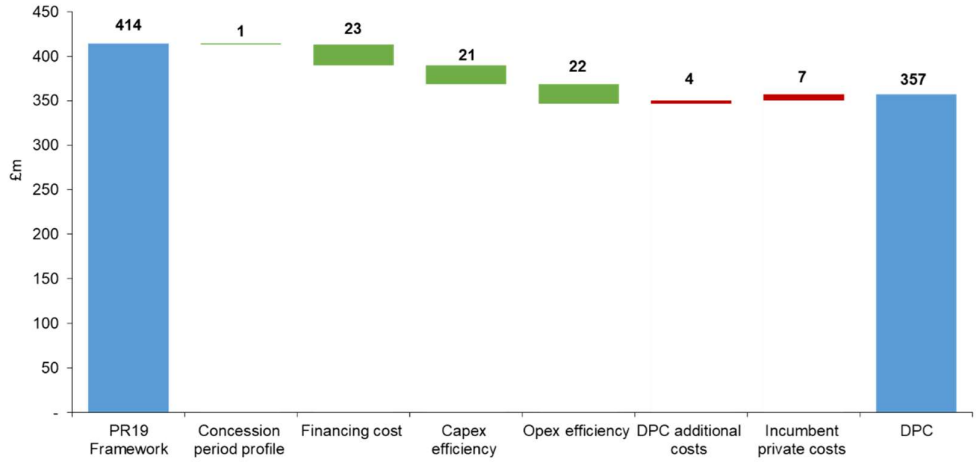


Figure 45: Grand Union Canal SRO, Option 1.3, All excl. canal (57)

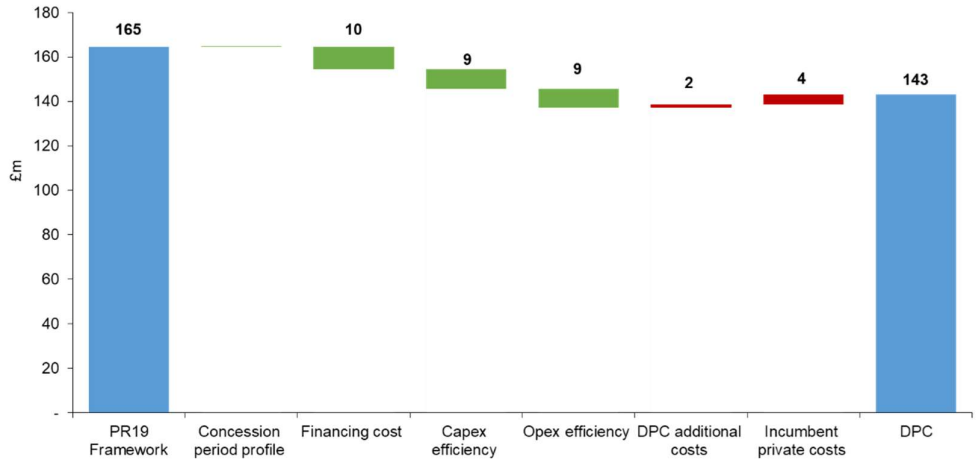


Figure 46: Grand Union Canal SRO, Option 1.4, All excl. canal (115)

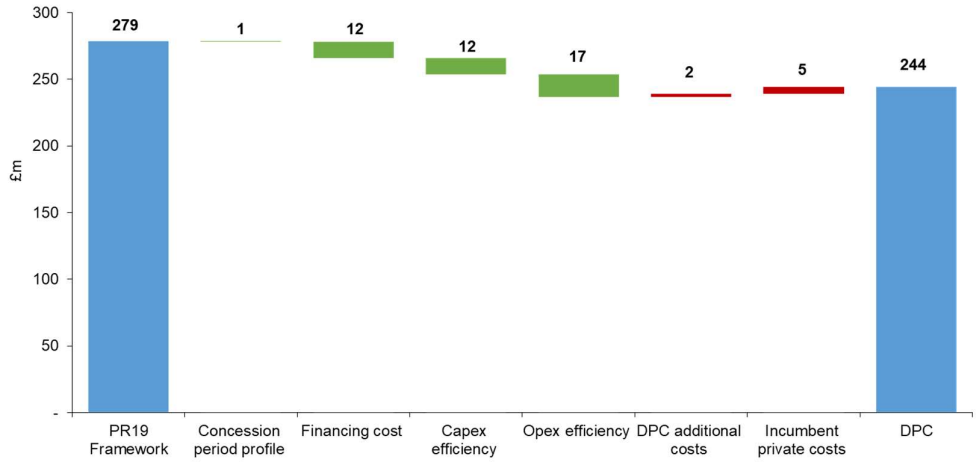


Figure 47: Grand Union Canal SRO, Option 1.5, Southern assets (57)

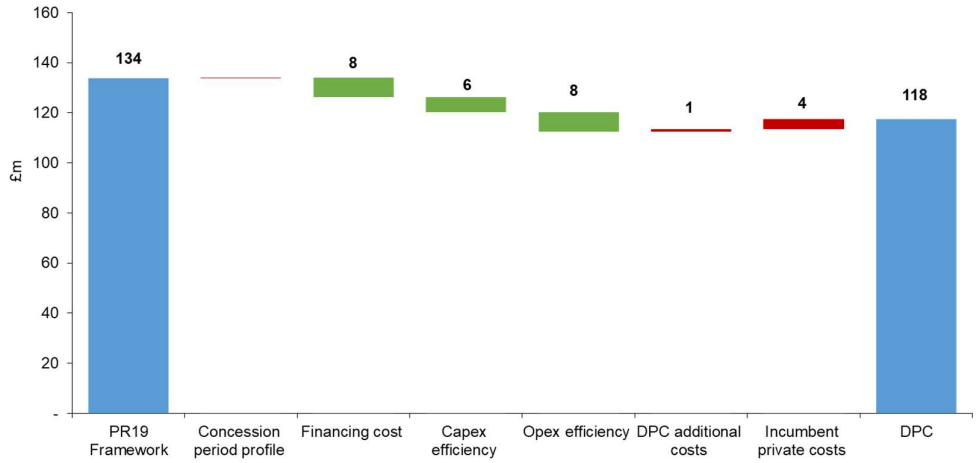


Figure 48: Grand Union Canal SRO, Option 1.6, Southern assets (115)

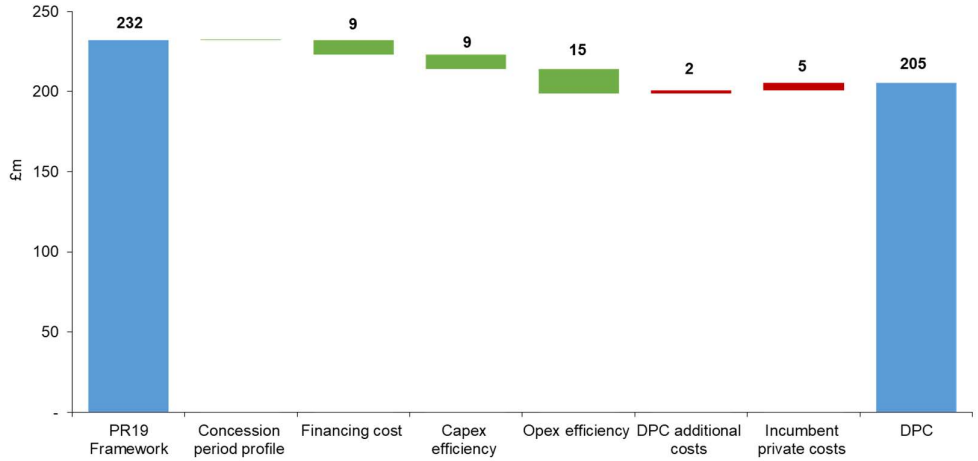


Figure 49: Grand Union Canal SRO, Option 1.7, Atherstone transfer (57)

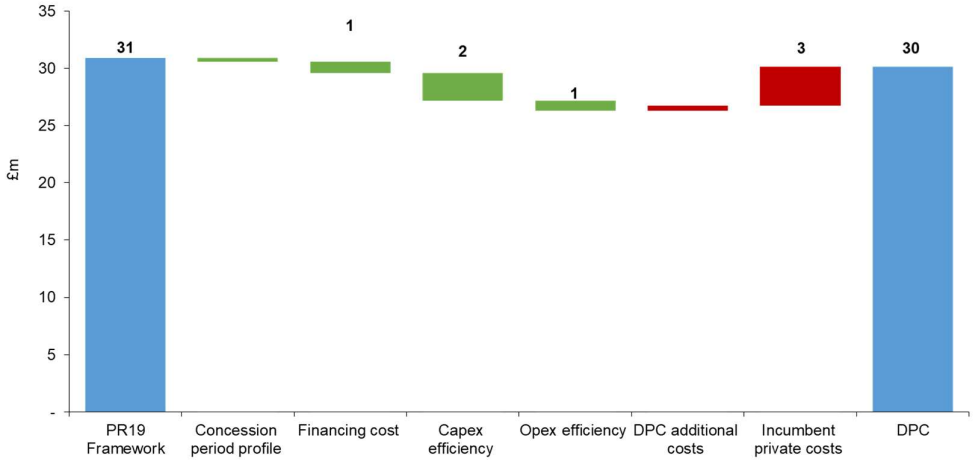


Figure 50: Grand Union Canal SRO, Option 1.8, Atherstone transfer (115)

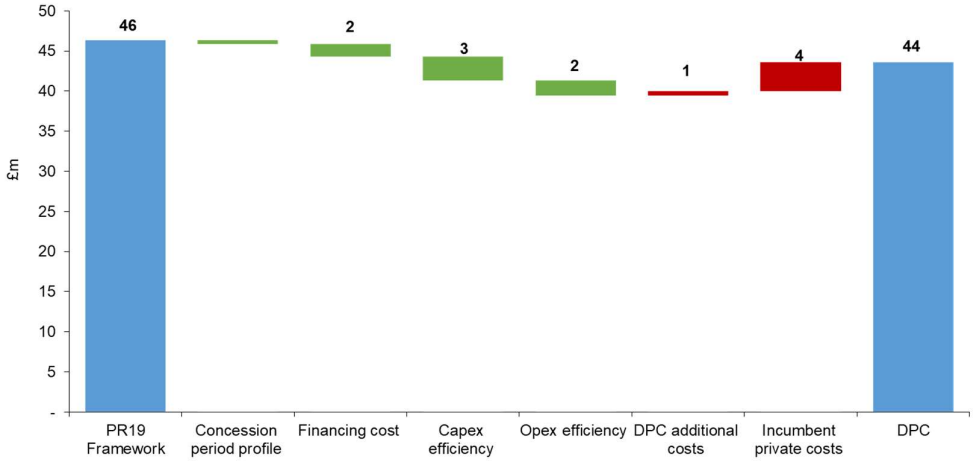


Figure 51: Minworth Reuse SRO, Option 2.1, GUC (57)

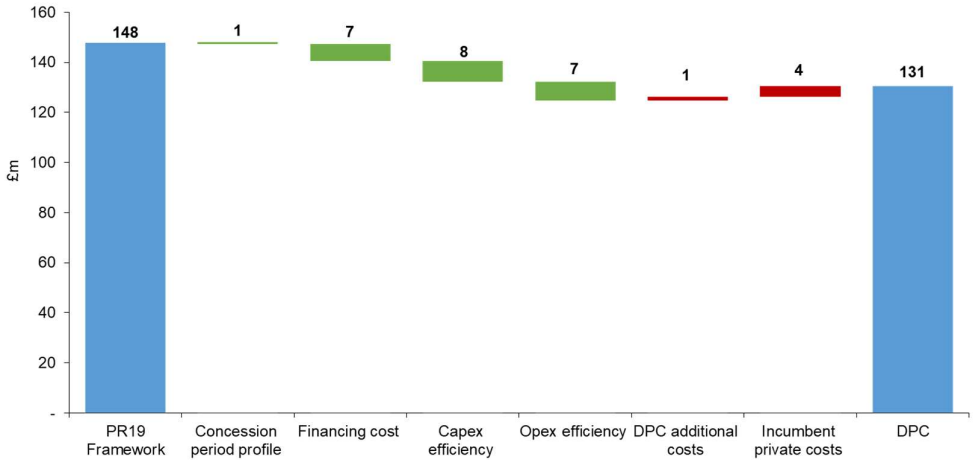


Figure 52: Minworth Reuse SRO, Option 2.2, GUC (115)

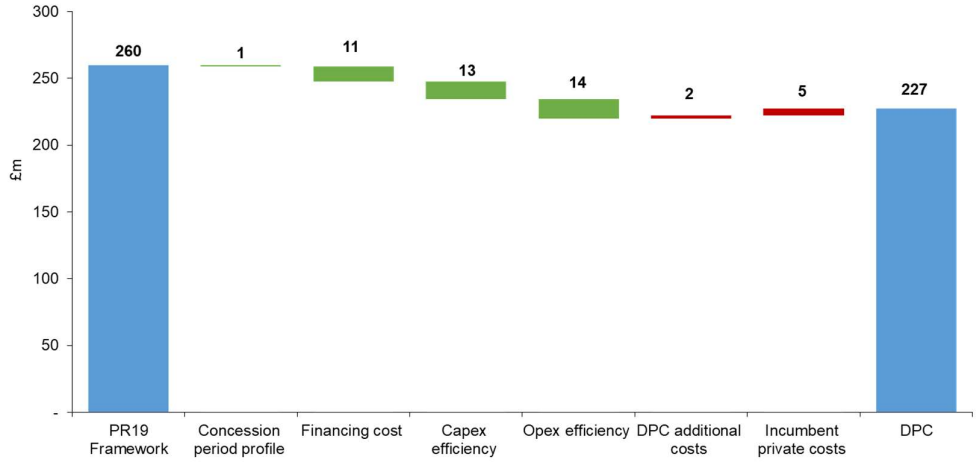


Figure 53: Minworth Reuse SRO, Option 2.3, GUC + Atherstone (57)

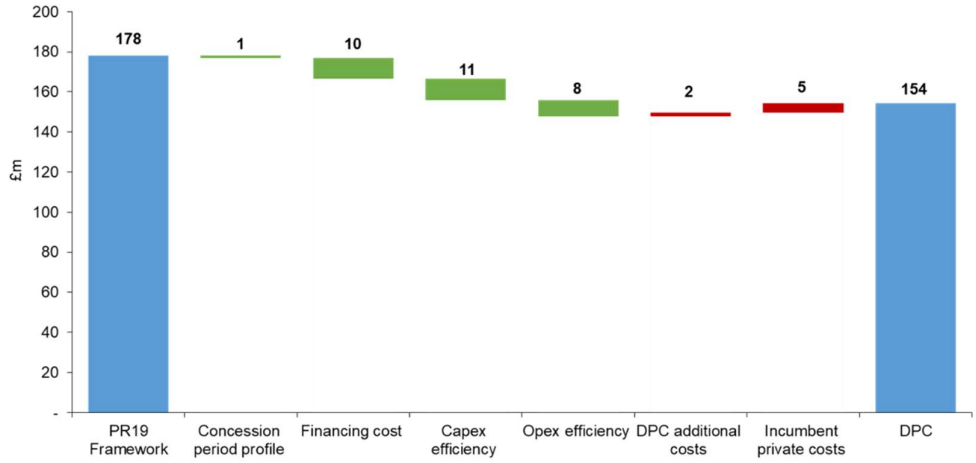


Figure 54: Minworth Reuse SRO, Option 2.4, GUC + Atherstone (115)

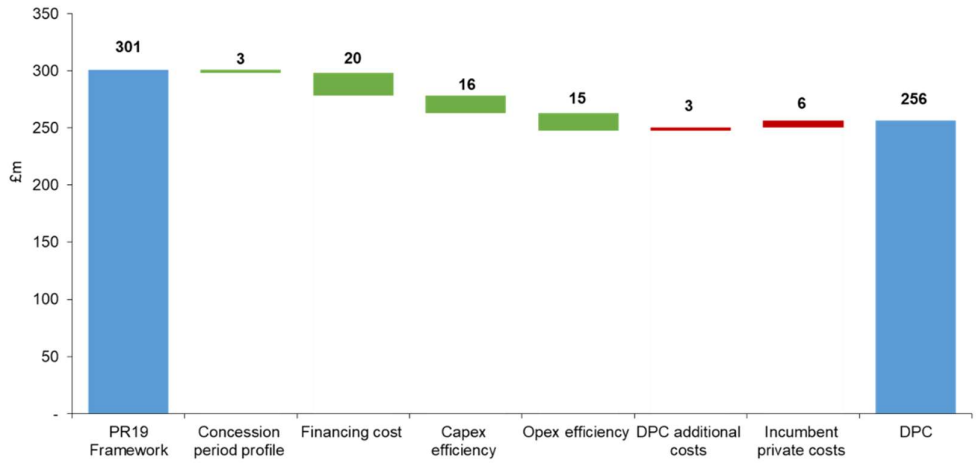


Figure 55: Minworth Reuse SRO, Option 2.5, STT (all)

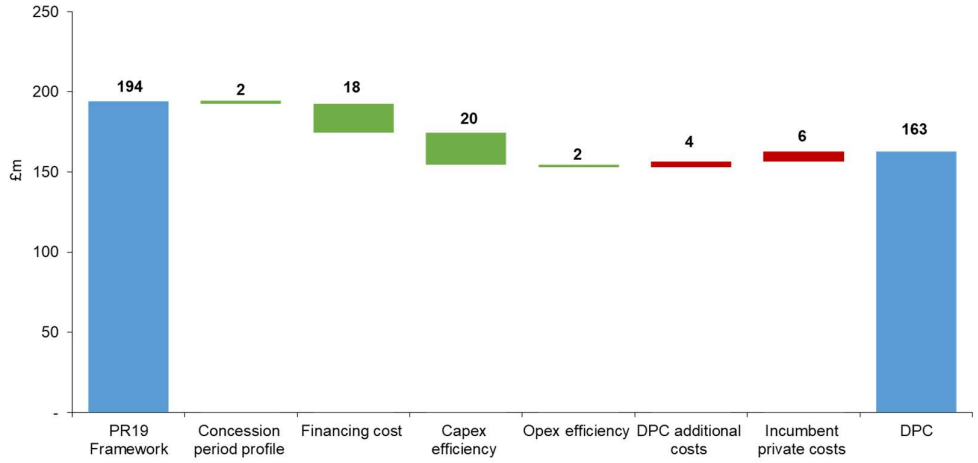


Figure 56: Minworth Reuse SRO, Option 2.6, STT (pipeline)

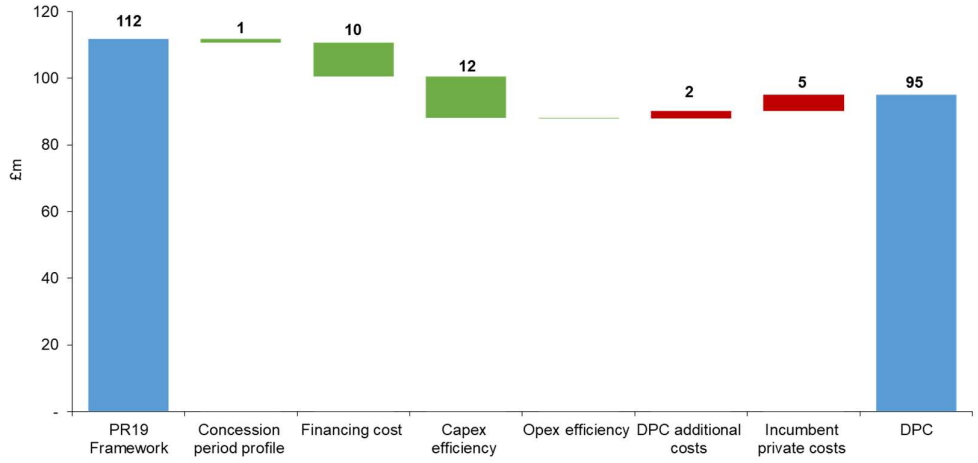


Figure 57: ST Sources SRO, Option 3.1, Treatment

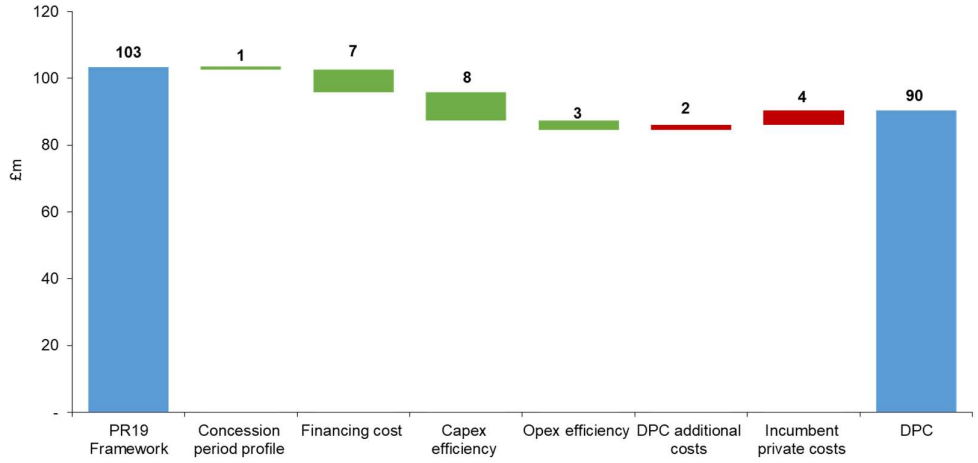


Figure 58: ST Sources SRO, Option 3.2, Treatment and pipeline

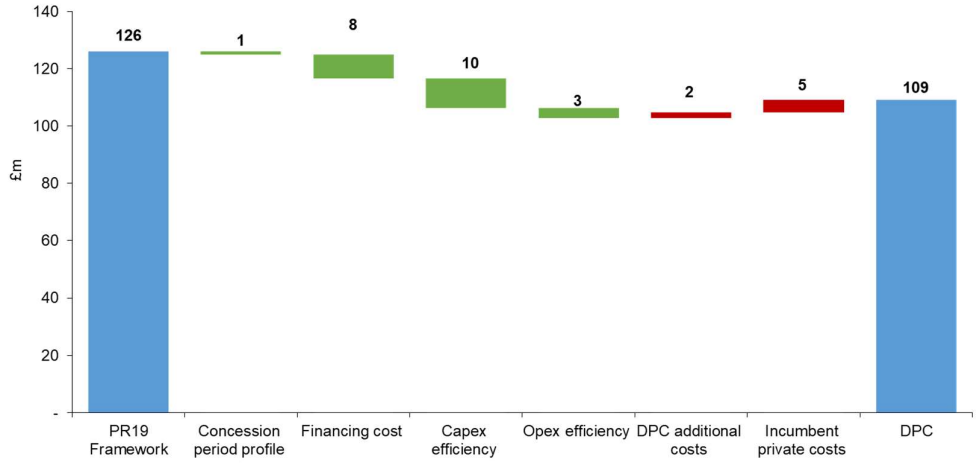


Figure 59: ST Sources SRO, Option 3.3, Pipeline