ARUP

Yorkshire Water Services Ltd

PR24 DPC Schemes

New WTW DPC Assessment Update

Final Report

13th August 2024

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1 Introduction

Yorkshire Water Services (YWS) employed Ove Arup & Partners (Arup) during 2023 on a commission to determine which of its potential Price Review (PR24) investment projects are most suitable for Direct Procurement for Customers (DPC) contracts.

This document presents an update to the Report we issued in September 2023 to revisit the DPC assessment for one of the projects previously reviewed, the New WTW water resilience project, to re-assess its suitability for DPC procurement following revisions to the proposed scheme.

Scope of Work

Our review consisted of the following activities:

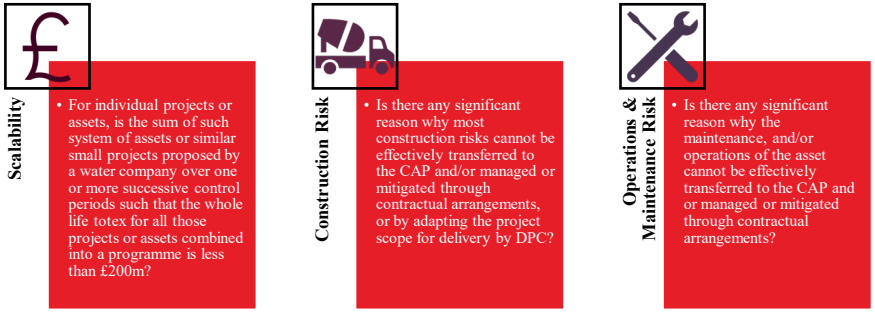
- **Revisit** New WTW project to assess suitability for DPC procurement.
- **Undertake interviews on 9th and 12th August 2024** with the relevant YWS specialists and senior management, clarifying the project updates and revised costs.
- **Revisit the Ofwat Technical Discreteness Consultation tests:** (Scalability, Construction Risk and Operations and Maintenance Risk), based on findings update our scoring in our DPC assessment Framework.

Our findings are included within the following pages.

2 Summary of DPC assessment

2.1 Ofwat DPC Guidance

Ofwat Direct Procurement for Customers – Technical discreteness guidance



The Scalability test requires that the Totex of the project or bundle of projects over one or more control periods exceeds a £200m threshold. Further guidance is provided stating that bundling of projects should occur when there are similar construction requirements and/or risk profiles and if the work is repeatable.

For the Construction Risk test there are in practice two questions:

- Discreteness test: Is the project/ programme sufficiently separable so there are no significant construction interface issues which cannot be cost-effectively managed or mitigated? An example is a constrained site where building works would interfere with existing operations resulting in difficulty to cost and pricing. This would make it unsuitable for DPC.
- Are there any construction risks that cannot be transferred and need to be retained by the water company? If too many risks need to be retained this will potentially reduce the cost effectiveness of a DPC. For example, if the CAP is to take on operations of an existing site, then it will be harder for a CAP to accurately price construction, operations and ongoing Replacement Expenditure (Repex) costs as surveys they may be allowed to undertake prior to bidding may not be able to pick up some latent defects.

Ofwat splits the Operations and Maintenance Risk into three questions:

- Are there restrictions on the transfer of regulatory obligations and if so, is there a restriction on the transfer of the functions to a third party?
- Similar to the Construction Risk test, are there significant operational interface issues that cannot be cost-effectively managed or mitigated?
- Can a CAP deliver required volume and quality outcomes? Currently most of YWS's construction work is built by third parties, and some operations are also provided by third parties. Therefore, the question is more about the confidence that a CAP can operate the facility to an appropriate standard.

2.2 Revised analysis for New WTW

New Water Treatment Works

The preferred solution for New WTW is confirmed as a new greenfield 75MLD WTW with 150ML co-located treated water storage. This option can be constructed and operated discretely from the existing WTW. Its development would provide resilience to the network and facilitate other upgrades to the existing treatment plant.

In the report presented in September 2023, the work YWS were undertaking to fully model and interpret the different scenarios was still on-going and it was not confirmed which of the new options might be selected. The proposed DPC was one option of a selection which included different combinations of WTW and storage as well as options which relied on network interventions without increasing capacity.

Following further work, YWS have confirmed that alternative incremental network upgrades cannot achieve the required level of resilience and these options have been discarded. Therefore, YWS can re-present the New WTW solution for DPC assessment with greater confidence that this is the project the business needs to progress to enhance resilience.

Some modifications to the proposed solution have been made, outlined below:

	Sept 2023 DPC Assessment	Aug 2024 DPC Assessment
WTW	Greenfield 75 MLD WTW	Greenfield 75MLD WTW
Storage	90 ML on existing WTW site 60 ML network storage	150 ML located adjacent to New WTW

The works are intended to be a greenfield development incorporating the New WTW and the new treated water storage to allow for discrete construction and operation. Land purchase is required for this combined construction. A planning strategy would need developing with outline planning obtained by YWS as a minimum prior to DPC. The outline planning permission would need to be suitably defined to allow the CAP

to develop the final design within the constraints of the outline planning and secure final planning permission.

Our assessment against the Ofwat DPC tests is summarised below:

Test Criteria	Sub-Criteria	Scoring Criteria	Score	Narrative
Ofwat: Scalability	Is Totex>£200m over the proposed DPC duration (default 25 years)?	1-5 (5 for clearly >£200m, 3 for just about £200m (i.e. >£180m)	5	The value of the New WTW is sufficient to meet the scalability test.
	If less than £200m, can projects be bundled into an aligned programme with a single payment mechanism?	1-5 (5 for clearly >£200m, 3 for just about £200m (i.e. >£180m)	5	N/A
Ofwat: Construction	Discreteness test: Is the project/ programme sufficiently separable so there are no significant construction interface issues which cannot be cost-effectively managed or mitigated?	1 - 5 (5 for totally discreet)	4	Yes. The selected option of an offsite, offline WTW construction would be discrete from existing facilities and limit impact on existing work to a minimum.
	Are there any construction risks that cannot be transferred and need to be retained?	1 - 5 (5 for none)	5	For the proposed offsite option YWS would need to purchase the land in advance of the DPC. Apart from that there would be few construction risks that could not be transferred.
Ofwat: Operations & Maintenance	Are there restrictions on the transfer of regulatory obligations and if so is there a restriction on the transfer of the functions to 3rd parties?	1- 5 (5 for none, 1 if there is a restriction on transfer of functions to 3rd parties)	5	None aware. DWI water quality compliance is assumed.
	Are there significant customer/ stakeholder interface challenges that cannot be transferred?	1- 5 (5 for none)	3	Stakeholder interfaces to be retained by YWS include: • Land purchase for WTW • Discharge consents, environmental approvals There is merit in YWS retaining planning permission risk to secure outline planning as without that the risks to the DPC will be too high. However, with any project which has an Output Specification (as opposed to a Design Specification) the CAP will need to reapply for Final Planning permission, but this should be procedural if YWS outline planning application is carefully crafted.
	Can a DPC deliver required volume and quality outcomes?	1 - 5 (5 for easily)	5	Yes. To create maximum cost efficiency opportunities, the project should be tendered with an output specification. This type of output-based project has been successfully undertaken through DBFOM in Scotland and Northern Ireland and with Design Build Operate Maintain (DBOM) in Ireland.
	Are there significant operational interface issues that cannot be cost-effectively managed or mitigated?	1 - 5 (5 for none)	4	Interfaces may include: • Shared water supply connections • Supply network connections

Validation Exercise Summary (Including changes) including optimism bias in CAPEX

Project	Sept 2023 Totex (£m)	Aug 2024 Totex (£m)	Suitable for DPC	Comments
New WTW	253	310	✓	The relocation of the storage to co-locate with the WTW improve the discreteness of this package for both construction and operation.

The solution development for New WTW is at outline stage, with WTW and storage capacity and sizing developed but no firm locations or footprints. A new greenfield WTW entails risks associated with land ownership, legal rights to access and planning, which rest with YWS and would need to be considered in advance of any DPC.

Given the early stage of concept development optimism bias of 40% has been included within capex costs. This level of optimism bias appears consistent with the allowances included within the development of other similar DPC projects, for example the Gate Two SRO submissions for other water company projects that also include treatment and some storage/transfer.

It is likely that that YWS would take a DBFOM approach, where the operation and maintenance of the WTW and storage is retained by the CAP, with raw water and treated water interfaces managed by YWS. The opportunity for whole life management of a greenfield site will allow contractor bidders for the CAP contract opportunities for design innovation and innovation in operations in areas such as energy and chemical usage which may yield value for money potential.

There may be a need for some operational costs (e.g. electricity or chemicals) to be open to market testing or benchmarking or risk taken by the Appointee. All other risks would likely to be as per the Ofwat default.

2.3 Summary of DPC assessment

We have reviewed the updated New WTW and storage package for suitability as a DPC and determined that it is potentially suitable for DPC, meeting the scalability, construction and O&M tests.

Our conclusions on suitability for DPC are summarised below:

PROJECT	TOTEX (£M)	SUITABILITY FOR DPC (OFWAT TESTS)	TENDER MODEL	TYPE OF DPC	POSITIVE VFM POTENTIAL
New WTW	310	Suitable	Late	DBFOM	Good

Appendix 1: New WTW scheme

Interviewed: **Daniel McDonough & Ian Watts (9th August 2024) and Ian Watts, Neil Whitehead & Lisa Rowe (12th August 2024)**

Note these costs have been inflated for optimism bias at 40% given early stage of concept development.

New or Replacement			New	**Start Date**	2029/30	**End Date**	2060/61	
Expenditure Profile	**Total (£m)**	**AMP 8**	**AMP 9**	**AMP 10**	**AMP 11**	**AMP 12**	**AMP 13**	**AMP14**
Development Costs*	£17	£17	£0	£0	£0	£0	£0	£0
Construction Costs excluding OB	£198	£3	£194	£0	£0	£0	£0	£0
Repex	£21	£0	£0	£0	£0	£2	£19	£0
Opex	£73	£5	£0	£13	£14	£14	£14	£14
Totex**	£310	£26	£194	£13	£14	£16	£33	£14

Key: * The assessment of Capex and Devex costs has been made by YWS based upon further development of the plan for delivery of this project. Land and planning costs have been included in the development costs.
** Totex excludes the additional YWS DPC costs for developing the project for delivery via DPC, running the procurement process and then managing the CAP over the 25-year concession.

Recommendation
This scheme is considered to be a suitable candidate for DPC. The project is considered suitably discrete, of the correct scale and with limited Operations & Maintenance and construction risks. The project would be considered viable, attractive and deliverable by a CAP and the timescales are suitable for DPC. If it was to be a DPC it would be a late DPC. The recommended approach to market would likely be a DBFOM, with raw water and treated water interfaces managed by YWS.

Context

Background

At present many customers rely on a single WTW as their only water supply. YWS has an internal policy ambition to improve resilience of its water supply operations so that no treatment works shall supply more than 75,000 properties without an alternative supply option and the single WTW falls within this category. The single WTW is also one of YWS' older WTWs and in need of significant repair and upgrade works. It is difficult to take the plant offline to undertake these works because of the lack of alternative supplies to customers. This potential DPC package is intended to reduce this risk.

New 75 Ml/d Offsite WTW and 150 Ml New Storage

A New WTW with treatment capacity of 75MLD and 150 ML of additional treated water storage in a single (multi-compartment) treated water reservoir co-located with the New WTW. This option will increase local capacity but also reduce the risk of loss of supply in the event of failures at the existing WTW. This additional resilience would allow for better flexibility to perform maintenance and keep existing assets in good condition. Provision of the new production and storage capacity will permit YWS to make much needed modifications to the existing WTW treated water and run to waste storage facilities. These are not included in the scope of the DPC but are made possible by it.

Totex for this element of the work including optimism bias on Capex is £310m (Development Costs £17m; Construction Costs £198m; Opex £73m; Repex £21m).

DPC Development

The WSS Resilience Strategy is based upon achieving improved resilience for customers. Previously the solution could have comprised one or two large projects or potentially by a portfolio of smaller works upgrades, mains twinning or replacement activities. It has been confirmed by further modelling and assessment that the alternative options do not adequately address the loss of supply risks for this area and the New WTW with additional storage is the required solution for resilience.

Originally this DPC package also included a new Abstraction from the River Aire at Bingley, this is not included in the current DPC proposal and would be retained as a future resilience improvement option if required.

Operation and Maintenance

The ideal solution for the WTW would be a DBFOM as the WTW and Storage are sufficiently physically and operationally isolated from other YWS network assets and could be deployed by the CAP as required by YWS.

BAU Procurement Approach

These projects fall within YWS and framework contractor's capabilities, similar projects have been delivered in the past. The project is under early stages of development, so the location of the WTW is not yet determined. There is still a reasonable element of development required to confirm the final scope.