

AffinityWater

AFW40 - Direct Procurement for Customers



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Summary

This appendix sets out how we have explored the suitability of projects and programmes in our proposed investment portfolio for Direct Procurement for Customers (DPC) for 2025-2030.

We have developed an eligibility framework and a detailed assessment template based on Ofwat's DPC guidance to consider our 2025-2030 investment portfolio's projects and programmes suitability for DPC.

We provide evidence of our assessment of our investment portfolio to identify the resultant programmes that may be suitable for DPC. We present our assessment of the potential DPC programmes using a structured template to consider if the programmes should be put forward as a DPC scheme.

On completion of our assessment, we have determined that, other than the Strategic Resource Options (SRO) that are to be 'DPC by default', we have no eligible programmes of work to promote for DPC at PR24, as they do not pass any of Ofwat's three tests on Programme Scalability, Construction Risk and Operations & Maintenance Risk.

Background

By driving competition in the market, our DPC strategy should encourage innovation and investment, ultimately leading to better outcomes for customers. This approach will also promote accountability among water companies, delivery partners and related third parties, as we are collectively held to high standards of performance and efficiency to deliver much-needed strategic water resources.

We fully support DPC where it has clear and demonstrable value for customers and the environment. We have supported Ofwat with the development of their DPC guidance by responding to various consultations, providing solutions to improve areas of concern, and offering advice about the practical application of the guidance in real projects. We are pleased that Ofwat has listened to the water industry's feedback in developing its final DPC guidance for Appointees¹, published in March 2023.

For PR24, Ofwat has advised that DPC will apply by default for all discrete projects above a threshold of £200m whole life totex¹. Ofwat's 'Direct Procurement for Customers – Technical discreteness guidance'², published in April 2023, also states "Strategic Resource Options (SRO) proceeding via the RAPID gated process have also been required to assess the suitability of delivering the SRO via DPC."

Historically, Affinity Water (and its predecessor companies) would have had very few projects that meet this threshold. Considering the significant investment required to address supply/demand challenges and improve resilience to climate change, it is important to explore all opportunities to finance best value solutions for our customers and the environment.

¹ https://www.ofwat.gov.uk/wp-content/uploads/2023/03/DPC_guidance_publication_version_230323_FINAL-1.pdf

² <https://www.ofwat.gov.uk/wp-content/uploads/2023/04/DPC-Technical-discreteness-guidance.pdf>

Ofwat's DPC guidance

Ofwat has advised that, for PR24, companies will:

- Identify all schemes that are over £200m of whole life totex; and
- Assess the extent to which these schemes are discrete, using Ofwat's updated 'Direct Procurement for Customers – Technical discreteness guidance' (April 2023).

Ofwat no longer requires a Value for Money assessment of delivery via DPC compared to the in-house counterfactual at this early stage in the DPC process³.

Ofwat's technical discreteness guidance sets out three tests that will be used to determine a scheme's suitability for DPC. Extracts of Ofwat's guidance describing the purpose of each test and the questions to be answered are included at Appendix A: Ofwat's DPC guidance and the three tests. In summary, the three tests are:

1. **Programme Scalability test:** does the proposed programme (or bundle of programmes) exceed £200m whole life totex? If yes, considered suitable for DPC.
2. **Construction Risk test:** can construction risks be transferred to the Competitively Appointed Provider (CAP) or be managed and mitigated through contract arrangements? If yes, considered suitable for DPC.
3. **Operations & Maintenance Risk test:** can maintenance and operations risks be transferred to the CAP? If yes, considered suitable for DPC.

In July 2023, Ofwat wrote to water companies with supplementary guidance on "*large programmes of low value assets*", for example smart meters, river quality monitors, and sustainable urban drainage systems (SuDs). In its letter, Ofwat states, "*it had not been our intention for DPC to be used to deliver these sort of programmes.*" Additionally, Ofwat "*had not expected companies to consider a programme of assets with much shorter asset lives than the expected contract length for a 'standard' DPC contract.*"

As a result of its consideration of company feedback on large programmes of low value assets, Ofwat has determined two further criteria that companies are to consider when applying the Programme Scalability test:

- 1.1 **Bundled project – individual asset value:** is the cost of each discrete asset in the bundled programme at least £5m-£10m? If yes, considered suitable for DPC.
- 1.2 **Asset life versus contract life:** is the average asset life of the project as a whole is materially less than the average expected life of a CAP agreement (i.e., 25 years plus construction)? If yes, considered suitable for DPC.

³ <https://www.ofwat.gov.uk/regulated-companies/price-review/2024-price-review/final-methodology/guidance-for-water-companies-delivering-direct-procurement-for-customers-projects/>

How we have assessed suitability for DPC

We have thoroughly assessed our proposed 2025-2030 investment portfolio, mindful of the future outline requirements for AMP9 and beyond, in line with Ofwat's published guidance for PR24.

We have developed a **DPC eligibility framework**, derived from Ofwat's guidance, to screen investments with potential to meet the conditions for DPC. We established a set of eligibility criteria designed around Ofwat's three tests, while also considering whole life cost, technical discreteness, and value for money. We also considered if there were any mitigating actions to take to ensure the integrity of our system resilience to protect services to customers in the event a DPC scheme has system resilience risks. Further, we ensured we had feedback loops in place to re-check our assessment of prior tests, should the scope have been altered to be able to pass through certain tests. While our eligibility framework was developed prior to receiving Ofwat's supplementary guidance on large programmes of low value assets, we had already considered this was an important factor under the programme scalability tests. Our eligibility framework is summarised in Figure 1.

Ofwat's three tests are central to our eligibility framework. While the tests are applied in sequence, beginning with Programme Scalability, there are feedback loops built into our assessment should we need to refine the scope of a potential scheme and repeat the assessment process.

We recognised that a simple 'yes' or 'no' to each of the three tests would not provide the confidence that we had carried out a robust assessment for the scheme's potential to be considered for DPC. Evidence must be provided to support our assessment. We developed a template to use in assessing potential DPC schemes. The template breaks down each of the tests into more in-depth questions. We have completed the eligibility assessment template for the schemes that meet the Programme Scalability test and included them at Appendix B: Detailed DPC assessment.

The SRO projects are not included in our DPC assessment, as they are to be DPC by default. More information can be found in our business plan. (Appendix AFW01- Affinity Water PR24 Business plan Section 8.4.3 Scope of DPC schemes)

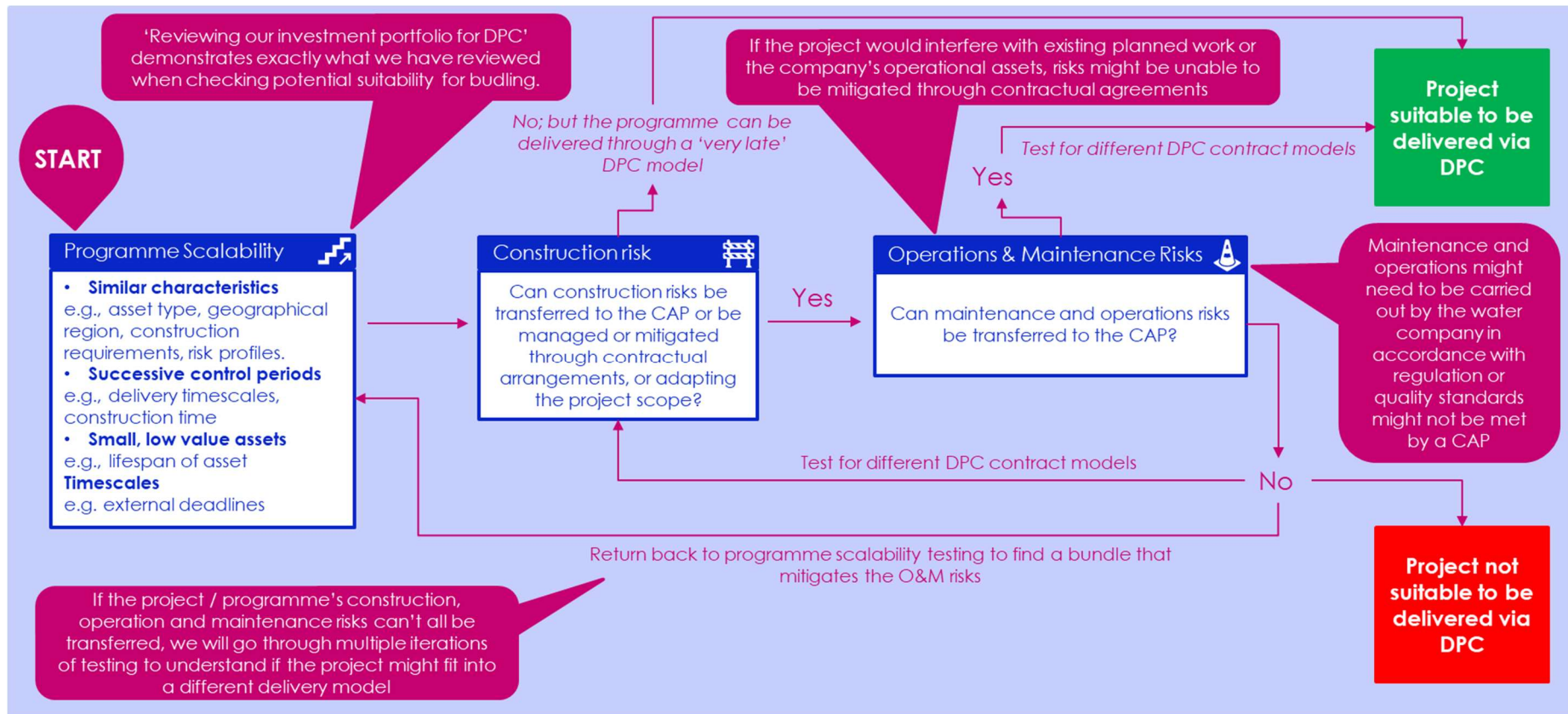


Figure 1: our DPC eligibility framework, showing feedback loops, with additional guidance notes

Meeting the Programme Scalability test

Introduction

Our eligibility framework starts with assessing if a programme can pass the Programme Scalability test.

Affinity Water is the largest water only company in England and Wales, but our size remains small in comparison to the large water and sewerage companies. We have a smaller investment portfolio than our larger neighbours. However, this has not tempered our ambition to explore opportunities for DPC schemes. We have considered all projects in our portfolio, including discrete projects from different programmes with the potential to combine into a larger scheme, to explore eligibility to first meet the Programme Scalability test.

With the exception of the SRO projects that we are co-delivering with other water companies, the largest programmes⁴ in our proposed 2025-2030 portfolio have an initial capital investment of approximately £100m. While the largest of our programmes deliver to a specific driver, such as WINEP, they are comprised of projects of different asset types. These programmes have relatively low operational and capital maintenance costs for the life of the newly built assets. The life of the new assets is usually beyond the duration of a typical DPC contract term (e.g., pipelines are 80-100 years). On their own, these programmes (comprised of discrete projects) would not meet the Programme Scalability test.

A pragmatic approach to bundling programmes

Under the Programme Scalability test, Ofwat's guidance requires companies "to demonstrate to the satisfaction of Ofwat, why they are unable to amalgamate a system of assets, or similar small projects over one or more control periods to create a programme of over £200m in value."

Ofwat's supplementary guidance on "*large programmes of low value assets*," issued to water company regulatory directors in July 2023, further clarified its expectation on bundling projects. Where a company is proposing to bundle many the same (or similar) type of assets for a DPC project, Ofwat considers the cost of each discrete asset should be at least £5m-£10m.

⁴ We use the Association for Project Managers hierarchy in managing our investment portfolio, where the portfolio is the collection of all programmes and discrete projects to deliver a company's strategy and objectives. Programmes are a group of related projects working towards the same objective/outcome, for example our sustainability reductions programme is a collection of discrete above and below ground asset projects to deliver our water abstraction reduction commitment.

We understand that Ofwat expects companies to take a pragmatic approach to the number of 'rounds' to determine that a project, or collection of related projects, does not pass the Programme Scalability test, rather than an indefinite number.

Determining suitability for DPC assessment

Introduction

While smaller than our neighbouring water companies, our investment portfolio is diverse in its scope, scale, and intended outcomes. We have reviewed all of our proposed investment programmes to consider their suitability for DPC. This section explains our approach to breaking down our investment portfolio before considering whole life totex at programme level and bundling opportunities.

Base & enhancement

At PR19, Ofwat's guidance explicitly stated that companies "were required to consider DPC for discrete, large-scale enhancement schemes expected to cost over £100 million". Ofwat's PR24 guidance has uplifted the Programme Scalability test limit to £200m whole life totex but does not reference base or enhancement.

While **base** investment programmes, such as maintenance and repair activities, could pass the Programme Scalability test in terms of pure value, they are volatile (in number and type of activity) and reactive (e.g., in response to weather such as freeze-thaw events). Capital maintenance activities, such as mains renewals, are defined at project level at the time of writing our Business Plan. The programmes are regularly reviewed to consider recent events such as bursts, unplanned interventions, and disruption to customers, to update our priority list of projects. We revise our capital maintenance programmes, where necessary, to ensure we address the highest priority investments to minimise risks to our customers and the environment. Individual projects in our capital maintenance programmes are less than Ofwat's suggested discrete asset value of £5-10m, and highly integrated into our existing assets. Our base programmes take place across Affinity Water's entire geographic region, on all types of assets. As such, it is very unlikely that a DPC contract could be created for such programmes to manage reactive and volatile programmes of work that typify our base capital maintenance programmes, however large.

The scope, outputs, and intended outcomes of **enhancement** projects and programmes are clearer. For Affinity Water's investment portfolio, enhancement projects are also typically larger in discrete asset cost than base projects. While further opportunities for efficient delivery will continue to be explored if using in-house delivery (with customers protected by Price Control Deliverables), it would be possible to agree DPC contract terms regarding outperformance to ensure best value for customers. The clearer scope and certainty of need of enhancement projects and programmes, with protection around volatility of scope and change control under contract, makes them more suitable for consideration for DPC.

High volume, low unit cost programmes

Ofwat's supplementary guidance on "*large programmes of low value assets*" clarified its intent for programmes such as smart metering to be assessed for DPC.

We agree that there are factors unique to high volume, low unit cost programmes that should be considered when assessing their suitability for DPC. They include:

1. A large number of assets of relatively low cost with a relatively short asset life (when compared to the typical duration of a CAP agreement, which Ofwat expects to be around 25 years).
2. The challenges associated with having a contract that caters for transferring the operation and maintenance of assets at different ages and conditions, some of which may have different levels of quality and quantity of asset data.
3. The pace of technological change over time – industry intelligence suggests we should expect the pace of smart metering technology to progress at a fast rate, which would be difficult to contract for.

We are following Ofwat's guidance on large programmes of low value assets, such as our smart metering programme, in that they are not suitable for DPC.

Legislative drivers and certainty of scope

Where enhancement programmes and projects are defined through other regulatory mechanisms, notably the Water Industry National Environment Programme (WINEP), we do not have a clear scope for what is to be delivered beyond 2030. In addition, while the sector may have ambitions, for example the Drinking Water Inspectorate's (DWI) Long-term Strategies to Reduce Lead Exposure from Drinking Water⁵, legislative amendments will be required to justify the levels of investment needed beyond that which can be funded through base.

While lead service pipes are physical assets, the discrete asset value is orders of magnitude lower than Ofwat's expectation of £5-10m for consideration for bundling schemes for DPC. Lead replacement programmes, even when scaled up (subject to legislative changes) or bundled with other similar programmes such as network maintenance and repair activity, would not meet the criteria for DPC under Ofwat's supplementary guidance on large programmes of low value assets (July 2023).

⁵ <https://cdn.dwi.gov.uk/wp-content/uploads/2021/02/08150815/DWI70-2-320.pdf>

Environment programmes

Much of the work under the WINEP is on assets that we do not own, but are stewards of, such as rivers and catchments. While these can be defined as 'physical' assets, our work on river morphology and catchment management is designed to deliver legislative obligations and does not involve the creation of large water treatment or distribution assets such as treatment works or pipelines. Our experience in delivering our WINEP obligations over many AMPs has also shown that there is volatility in the scope of our delivery, with new projects added by the Environment Agency and/or scope changes during the AMP. Individual project values are typically significantly less than £5-10m. Such programmes are therefore not suitable for DPC.

Certainty of costs beyond 2030

There has been some phasing of the WINEP into AMP9, but it does not cover the full scope. Some of our catchment management and river restoration programmes are phased into AMP9. While this included some costs for our WINEP submission and some minor elements of our potential Sustainability Reductions programme into AMP9, it has not been fully scoped and costed. The scope of the schemes to deliver future abstraction reductions is highly dependent on the location, timing, and volume of our water abstraction licence changes.

Without this clarity, it is not possible to estimate the whole life totex of such programmes. Our proposed 2025-2030 investment on these individual programmes falls considerably short of the Programme Scalability test whole life totex threshold but could be considered for bundling.

Reviewing our investment portfolio for DPC

Our approach

We have systematically reviewed our investment portfolio to determine its suitability for DPC. We have used Ofwat's guidance, supplemented by our eligibility framework, and a detailed template to support our assessment where programmes were deemed suitable to be considered for DPC.

As noted previously, SRO schemes are 'DPC by default.'

As we explain in the 'Base & enhancement' section, we do not consider base programmes to be suitable for DPC. We have therefore limited our assessment of DPC suitability to our enhancement programmes.

Further, as noted in the 'Legislative drivers and certainty of scope' section, the scope and scale of some enhancement programmes beyond 2030 is yet to be clearly defined, for example, those under the WINEP, or ambitions requiring legislative change to secure the necessary step-up in expenditure beyond that which can be funded from companies' base allowances (e.g. lead removal).

As set out in the 'Certainty of costs beyond 2030' section, we do not have whole life totex costs for such programmes beyond 2030. The nature of the work of many of our enhancement programmes, which includes work on non-water company owned assets (rivers and catchments), large programmes of low value assets (lead), and 'similarity' of work to bundle programmes to meet the Programme Scalability test, means that much of our enhancement portfolio is not suitable for DPC.

The remaining programmes in our investment portfolio fall under drivers relating to:

- WINEP (sustainability reductions);
- Our Water Resources Management Plan (WRMP);
- Resilience;
- Security & Emergency Measures Directive (SEMD);
- Water Quality;
- Electric Vehicles.

All business cases are presented in Appendix AFW14 Enhancement Business Cases.

In estimating the costs, we have assessed the capital investment together with capital maintenance and ongoing opex for the duration of a typical DPC agreement (around 25 years). The physical assets we propose constructing have asset lives longer than 25 years. Capital maintenance and ongoing opex costs for the duration of a DPC contract will be relatively low.

In the next sections, we explain our consideration of the programmes under each of these drivers to determine their suitability for DPC.

WINEP (sustainability reductions)

To deliver our 2025-2030 abstraction reductions commitment, we will invest **£125m** upgrading existing and building new physical assets (treatment works and pipelines) across several discrete schemes. We will spend £28m of this on our innovative proposals to relocate a number of our abstractions to reduce the impact on the environment. Taken together, these new assets will allow us to move water from areas of surplus to areas of deficit to meet customer demand.

The scope and scale of future reductions is not yet defined. While our Water Resources Management Plan (WRMP) considers a range of possible future abstraction reductions, it is not certain where and/or when those reductions will take place. Without knowing the location, volume, and timing of future reductions, it is not possible to determine the scope of schemes that will allow us to deliver the abstraction reductions. As a result, we are unable to specify the changes that would need to be made to our treatment, storage and distribution systems, or the costs, beyond 2030.

Viewed in isolation, our 2025-2030 sustainability reductions programme does not meet the Programme Scalability test threshold for DPC suitability. It also falls short of Ofwat's expectation that discrete schemes are £5-10m, as some of our sustainability reductions projects are less than £5m. Water treatment and treated water distribution schemes are not similar types of assets; however, there are often critical links, e.g., twinning an existing trunk main to enable maximum licence output from a water treatment works, and there are many competent contractors that could deliver both above and below ground works. Therefore, **our sustainability reductions programme will be considered for bundling** with programmes of similar types of works / assets and assessed for DPC suitability.

Water Resources Management Plan

Excluding the SROs, there are two other major programmes of investment driven by our WRMP. They are:

- Smart metering
- Connect 2050

We are proposing a **smart metering programme** as part of our per capita consumption reduction plans. Our 2025-2030 smart meter programme is forecast to cost **£153m**. It will continue for successive AMPs as we install new smart meters and replace our existing dumb and AMR meters, so would clearly pass the Programme Scalability test whole life totex threshold of £200m. However, Ofwat's supplementary guidance on "*large programmes of low value assets*," issued to water company regulatory directors in July 2023, explained that it had not intended for smart

metering programmes to be considered suitable for DPC. We have **excluded our smart metering programme from further DPC assessment**.

Our **Connect 2050** programme considers how we will incorporate new sources of water brought to our operating region from the SROs, how population growth changes our current operations, and the impacts of sustainability reductions on moving water between existing demand centres. It is mainly composed of interconnecting schemes (trunk mains) with some smaller upgrades to water treatment works, which enable us to move water from areas where we have a surplus to where it is needed to supply customers when our abstraction licences change or cease for the benefit of the environment. We intend for Connect 2050 to run from 2025 to 2050. It is interrelated with the future sustainability reductions programme, which is not yet fully defined for the same period. However, as abstraction reductions beyond 2030 are not confirmed in location, quantity, or timing, there is considerable potential for change to our Connect 2050 plans from AMP9 onwards. Our 2025-2030 Connect 2050 programme is forecast to cost **£89m** and is comprised of several discrete schemes.

Viewed in isolation, our 2025-2030 Connect 2050 programme does not meet the Programme Scalability test threshold for DPC suitability. Water treatment and treated water distribution schemes are not similar types of work; however, there are often critical links between discrete projects, e.g., new or upgraded boosters to utilise a new trunk main, and there are many competent contractors that could deliver both above and below ground works. Therefore, **our Connect 2050 programme will be considered for bundling** with programmes of similar types of works / assets and assessed for DPC suitability.

Resilience

We propose investing **£15m** (totex) across three programmes of investment with a resilience driver. They are:

- Flood alleviation
- Single Points of Failure (infrastructure)
- Network calming

Our flood alleviation and Single Points of Failure programmes are comprised of many discrete projects that are less than £1m each. The projects are highly integrated into our existing assets, providing resilience to high consequence, low likelihood events.

Our enhancement network calming programme is made up of three discrete initiatives. Please see Table 1. The nature of these works does not lend themselves to consideration for DPC or bundling into a larger programme as they fall into the “low value assets” category, comprising valves and telemetry equipment, and in maximising the benefits of smart management of our network. They are not suitable for bundling with other programmes.

Table 1: 2025-2030 network calming programme (enhancement)

| Programme | Component |
|---|---|
| Critical Valve & Smart Valve Ops Programme | Smart Valves for all DMA (District Metered Areas) boundary Valves |
| Watchkeeper Programme | Permanent Trunk Main Transient Monitoring |
| Enhanced Pressure Management | Pressure Management Optimisation |

Our resilience driver programmes are **not considered suitable for further DPC assessment**.

Security & Emergency Measures Direction

We are proposing to invest **£11m** (totex) in three programmes of investment with an SEMD driver. They are:

- Emergency planning
- Physical security
- Cyber security

Our proposals respond to the recent changes to the SEMD planning requirements for alternative water supplies. They include procuring tankers and providing the necessary support works. These works fall into the classification of “low value assets” and are not suitable for bundling with other programmes of similar assets to create a scheme sufficiently large to meet the Programme Scalability test. Our SEMD programmes are **not considered suitable for further DPC assessment**.

Water Quality

We are proposing **£94m** of totex investment in 2025-2030 for enhancement projects with a water quality driver. Please see Table 2.

Table 2: 2025-2030 water quality projects

| Project | AMP8 totex |
|-------------------------------|------------|
| Surface Works Iver (DWI) | £46.5m |
| Surface Works Egham (DWI) | £15.2m |
| Stortford resilience | £1.9m |
| Nitrate – Broome | £5.0m |
| Nitrate – Kingsdown | £5.2m |
| PFAS - Blackford | £10.9m |
| PFAS - Bowring & Baldock Road | £7.0m |
| PFAS - Holywell | £1.1m |
| PFAS - Wheathampstead | £0.5m |
| PFAS - Ardleigh | £0.7m |

The treatment processes to ensure water quality parameters do not exceed permitted concentration values set out in the Water Supply (Water Quality) Regulations 2016 are highly dependent on raw water quality and the existing treatment processes at those sites. Enhancing treatment processes on site, e.g., by installing an ion exchange plant to address rising nitrate levels on the raw water, will be integrated with existing treatment processes and monitoring equipment.

Our **surface works projects at Iver and Egham** are subject to a DWI notice to reduce the risks associated with cryptosporidium at our two largest water treatment works. We started the work in AMP7 after receiving the notice in December 2020, which included specified deliverables into the 2025-2030 period. We have completed our AMP7 obligations as required by the notice. We are in contract with suppliers for the design of our AMP8 works, which will be completed in AMP7 (as required by the December 2020 notice). As with 2020-2025, our 2025-2030 deliverables are interconnected with the wider treatment processes at both sites, requiring careful planning with our Operations teams to coordinate outages and manage imports and exports to maintain customers' supplies. While the projects could theoretically be bundled with other programmes to meet the Programme Scalability test whole life cost threshold, the projects are currently in delivery, and we are bound to meet specific activities by specific dates as set out in the DWI notice. It would not be possible to complete PR24 and a DPC process that would allow us to deliver our obligations in accordance with the DWI notice, therefore these schemes are **not suitable for further consideration for DPC**.

The two **nitrate schemes** are both in our Dour community. Rising levels of nitrate in the raw water cause us to throttle or cease abstraction, increasing our reliance on imports from neighbouring companies to maintain the supply/demand balance. The

likely solution is ion exchange that will be integrated into our existing treatment processes at the two sites. For our **Stortford resilience** project, we will address rising nitrate levels through the installation of a new pipeline and upgrading existing boosters to blend multiple local sources, which provides additional resilience in a vulnerable part of our supply area that serves Stansted airport. We have secured funding under Ofwat's Accelerated Infrastructure Fund to commence works on the two nitrate schemes and Stortford resilience in AMP7. These schemes will be sufficiently advanced prior to our PR24 Final Determination and are thus **not suitable for further consideration for DPC**.

PFAS⁶ are compounds found in fire-fighting foams and anti-staining coatings for carpets and textiles, among other uses. There are multiple PFAS compounds present in some of the groundwater aquifers from which we abstract water to supply to customers. Some PFAS have been identified as being persistent, bio-accumulative in the environment and potentially toxic in terms of human health. In January 2021, the DWI published revised guidance for the parameters PFAS and PFOA, reducing the levels significantly, with a further update in July 2022 (IL 03/22). Our **PFAS** schemes are proposed to take the necessary action to meet this improved standard by replacing the media in our granular activated carbon filters. We have secured funding under Ofwat's Accelerated Infrastructure Fund to progress construction work on Holywell PFAS in AMP7. While Blackford and Bowring & Baldock Road meet Ofwat's expected discrete asset value (£5-10m), the total value of the PFAS projects is significantly less than £200m whole life totex. The nature of the works, being integrated into the wider treatment processes at each site, the frequency of testing for effectiveness, and the consequence of PFAS failures (throttling or ceasing site output), make these schemes impossible to consider bundling to form a larger scheme. These schemes are **not suitable for further consideration for DPC**.

Electric Vehicles

Achievement of our net zero by 2030 ambition requires a significant change to our fleet of vehicles. The nature of our work demands travelling long distances as we visit the edges of our operating region to carry out routine and responsive activities. We are proposing investing **£4.3m** in electric vehicles in 2025-2030 (in addition to base totex).

The asset life of charging apparatus is around seven years. It is also likely that the pace of change of technology associated with low carbon vehicles and charging apparatus will be rapid, for example, battery development and whether hydrogen fuelled vehicles could be part of the future range of options. This investment is not like any other asset types or delivery mechanisms to be bundled into a larger scheme. These factors make our electric vehicle proposals **unsuitable for further consideration for DPC**.

⁶ PFAS: perfluoroalkyl and polyfluoroalkyl substances

Programmes suitable for DPC assessment

Given the similarity of asset types, clarity of scope, and >£200m whole life totex, we have bundled our **2025-2030 WINEP sustainability reductions** and **WRMP Connect 2050** programmes for consideration of suitability for DPC.

We have completed a comprehensive review of our 2025-2030 WINEP sustainability reductions and WRMP Connect 2050 programmes against Ofwat's DPC guidance in Appendix B: Detailed DPC assessment.

Conclusion of our detailed DPC assessment

Our Connect 2050 and sustainability reductions programmes in 2025-2030 is forecast to be £214m. As a bundled scheme, this meets the Programme Scalability threshold for whole life totex.

The scope of work is across our Central operating region, and comprises:

- 12 booster pumping stations (new and upgraded);
- Two reservoir cells (adjacent to existing storage facilities);
- 13 pipeline projects (of different sizes and lengths);
- Two new adsorbers to increase granular activated carbon filtration capacity (at existing water treatment works);
- One programme of works to address turbidity in our Blackford group of sources, including borehole re-drilling, re-lining, pump replacements, increased capacity of sodium hypochlorite for treatment, and a new pressure filter system;
- One programme of works to relocate eight of our existing abstraction licences to reduce environmental impact and accelerate delivery of our sustainability reductions programme;
- Various smaller works, including interconnections, disconnections, valve arrangements, and additional reservoir inlets.

While the collection of projects together meets related drivers under WINEP, we acknowledge that there are many different types of assets in these programmes. They are also not part of a discrete system, as they are spread across our supply area.

Figure 2 shows the whole life totex of the discrete projects in our Connect 2050 and sustainability reductions programmes.

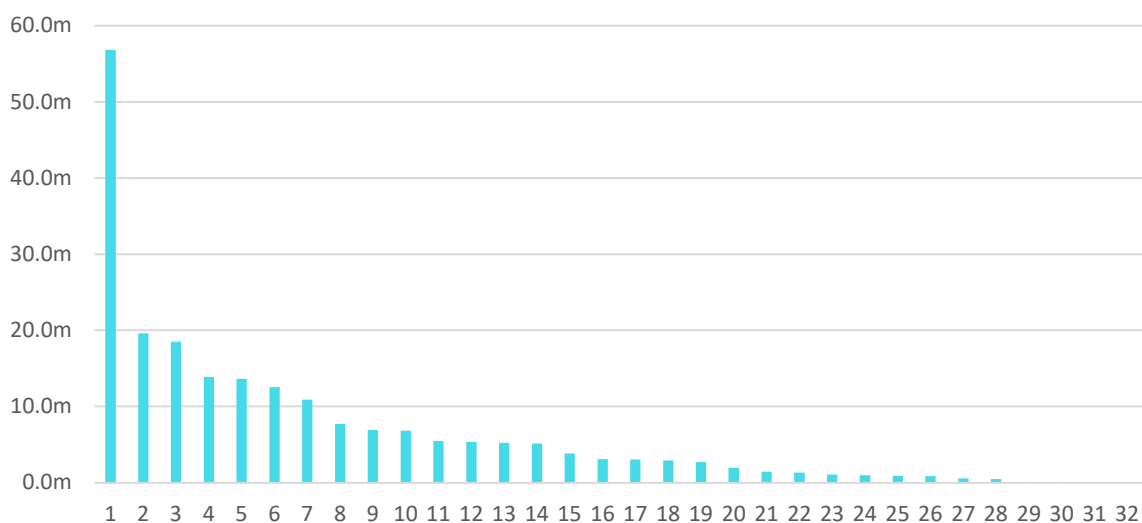


Figure 2: Connect 2050 and sustainability reductions programmes whole life totex

14 projects are meet Ofwat's expectation that discrete projects in a bundled scheme are at least £5-10m. The 14 projects have an estimated total value of £41m. This drops the value of the bundled scheme to £188m, below the Programme Scalability threshold. The bundled scheme is made of projects of different types of assets – trunk mains, reservoirs, additional treatment at existing works, and pumping stations. These are not “projects of the same (or similar) type of asset.” They are geographically spread across our Central operating region, and not part of a discrete ‘system’ within Affinity Water’s production and network operations. Some of the projects are required much sooner than December 2029 to meet drought resilience targets; as such, we propose commencing some of the projects early under transition funding. There are no other programmes in our portfolio that are suitable to re-bundle and reassess for Programme Scalability. Under scrutiny against Ofwat’s guidance, the bundled scheme **does not pass the Programme Scalability test.**

The discrete projects will deliver different assets. It may be challenging for a CAP to construct (or establish a supply chain to construct) all of the different asset types. We have not yet carried out any market engagement to understand levels of interest of such a bundled scheme, but we are prepared to do so. Limiting the scope to assets of the same or similar type would result in the bundled scheme falling considerably short the Programme Scalability test. While construction risks are expected to be ‘standard’ and known, there will be disruption to the local community. Installing new pipelines will require notification of traffic management and diversions, which may be disruptive for some time. There may be local resistance to planning and land purchase to build new reservoir cells and booster pumping stations, where the CAP may be unable to influence local planning to be able to deliver their projects on time. The biggest construction risk for the CAP is likely to be securing the outage for final connections and commissioning; while this risk is the same for the in-house delivery option, we have greater flexibility to redeploy resources to minimise consequence costs. While it would be possible to pass the Construction Risk test if it was applied to each discrete risk in the bundled scheme, when taken together, we believe there would be considerable issues for a CAP in appointing several different suppliers across the range of asset types. We believe the bundled scheme **does not pass the Construction Risk test.**

The majority of the above ground projects (booster pumping stations, reservoir cells, and additional treatment) are in addition to our existing treatment and storage assets. Under the in-house alternative, new assets would be integrated into our existing Control Operations and telemetry systems. They would be operated using our existing software and maintained by Affinity Water's existing, skilled teams. It would not be possible to separate the assets for operation and maintenance under a separate DPC contract. The bundled scheme **does not pass the Operations & Maintenance test.**

We conclude that our 2025-2030 Connect 2050 and sustainability reductions programmes are **not suitable for DPC.**

Appendix A: Ofwat's DPC guidance and the three tests

Introduction

Ofwat has determined that, for PR24, companies will:

- Identify all schemes that are over £200m of whole life totex; and
- Assess the extent to which these schemes are discrete, using Ofwat's updated 'Direct Procurement for Customers – Technical discreteness guidance' (April 2023).

Ofwat no longer requires a Value for Money assessment of delivery via DPC compared to the in-house counterfactual at this early stage in the DPC process⁷.

Ofwat's technical discreteness guidance sets out three tests that will be used to determine a scheme's suitability for DPC. The three tests are:

1. **Programme Scalability test;**
2. **Construction Risk test;** and
3. **Operations & Maintenance Risk test.**

Programme Scalability Test

Ofwat's guidance states,

"The Programme Scalability Test is a test of size. The objective of the test is for companies to demonstrate to Ofwat how they have sought to maximise the added value of DPC through application of the test to all relevant assets. The aim of the test is to encourage water companies to consider where a system of assets; or a number of projects with similar characteristics; proposed for delivery over one or more successive control periods could be combined where whole life totex of the combined or bundled system of assets meets the test threshold.

This test applies for projects regardless of whether they separately meet the threshold of £200m whole life totex.

When applying the programme scalability test, water companies are required to demonstrate to the satisfaction of Ofwat, why they are unable to amalgamate a system of assets, or similar small projects over one or more control periods to create a programme of over £200m in value. It is expected that companies should consider bundling schemes, even when individual projects are over £200m to provide even more cost-effective solutions.

⁷ <https://www.ofwat.gov.uk/regulated-companies/price-review/2024-price-review/final-methodology/guidance-for-water-companies-delivering-direct-procurement-for-customers-projects/>

All programmes that meet the programme scalability test with a whole life totex programme value of at least £200m, will then be considered for the other two tests, namely the construction risk test and the operations and maintenance risk test."

The test that must be answered is:

For individual projects or assets, is the sum of the whole life totex for the single project or combined projects/assets proposed by a water company over one or more successive control periods less than £200m?

Construction Risk Test

Ofwat's guidance states,

"The objective of the Construction Risk Test is for companies to clearly identify the construction risks associated with a single or programme of projects and consider whether and how construction risks can be effectively transferred to the CAP.

In the UK water industry, companies typically outsource all construction projects, which includes risk around delivery of the project. Most projects can be developed to allow the transfer of construction risk and therefore we consider that such projects are capable of being undertaken by a CAP. We accept that companies must assess the construction risk and the ability to transfer risk on the best information that is available at a point in time. We further recognise that in a small number of instances, there may be project-specific issues which may make transferring construction risk to a CAP prohibitive.

For the application of the construction risk test, companies are required to demonstrate to the satisfaction of Ofwat, why the third party may face events that would cause significant interface issues which cannot be overcome by contract or mitigated through other means.

Companies should provide evidence to explain why the risk transfer isn't suitable for DPC or could be cost prohibitive, and how the risk would be managed through the alternative in-house proposal. We would also expect a company to provide evidence on whether the issue could be resolved by reducing the scope of the project that is included in DPC and then reapplying the scalability test.

Given the complexity of construction risk we recognise in some circumstances it may limit the ability to deliver a project via DPC."

The test that must be answered is:

Is there any significant reason why most construction risks cannot be effectively transferred to the CAP and/or managed or mitigated through contractual arrangements, or by adapting the project scope for delivery by DPC?

Operations & Maintenance Risk Test

Ofwat's guidance states,

"The Operations & Maintenance risk covers cases where maintenance and/or operations of the asset cannot be effectively transferred to a third-party provider. This may be because the CAP would not be able to deliver the required volume of services to be made available for use when needed, or would not be able to meet quality standards specified in the contract, or where certain regulatory functions of the appointee or a regulator cannot be exercised by or in relation to a CAP. In most cases, we expect the operations and maintenance risk to be able to be transferred to the CAP and managed through contractual arrangements, however, it is recognised that in a small number of instances, there may be project-specific issues or barriers identified which may make transferring operations and maintenance risk to a CAP prohibitive.

If the response to the Operations & Maintenance risk test is yes – that indicates some or all of the project or programme may be unsuitable for DPC.

All schemes passing the Operations & Maintenance risk test with a 'No' response will be considered suitable for DPC by default (assuming the scalability and construction risk tests have been met). Where the response is yes, Ofwat expects companies to consider what parts of the project are suitable for delivery by DPC, for example, some parts of the project such as interface works may be able to be constructed by the CAP but transferred back to the water company on commencement of operations. While for other projects, a design, build, finance, transfer or design, build, finance, maintain form of contract may overcome issues identified by the Operations & Maintenance risk test. Where only parts of the project may be suitable for delivery by DPC, the Programme Scalability Test should be reapplied.

When applying the Operations & Maintenance risk test, water companies are required to clearly demonstrate to the satisfaction of Ofwat, why the project or programme cannot be considered DPC by default under this test and explain the risks that are unable to be transferred to a CAP to manage."

The test that must be answered is:

Is there any significant reason why the maintenance, and/or operations of the asset cannot be effectively transferred to the CAP and or managed or mitigated through contractual arrangements?

Recent amendments: low value asset programmes

In July 2023, Ofwat wrote to water company regulatory directors with supplementary guidance on "*large programmes of low value assets*", for example smart meters, river quality monitors, and sustainable urban drainage systems (SuDs).

In its letter, Ofwat states, “*it had not been our intention for DPC to be used to deliver these sort of programmes.*” Additionally, Ofwat “*had not expected companies to consider a programme of assets with much shorter asset lives than the expected contract length for a ‘standard’ DPC contract.*” Ofwat acknowledges that its technical discreteness guidance (April 2023) “*left the door open for companies to consider whether a programme of small assets might be suitable for delivery for DPC but asked companies to consider the appropriateness of delivery via DPC*”.

As a result of its consideration of company feedback on large programmes of low value assets, Ofwat has determined two further criteria that companies are to consider when applying the programme scalability test:

Bundled project – individual asset value: where a company is proposing to bundle a large number of the same (or similar) type of assets for a DPC project, we would expect the cost of each discrete asset to be at least £5m-£10m. ... We expect bundling of multiple projects such as multiple treatment works, large pipelines etc. but are not expecting bundling of much smaller assets such as meters.

Asset life versus contract life: where the average asset life of the project as a whole is materially less than the average expected life of a CAP agreement (i.e., 25 years plus construction) then we do not expect the project to be proposed as a DPC project. This includes smart meters, which have a materially shorter life than the average CAP agreement is expected to have.

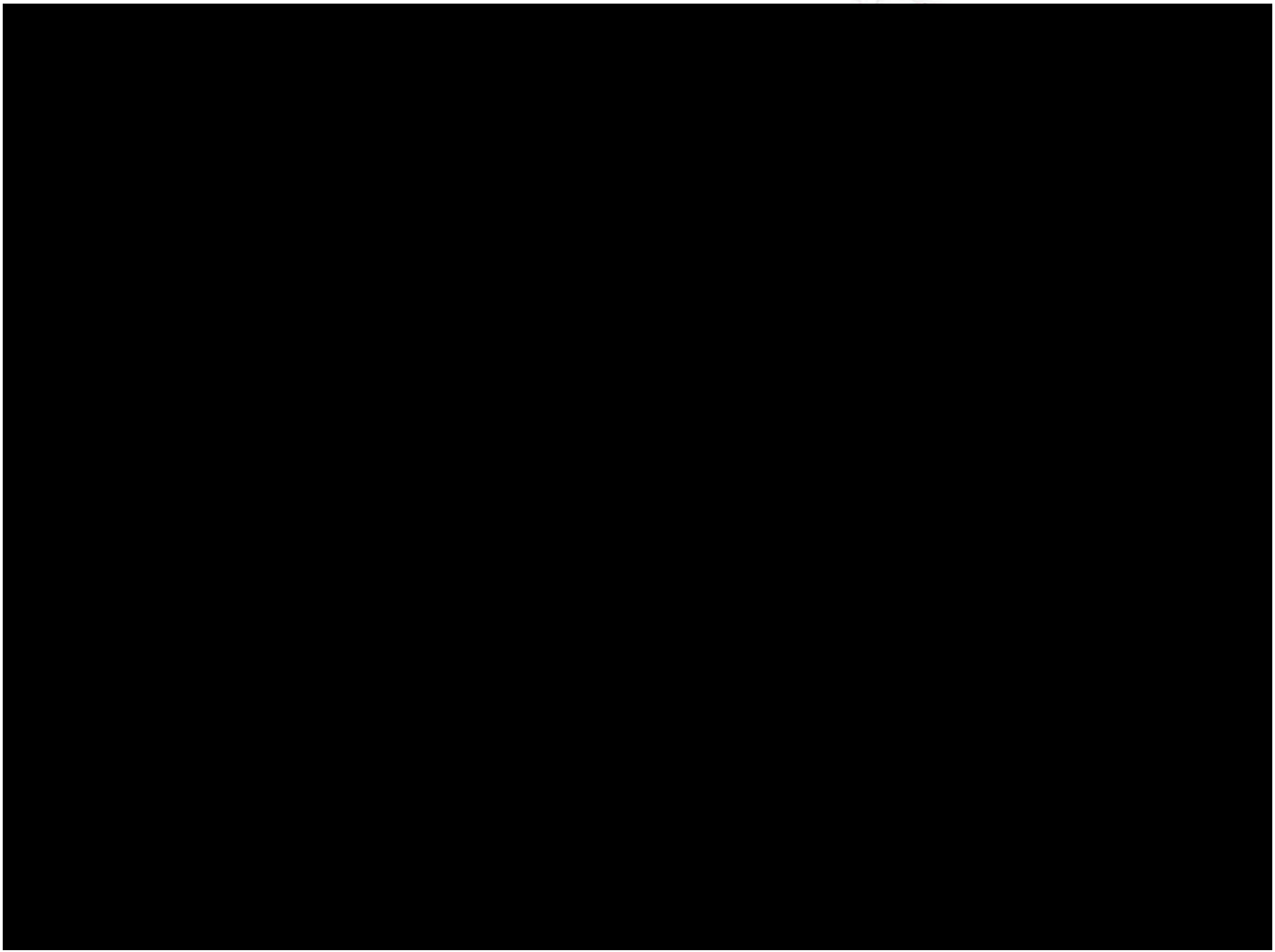
Ofwat's letter asks companies to note that “*the above criteria are intended to be applied to bundled projects of the same (or similar) type of asset/project (e.g., smart meters, river quality monitoring, SuDs) and are not intended to capture assets that might be included as part of a system or as part of single project*”.

Appendix B: Detailed DPC assessment

Connect 2050

Introduction

Connect 2050 builds on our Supply 2040 programme that we started in AMP7 with enhancement funding allocated at our PR19 Final Determination. Connect 2050 considers how we will incorporate new sources of water brought to our operating region from the SROs, how population growth changes our current operations, and the impacts of sustainability reductions on moving water between existing demand centres. It is mainly comprised of interconnecting schemes that enable us to move water from areas where we have a surplus to where it is needed to supply customers when our abstraction licences change or cease for the benefit of the environment. The Connect 2050 business case is presented in Appendix AFW14 Enhancement business cases. Figure 3 presents the discrete projects that make up Connect 2050 in 2020-2025 and 2025-2030.



We intend for Connect 2050 to run from 2025 to 2050. It is interrelated with the future sustainability reductions programme, which is not yet fully defined for the same period. However, as abstraction reductions beyond 2025-2030 are not confirmed in location or quantity, there is considerable potential for change to our Connect 2050 plans from 2030 onwards.

The scope and whole life totex of our Connect 2050 programme is presented in Table 3, and our sustainability reductions programme in Table 4. More information on both programmes is presented in AFW14 – Enhancement investment cases.

Table 3: Scope of Connect 2050 programme

| Project | Scope | Totex (£m) |
|--|---|------------|
| Egham to Iver | New trunk main 10.6km of 700mm & New 45MI/day booster pumping station (BPS) | 62.17 |
| Stanwell Moor upgrade (Midway North) | Upgrade existing BPS from 17MI/day to 25MI/day | 1.93 |
| Grove Park link (Wafford to Heronsgate Interconnector) | New 25MI/d bidirectional BPS + land purchase | 3.04 |
| Wey deployable output (Increase DO Egham / Chertsey / Walton) | GAC adsorber capacity increase: two at Chertsey (25MI/d) & GAC adsorber capacity increase: one at Walton (15MI/d) | 7.70 |
| Hadham Mill – 20MI cell | 1 x 20MI storage reservoir cell at Hadham Mill site | 6.90 |
| Hills - 10MI | 1 x 10MI storage reservoir cell at Hills site | 6.83 |
| Total | | 88.57 |

Table 4: Scope of sustainability reductions programme

| Project | Scope (SRs - Sustainability Reduction Schemes) | £m |
|---------------------|---|-------|
| Kings Walden | Delivery of multiple dWRMP network reinforcement schemes: Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations Local Reinforcement Scheme: Installation of 450m of new 250mm HPPE Main Site specific decommissioning works (cut and cap mains, removal and disposal of equipment etc.) Network Reconfiguration | 10.92 |
| Codicote | Delivery and implementation of interdependent dWRMP network reinforcement schemes: Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main | 5.21 |

| Project | Scope (SRs - Sustainability Reduction Schemes) | £m |
|------------------------|---|------|
| | <p>New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>Decommissioning and Reconfiguration Works at Codicote Site:</p> <p>Cut & Cap of 4"CI Main at last supplied property in Dark Lane (Long Valley) Decommissioning of UV Assets Decommissioning of Chlorination Assets PRV Installation (to address increase to maximum network pressure resulting from rezone) Network Operations: Rezoning Works and Associated Flushing Programme. 260m of 90mm HPPE Main to maintain DG2 pressures after rezone</p> <p>Codicote Reinforcement Works</p> <p>Installation of two sections of new Reinforcement Main (twinning of SPoF sections of main): 1.1 km of 315mm HPPE main 3.1km of 180mm HPPE main Network Investigations and hydraulic modelling work</p> | |
| Amersham | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS:</p> <p>9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations Changes to Pump Operation - Utilisation of New Pumps Optimised for new ADO / PDO Delivery.</p> | 3.07 |
| Gerrards Cross | <p>Provision of an Amazon Filter based Filtration installation sized for peak DO, along with replacement of existing pumps to match the varying flow requirements between average and peak DO and further reduce risk associated with turbidity on start-up.</p> | 0.89 |
| Great Missenden | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS:</p> <p>9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations Pump Tests / Telemetry Software Changes / Commissioning and Monitoring of new Pumping Profiles</p> | 1.00 |
| Piccotts End | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS:</p> <p>9km of 650mm Trunk Main</p> | 2.91 |

| Project | Scope (SRs - Sustainability Reduction Schemes) | £m |
|------------------------|--|--------------|
| | New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations | |
| Redbourne | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>ST12 Markyate BPS Upgrade: Installation of new, small booster station</p> <p>Redbourne Reinforcement and Decommissioning Works: Decommissioning Works at Redbourn Site: Cut & Cap of 225mm Main at Junction of Dunstable Road (A5183) / Meadow View Decommissioning of UV Assets Decommissioning of Chlorination Assets Cross-Connection 1: 180mm cross-connection to Tower Inlet main at Redding Wood Water Tower Cross-Connection 2: 180mm cross-connection off the 300mm Friars Wash-Bow Bridge Trunk Main Network Reconfiguration 1: Open DM6803. Install Washouts as Enabling Works. Assume meter replacement required. Network Reconfiguration 2: Fully Open Hemel Hempstead Road Valve (HHRV). Decommissioning Works, Valve Operations and Network Upgrades.</p> | 5.14 |
| Kensworth Lynch | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>ST12 Markyate BPS Upgrade: Installation of new, small Booster station</p> <p>Kensworth Lynch Reinforcement Works: 3.2km of new 250mm Main from Friars Wash-Chaul End Trunk Main to the Kensworth Lynch site Associated connection of reinforcement main at tank inlet at Kensworth Lynch Site Specific Reconfiguration of operational assets.</p> | 13.65 |
| Total Cost: | | 42.78 |

| Project | Scope (SRs – No Net Deterioration Schemes) | £m |
|--------------------------|--|-------|
| Chalfont St Giles | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations. Changes to Pump Operation – Installation and Utilisation of New Pumps Optimised for new ADO / PDO Delivery.</p> | 1.33 |
| Causeway | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>Heronsgate to Bovingdon TM and BPS: 11.4km of 500mm Trunk Main New Booster Station (40 MI/d)</p> <p>Hadham Mill Storage: Construction of 10 MI reservoir cell at Hadam Mill Telemetry and Software Changes / Commissioning and Monitoring of new Pumping Profiles.</p> | 18.52 |
| Hare Street | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>Heronsgate to Bovingdon TM and BPS: 11.4km of 500mm Trunk Main New Booster Station (40 MI/d) Pump (flow) Tests for Existing Assets / Software Changes / Commissioning and Monitoring of New Pumping Profiles (on site and in network).</p> | 1.44 |
| Standon | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>Heronsgate to Bovingdon TM and BPS: 11.4km of 500mm Trunk Main New Booster Station (40 MI/d)</p> | 0.48 |

| Project | Scope (SRs – No Net Deterioration Schemes) | £m |
|----------------------|--|-------|
| | Pump (flow) Tests for Existing Assets / Software Changes / Commissioning and Monitoring of New Pumping Profiles (on site and in network). | |
| Sacombe | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>Heronsgate to Bovingdon TM and BPS: 11.4km of 500mm Trunk Main New Booster Station (40 MI/d)</p> <p>Pump (flow) Tests for Existing Assets / Software Changes / Commissioning and Monitoring of New Pumping Profiles (on site and in network).</p> | 5.46 |
| Porthill | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>Heronsgate to Bovingdon TM and BPS: 11.4km of 500mm Trunk Main New Booster Station (40 MI/d)</p> <p>Pump (flow) Tests for Existing Assets / Software Changes / Commissioning and Monitoring of New Pumping Profiles (on site and in network).</p> | 2.68 |
| Crescent Road | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>Heronsgate to Bovingdon TM and BPS: 11.4km of 500mm Trunk Main New Booster Station (40 MI/d)</p> <p>Pump (flow) Tests for Existing Assets / Software Changes / Commissioning and Monitoring of New Pumping Profiles (on site and in network).</p> | 19.62 |
| Waterhall | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> | 3.83 |

| Project | Scope (SRs – No Net Deterioration Schemes) | £m |
|--------------------|--|--------------|
| | <p>Heronsgate to Bovington TM and BPS: 11.4km of 500mm Trunk Main New Booster Station (40 MI/d) Pump (flow) Tests for Existing Assets / Software Changes / Commissioning and Monitoring of New Pumping Profiles (on site and in network).</p> | |
| North Mymms | <p>Delivery and implementation of interdependent dWRMP network reinforcement schemes:</p> <p>Ickenham to Harrow TM and New BPS: 9km of 650mm Trunk Main New Booster Station at Ickenham PS (30MI/d) 2 x New Connections at Strategic PRV Locations</p> <p>Heronsgate to Bovington TM and BPS: 11.4km of 500mm Trunk Main New Booster Station (40 MI/d) Pump (flow) Tests for Existing Assets / Software Changes / Commissioning and Monitoring of New Pumping Profiles (on site and in network).</p> | 1.05 |
| Total Cost: | | 54.40 |

| Project | Scope (SRs – ADO Relocation Schemes) | £m |
|--------------------------|--|-------|
| Berkhamsted | Changes to Pump Operation - Utilisation of New Pumps (Borehole Pump and VSD Replacement) Optimised for new ADO / PDO Delivery. | 0.05 |
| Chalfont St Giles | Changes to Pump Operation - Utilisation of New Pumps (Borehole Pump and VSD Replacement) Optimised for new ADO / PDO Delivery. | 0.09 |
| Piccotts End | Pump / VSD Upgrades and Additional Treatment: Installation of new OSEC Plant and new VSDs. | 0.06 |
| Marlowes | <p>Pump (flow) Tests for Existing Assets / Software Changes / Commissioning and Monitoring of New Pumping Profiles (on site and in network)</p> <p>Procurement and Installation of 2 x New Pump and VSDs (optimised for delivery of lowered 1.00 MI/d ADO) and to mitigate turbidity related outage durations.</p> | 0.10 |
| Northmoor | <p>Yield Testing / Pump Flow Tests on all 3 boreholes</p> <p>Installation of new upsized BH1 pump (upsized existing 6 MI/d pump to 10 MI/d pump)</p> <p>Installation of Amazon Filters or Similar Filtration System</p> <p>Installation of 2 x new pumps optimised for new ADO</p> | 0.57 |
| West Hyde | <p>Yield Testing / Pump Flow Tests on all 3 boreholes</p> <p>Installation of New Borehole and New Pump</p> | 13.89 |

| Project | Scope (SRs – ADO Relocation Schemes) | £m |
|---|---|--------------|
| | Installation of New Turbidity Treatment (Pressurised Sand Filters) | |
| Blackford (inc. Blackford Group Turbidity Treatment) | Borehole Remediation Works, Pump Upsize New Pump and VSD) New Turbidity Treatment (Pressurised Sand Filters) and Pump Optimisation. Pump Testing / Investigation Works. | 12.55 |
| The Grove | Pumps Upsize for all 3 boreholes with VSD Replacement (to allow delivery of 21 MI/d ADO from 2 boreholes) Installation of new Turbidity Treatment (Amazon Type Filters). | 0.85 |
| Total Cost: | | 28.17 |

Applying the Programme Scalability test

In the table overleaf, we list the programmes we have bundled together to create the scheme to be considered for DPC suitability.

| Programme name | Totex Value, £m | Describe the programme and how it has been created (with reference to the Programme Scalability test) | Programme taken forward for DPC consideration? |
|--|-----------------|---|--|
| 2025-2030: Connect 2050 | £88.57m | Investment needs to deliver WRMP needs for moving water from areas of surplus to areas of deficit | Programme in isolation is not suitable for DPC due to size – consider for bundling with other similar programmes |
| 2025-2030 : WINEP Sustainability Reductions | £125.35m | Investment needs to deliver WINEP abstraction reductions commitments | Programme in isolation is not suitable for DPC due to size – consider for bundling with other similar programmes |
| Connect 2050 AMP9 – AMP12 | Est. £285m | Investments needed from the period AMP9 to AMP12 to meet WRMP needs | The cost is above the £200m threshold, with discrete projects at least £5-10m (some may be less than £5m), so DPC can be considered. However, as abstraction reductions beyond 2025-2030 are not confirmed in location or quantity, there is considerable potential for change to our Connect 2050 plans from 2030 onwards. Currently, it is not possible to confirm the precise scope of the 2030 – 2050 projects for Connect 2050. |

Similar Characteristics

This section explores how projects in our investment portfolio could be bundled together based on these projects having similar characteristics e.g., similar timing requirements, repeatable construction requirements, etc.

| Question | Response |
|---|--|
| <p>How 'interlinked' is the delivery and/or operation of the projects?</p> | <p>The nature of the schemes is largely interconnections, i.e., pipelines and associated booster pumping stations to allow us to transport water from areas of surplus to areas of deficit. The programme also includes small reservoir cells. They provide increased system resilience to our operations, and we intend for them to be used as part of our daily operations, and not just under emergency conditions. The availability and operation of the Connect 2050 assets will be an essential part of our integrated asset operations and supply duties.</p> |
| <p>How similar are the project's supply chains for delivery / operation / maintenance?</p> | <p>The projects in the programme share similar supply chains, consisting of intra-company interconnectors involving booster pumping stations, large trunk mains, and treated water storage reservoirs. Supply chain partners exist that could deliver the entire scope of Connect 2050 and our sustainability reductions programmes.</p> <p>Operations and maintenance are difficult to contract out, as pipelines, boosters and reservoirs will be fully integrated with our control operations and will be essential components to providing system resilience during routine and emergency operations.</p> |
| <p>How similar are the project's construction materials and/or construction methodologies that will be needed?</p> | <p>The projects will use different materials. It is likely that both plastic and metal pipes will be used, and a variety of materials in the treatment process schemes. The methods of construction will be different; we would seek to maximise trenchless techniques in pipelaying to minimise disruption to the local community as well as delivering efficiently and with the least carbon and biodiversity impact; however, it is possible we will open cut through congested areas.</p> <p>The above ground works would be constructed behind fenced compounds, either on land we already own or on land we need to acquire.</p> |
| <p>How close are the projects? i.e., are they in a similar geographical location.</p> | <p>The projects are spread across our operational area (Central region). This does not necessarily rule out their ability to be bundled for consideration for DPC, if there are sufficient other factors that support bundling.</p> |

| Question | Response |
|--|--|
| <p>How similar are the project's (and the assets within them) risk profiles?</p> | <p>The risk profiles for the projects are similar due to the presence of similar asset types. However, there are uncertainties concerning the timescales. To achieve the required drought resilience levels for 2025-2030, specific schemes must be delivered as early as 2026, driven by the commitment to reduce water abstraction by 36.31 million litres per day by December 2024. Timely implementation of these projects is crucial to meet the targets and ensure a sustainable water supply. All schemes, except for additional storages proposed under Connect 2050 - Resilience at Hills and Hadham Mill sites, must be completed by December 2029 to achieve the further reduction in water abstractions in line with 2025-2030 agreements.</p> <p>In AMP7, we have seen that above ground asset projects (e.g., booster pumping stations and reservoirs) are more responsive to volatile economic conditions such as inflation, which has affected lead times. These have driven up costs significantly and beyond that which can be considered under management control. Pipeline costs have been less volatile, although materials prices have increased considerably in the 2020-2025 period.</p> |
| <p>A conclusion should be drawn as to whether there are specific programmes that can be created, and whether these would be suitable for DPC.</p> | <p>The results of the scalability test indicate that even if Connect 2050 meets the size criteria by combining the projects in the AMP8 programmes, it is unlikely to be suitable for DPC due to the urgency of some projects needing to meet delivery dates very early in 2025-2030 and the interconnectivity of the discrete assets to our overall system.</p> <p>The uncertainties related to future phases of Connect 2050 present challenges that render the DPC approach unsuitable.</p> |

Successive Control Periods

This section sets out where projects/programmes could be combined across multiple AMP periods, to increase the value of the programme.

| Question | Response |
|---|--|
| <p>How could spend be combined across multiple AMPs?</p> | <p>Our Connect 2050 programme is designed to be adaptive, aiming to identify and prioritise a "least regrets" approach to network development, considering significant changes in water resources to 2050. It involves network enhancements to maintain the supply/demand balance in future AMP periods, defined in four key phases: 2027 (initial baseline after AMP7</p> |

| Question | Response |
|----------|---|
| | <p>delivery), 2029 (full AMP8 sustainability reductions implemented), 2034 (after the first potential SRO delivery), and 2050 (delivery of a second SRO and testing different environmental destination scenarios). This phased approach allows flexibility to address future uncertainties and adaptability in its approach. Initial enhancements in AMP8 can focus on specific short-term requirements such as the AMP8 WINEP sustainability reductions, while future needs can be reassessed during future Business Plan cycles, reflecting the adaptive planning approach in the WRMP.</p> <p>Connect 2050 is interrelated with the future sustainability reductions programme, which is not yet fully defined for the same period. As abstraction reductions beyond AMP8 are not confirmed in location or quantity, there is considerable potential for change to our Connect 2050 plans from AMP9 onwards. The lack of certainty of scope beyond AMP8 presents challenges in drafting a contract for DPC.</p> |

Small, low value assets

This sub-section sets out whether programmes that include individual small-value assets could be delivered together if they have shorter lifespans.

| Question | Response |
|---|--|
| <p>How long is the asset lifespan (i.e., how long the asset can be used for before it needs major maintenance/ replacement) and what will the implications of this be for a DPC contract?</p> | <p>The Connect 2050 programme is comprises large-scale infrastructure projects and does not include small, low-value assets. The asset lifespan is at least 25 years (pipes, pumps and reservoirs are different but all greater than 25 years). Routine maintenance will be required during the life of a typical DPC contract, notably of pumps and reservoirs (which must be categorised to be included in risk-based inspection regime as with all storage assets). Storage assets must also be routinely sampled in accordance with legislation.</p> |
| <p>How are relevant technologies likely to advance in the time of the contract (e.g., smart metering technology might advance more quickly than the contract in place) and will flexibility to upgrade technology need to be included in the contract?</p> | <p>The nature of the Connect 2050 and sustainability reductions projects are such that technological advances are unlikely to need to be considered in a potential DPC project. The pipelines are brand new assets and so technologies such as smart lining are not suitable. Maintenance regimes are unlikely to change; we already use drones and other technology to supplement our inspection and maintenance regimes, supplemented by physical activity as demanded by regulations (e.g., physical water sampling of storage assets).</p> |

Timescales

This sub-section sets out any third-party project deadlines that are fixed, and therefore will make delivery via DPC more challenging.













| Question | Response |
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| Are there any regulatory/stakeholder requirements for installation of assets that create fixed deadlines? | We are required to deliver reductions in our water abstractions by December 2029 under the 2025-2030 WINEP. Connect 2050 holds significant importance as it enables us to fulfil its statutory duty under our WRMP and adhere to the agreed reduction in our abstractions. To achieve the required 1 in 200 and 1 in 500 drought resilience levels in 2025-2030, certain projects must be implemented as early as 2026. |

Background / context of programmes meeting whole life totex threshold

This section provides a background to **each programme and project (or bundled projects and programmes) above the £200m totex threshold or the appropriate whole life cost**, where we determined there is value in continuing to explore DPC suitability.

| Question | Response |
|---|--|
| <p>Describe the scope and outputs of the project / programme.</p> | <p>The projects comprising our 2025-2030 Connect 2050 and sustainability reductions programmes are pipelines, valves and interconnections, booster pumping stations, additional treatment at existing sites, and small treated water storage reservoirs. Some of the projects are at least £5-10m; however, some are much lower in value.</p> <p>These works are needed to allow us to reduce our water abstractions as defined by the WINEP by December 2029. The new assets are needed to move water from areas of surplus to areas of deficit (with the deficits being created by the abstraction reductions). Individual projects in isolation will not allow us to deliver the abstraction reductions, this programme is the collection of discrete projects of above and below ground works to deliver this outcome.</p> |
| <p>Please describe the project/programme development timescales including expected start date, estimated time to deliver etc.</p> | <p>The programme will run from 2025 to 2050, although the scope is only confirmed for 2025-2030. AMP8 projects will commence as soon as possible and will deliver in time to meet our 2025-2030 abstraction reductions commitment by December 2029. As noted above, some projects must complete sooner to deliver drought resilience targets.</p> |
| <p>Please describe whether the asset(s) will be constructed in stages and the material that will be used for construction i.e., the plan for construction, how it will be built and what will be used to build it.</p> | <p>The assets will be built in phases and stages, at multiple locations simultaneously. This phased approach is because we can be flexible to future uncertainty and hence adaptive in its approach. We will consider any “no regrets” investment that we could make to reduce future costs e.g., if a booster station needs to be enlarged for a future abstraction reduction, should we procure the land and/or submit planning suitable for a larger building. The materials for construction are dependent on the type of project e.g., if pipelines are laid through contaminated land, standard plastic pipe will not be acceptable. The enabling and design works will be carried out first to determine this, together with route appraisal and surveys.</p> |

| Question | Response |
|---|---|
| <p>Please describe the likely supply chain make-up – i.e., whether the supply chain is a long, complicated supply chain with a high level of dependencies (e.g., specialist sub-contractors providing a critical service) and risks associated (that will require significant effort to manage), or a short, simple supply chain.</p> | <p>Affinity Water has established delivery partners following competitive tenders of both above and below ground frameworks. In AMP7, with similar programmes of work, the below ground delivery team leads projects that are mostly pipelines with support from the above ground teams and suppliers for above ground works, and vice versa for majority treatment projects. The projects under our AMP8 Connect 2050 and sustainability reductions programmes are not particularly specialist and so we would expect our existing Tier 1/2 frameworks to be adequate to offer the balance of efficient delivery and quality.</p> |
| <p>Please describe the operating methodology of the asset/assets as part of the project/programme.</p> | <p>It will be a mixture; some asset will be automatically operated, and some will be manually operated. Manual operations will require skilled technicians, but they will not be unique specialists. Automated assets will be included in our control operations systems and telemetry.</p> |
| <p>What is the likely size of the team be required to operate the asset e.g., does it require many different skillsets to operate?</p> | <p>The operation of the pipelines, booster pumps and storage assets will be by different skilled people (Affinity Water has separate, skilled network and production teams). It would be inefficient and costly to have a dedicated team responsible for the assets created by our Connect 2050 and sustainability reductions programmes; we would include them in our existing asset inventory without any additional staff to maintain and operate them.</p> |
| <p>Please describe the operating regime – e.g., whether the asset is operated all the time or just in periods of deficits / emergencies (such as droughts)</p> | <p>Some assets will be operated continuously as part of our routine operations, and some have additional roles in emergencies e.g., the ability to run bi-directionally to maintain supplies in the event of a widespread loss of water or under drought conditions.</p> |
| <p>Please describe whether the operation of the asset is dependent on any other operations e.g., does the operation of the asset in question require the operations of any other assets on the network to be changed or triggered; including whether these interactions between assets are relatively simple, or complex and unpredictable</p> | <p>Our Connect 2050 and sustainability reductions programmes are influenced by various other programmes, including Developer Services Strategic Infrastructure, Non-Infra Capital Maintenance, Infrastructure Capital Maintenance, and Single Points of Failure. This is because we are installing/upgrading assets at our existing treatment works sites. We also need to consider future changes to our network and production operations in response to local housing growth, which is not in our direct control. As the new assets will be integrated to our existing network and production supply systems, there are likely to be changes to the operations of existing assets, which will be determined as we develop the detailed design of each project.</p> |

| Question | Response | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|--|-----------|--|--|------------------|-------------|--|-----------|---|--|--|-------|--|---------|---|------------------------|---|-------|---|------------------------|---|-------|---|--------------------|--|---------|
| <p>Would multiple teams need to be informed when the asset is/is not operating (e.g., are there any other assets that will rely on the operation of this asset) and why?</p> | <p>The new assets would be included in our control operations telemetry systems, so we would receive automatic notification of the inoperability of critical assets (e.g., booster pumps). Planned and unplanned outages of the assets under our Connect 2050 and sustainability reductions programmes would need very careful management to ensure our customers' demand could continue to be met. As the assets will be integrated into our existing network, we will be able to model the impact of emergencies and the opportunities for importing water and rezoning using existing assets to maintain the supply/demand balance. These activities are controlled through our existing command hierarchy and emergency response teams, as required.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <p>Please describe the ongoing maintenance regime (including ongoing and capital maintenance) – whether the asset will need to be frequently maintained (e.g., will it be required at regular intervals or just at failures?)</p> | <p>Pipelines typically do not need inspection or maintenance unless there is a failure. Valves and other equipment connected to the pipeline would need regular inspection. Booster pumps have regular, routine maintenance requirements (see table below). These activities would be carried out by skilled production technicians as part of their daily work routines.</p> <table border="1" data-bbox="635 1081 1374 1456"> <thead> <tr> <th colspan="4" data-bbox="635 1081 1374 1108">Maintenance Schedule</th> </tr> <tr> <th data-bbox="635 1108 767 1149">Maintenance Type</th> <th data-bbox="767 1108 900 1149">Application</th> <th data-bbox="900 1108 1262 1149">Routine Maintenance / Inspection Tasks</th> <th data-bbox="1262 1108 1374 1149">Frequency</th> </tr> </thead> <tbody> <tr> <td data-bbox="635 1149 767 1283" rowspan="2">  </td> <td data-bbox="767 1149 900 1283" rowspan="2"> Pump General Condition / Upkeep </td> <td data-bbox="900 1149 1262 1211"> Check the pump for leaks. Check the pump for vibration. </td> <td data-bbox="1262 1149 1374 1211"> Daily </td> </tr> <tr> <td data-bbox="900 1211 1262 1283"> Check coupling alignment. Check coupling pins and bushes for wear. Check holding-down bolts for tightness. </td> <td data-bbox="1262 1211 1374 1283"> Monthly </td> </tr> <tr> <td data-bbox="635 1283 767 1346">  </td> <td data-bbox="767 1283 900 1346"> Bearing Housing </td> <td data-bbox="900 1283 1262 1346"> Carefully check the bearing housing for any sign of temperature rise. </td> <td data-bbox="1262 1283 1374 1346"> Daily </td> </tr> <tr> <td data-bbox="635 1346 767 1408">  </td> <td data-bbox="767 1346 900 1408"> Mechanical Seal </td> <td data-bbox="900 1346 1262 1408"> Check mechanical seals for leaks and renew as necessary </td> <td data-bbox="1262 1346 1374 1408"> Daily </td> </tr> <tr> <td data-bbox="635 1408 767 1456">  </td> <td data-bbox="767 1408 900 1456"> Lubrication </td> <td data-bbox="900 1408 1262 1456"> Lubricate the pump bearings with 15-20g of grease. </td> <td data-bbox="1262 1408 1374 1456"> Monthly </td> </tr> </tbody> </table> <p>Reservoirs need regular, routine risk-based inspection (between five- and ten-years dependent on the risk assessment). These are specialist activities and must be carried out by highly skilled, qualified staff.</p> <p>Reservoirs also need routine sampling; the frequency depends on the size and criticality of the reservoir, but typically weekly. The samples must be carefully taken by skilled operatives, using specialist equipment, and transported under controlled, calibrated conditions to a UKAS accredited laboratory for processing. This activity would be integrated with our existing sampling rounds for the new storage assets. Sample failures require immediate action, which could involve the asset being taken out of service for an out-of-cycle inspection.</p> | Maintenance Schedule | | | | Maintenance Type | Application | Routine Maintenance / Inspection Tasks | Frequency |  | Pump General Condition / Upkeep | Check the pump for leaks. Check the pump for vibration. | Daily | Check coupling alignment. Check coupling pins and bushes for wear. Check holding-down bolts for tightness. | Monthly |  | Bearing Housing | Carefully check the bearing housing for any sign of temperature rise. | Daily |  | Mechanical Seal | Check mechanical seals for leaks and renew as necessary | Daily |  | Lubrication | Lubricate the pump bearings with 15-20g of grease. | Monthly |
| Maintenance Schedule | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Maintenance Type | Application | Routine Maintenance / Inspection Tasks | Frequency | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Pump General Condition / Upkeep | Check the pump for leaks. Check the pump for vibration. | Daily | | | | | | | | | | | | | | | | | | | | | | | | |
| | | Check coupling alignment. Check coupling pins and bushes for wear. Check holding-down bolts for tightness. | Monthly | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Bearing Housing | Carefully check the bearing housing for any sign of temperature rise. | Daily | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Mechanical Seal | Check mechanical seals for leaks and renew as necessary | Daily | | | | | | | | | | | | | | | | | | | | | | | | |
|  | Lubrication | Lubricate the pump bearings with 15-20g of grease. | Monthly | | | | | | | | | | | | | | | | | | | | | | | | |

| Question | Response |
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| <p>Describe how resource intensive and expensive it will be to maintain the asset.</p> | <p>Reservoir inspections require a team of competent, skilled, qualified personnel to plan and safely undertake. It is resource intensive to plan for and deliver a site outage to enable an inspection to be undertaken. There is a risk that outages may be cancelled at short notice due to local operational events e.g., bursts, and will need to be re-planned.</p> <p>Samples are typically taken by one skilled person as part of their daily rounds.</p> |
| <p>How critical is the asset to broader network operations – e.g., whether transferring operations and maintenance to the CAP would put an overreliance on the CAP.</p> | <p>The assets created under our Connect 2050 and sustainability reductions programmes are pivotal to our broader operations, due to their integration with existing assets and additional resilience under times of operational stress such as incidents. Transferring operations and maintenance to the CAP could put the ability to achieve our performance commitment targets (and the associated penalties) at risk e.g., if an interruption to supply was prolonged because of the availability or utilisation of the Connect 2050 and sustainability reductions programmes assets, or if there was a water quality failure at the treated water storage reservoir.</p> |

Construction Risk Test

The 'Construction Risk' test is required to be **applied to all programmes and projects above the £200m totex threshold/appropriate whole life cost**. This section provides a high-level overview of how the test has been applied to each of the project/programmes forming the potential DPC scheme.

| Question | Response |
|---|---|
| <p>Please describe whether the construction risk is significantly high, and an explanation of why e.g., if this risk occurs, would customers be severely impacted?</p> | <p>The delivery of pipelines, booster pumps and storage reservoirs is common for the water sector, and typically managed through standard forms of contract (NEC etc). The more significant risks to the project (where customers would be affected) would be in the commissioning and integration with our existing network, which would need careful planning and management with Affinity Water's operational teams (e.g., in granting supply outages or rezoning to provide water for commissioning). Where third parties have constructed new assets, for example self-lay providers, we would still retain the ability to conduct non-contestable works (such as shutting down existing assets to facilitate final connections) to protect customers.</p> <p>The requirement to complete some projects by 2026 to meet drought resilience requirements suggests that there would be insufficient time to contract a DPC arrangement after PR24 Final Determinations are published, so these projects would be excluded from the scope of the DPC scheme, reducing the whole life totex.</p> <p>A potential risk that emerges under a DPC contract that would be different to in-house delivery is the need for Affinity Water to be identified on traffic management notices during the CAP's works in the public highway. This could generate unwanted contact for Affinity Water and lead to negative consequences on our CMeX score.</p> |
| <p>Please describe how likely it is that construction activity will put other operational Affinity Water assets at risk</p> | <p>The construction activity will affect other operational Affinity Water assets, particularly where final connections and modifications are made to existing assets. Above ground asset works (booster pumping stations and new reservoir cells) are at the same sites as existing assets, so construction vehicles could restrict access to operations. Work in the public highway will require traffic management.</p> |
| <p>Please describe how construction would impact the</p> | <p>As we have not yet completed detailed design, it is difficult to confirm the mitigating actions that would</p> |

| Question | Response |
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| <p>operation of these operational Affinity Water assets e.g., would the operational Affinity Water asset have to stop operating or would operation have to adapt to allow for the construction of the new asset?</p> | <p>need to be taken at each site. Generally, pipelines will be constructed offline, with detailed planning of the final connections and commissioning. Similarly, reservoir cells will be constructed offline, possibly using pre-cast sections to reduce costs and carbon impacts. Booster pumping stations will be constructed offline. There would need to be careful outage planning to commission the new cells and boosters and integrate them into the existing site and control operations telemetry for commissioning before being brought into service with the other assets at the site. This might require an outage of a significant duration, which may only be possible at certain times of the year (e.g., outside of peak demand periods), which may delay completion. If delivered in-house, we would plan the works sufficiently to coincide commissioning with a period of low demand / high storage capacity so that we would minimise the risk to customers.</p> |
| <p>How well are the site conditions understood e.g., ground conditions</p> | <p>We have not commenced the design phase of the project, so cannot confirm the status of site conditions. We would carry out desktop studies, arrange surveys and attend site visits as part of the design phase.</p> |
| <p>Please describe whether the scope of the programme can be clearly defined, and relatively 'fixed' e.g., are there clear boundaries as to what is required of the programme and any factors that could affect the scope?</p> | <p>While we have identified the discrete projects that comprise our Connect 2050 and sustainability reductions programmes for AMP8, we have not yet started the design process so would not describe the scope as 'clearly defined'.</p> <p>On similar projects in AMP7, we would run our 'Risk & Value' process as part of the design phase to review all reasonable options to meet the intended outcomes. It is important that this is not done too far in advance of the project starting, as there may be additional data or information (e.g., from a recent emergency incident) that should be considered in the project design (such as the way a particular group of assets performed under emergency conditions). We have examples of the intended solution switching from an above ground option initially, to a below ground option after reviewing risks, opportunities, costs (investment, capital maintenance and opex) and carbon impacts. The project still delivered the same outcome, but in a different way, for the benefit of customers and the environment. Being strict on the precise scope before performing the Risk & Value process could bring disbenefits and close off options to deliver more effectively and efficiently.</p> |

| Question | Response |
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| | <p>Our Connect 2050 and sustainability reductions programmes are interrelated, so if a solution option changes, it is essential to consider the cascade effect on other projects in the programme as a complete system, and as part of the wider network to understand the potential consequences on operation of existing assets.</p> |
| <p>Please describe whether risks overall are predictable and known e.g., have these occurred and been mitigated successfully on previous similar projects?</p> | <p>We have significant experience of building pipeline, booster pumping stations and treated water storage projects. However, risks can and do occur regardless of previous experience. At Affinity Water, our design processes, together with early contractor involvement, seek to minimise risks. We make use of NEC frameworks with established risk management and early warning procedures, where we will run risk mitigation workshops to attempt to reduce or eliminate known and emergent risks.</p> <p>In AMP7, we have seen that above ground asset projects (e.g., booster pumping stations and reservoirs) are more responsive to volatile economic conditions such as inflation, which has affected lead times. These have driven up costs significantly and beyond that which can be considered under management control. Pipeline costs have been less volatile, although materials prices have increased considerably in AMP7.</p> |
| <p>Please describe the impact of construction risks – and whether this is proportionate to the value of the project/programme.</p> | <p>Typical construction risks include:</p> <ul style="list-style-type: none"> • Unforeseen ground conditions • Environmental requirements (e.g., discovering protected species or habitats) • Availability of materials (lead time) • Availability of resources and plant • Additional traffic management • Securing outage for final connections (short-notice cancellation due to higher priority operational demands) <p>The consequence of typical construction risks tends to be compensation events (cost increases) and delays in completion, e.g., switching a pipelaying technique from trenchless to open-cut as a result of discovering unmarked utilities.</p> <p>Typically, realised risk on construction projects is around 10% of the original project cost.</p> |
| <p>Please describe whether the risks are standard or non-standard</p> | <p>The risks in delivering our Connect 2050 and sustainability reductions programmes are 'standard', i.e., common in construction and routinely managed.</p> |

| Question | Response |
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| | <p>The delivery partner would be responsible for compliance with all health and safety and Construction Design and Management regulations, and for ensuring the competence of their staff at work and in adhering to Affinity Water's processes and procedures (e.g., water hygiene practices, keeping customers informed about the works when in the public highway etc.). There would be no allocation in project risk for the delivery partner to undertake their core duties.</p> <p>The delivery partner would be responsible for notifications in the public highway to comply with relevant legislation and will also be required to identify Affinity Water as the reason for the works needing to take place. If poorly managed, this could generate unwanted contact for Affinity Water and affect our CMeX score.</p> |
| <p>How have these risks been dealt with/mitigated before in the water sector e.g., has this risk occurred before and what was done to mitigate the impacts?</p> | <p>As noted above, these risks are standard in water industry construction projects. We have a long history with managing and mitigating construction risks on previous projects. Competent clients and delivery partners with a mature relationship and acting with mutual trust and cooperation in the spirit of a typical NEC framework, would make use of early warnings and risk mitigation workshops to explore emergent risks and identify resolution strategies.</p> <p>In the case of securing outages for final connections and commissioning, the Affinity Water Project Manager together with the delivery partner would meet with our Control Operations planners to negotiate the timing and duration of the outage.</p> <p>Should the mitigation strategies be unsuccessful, in whole or in part, compensation events would be raised. The costs would be negotiated between the client and the delivery partner and based on quotations and the Project Manager's assessment. Our Project Managers routinely challenge delivery partner preliminaries and standing time and push back on high charges from local authorities demanding enhanced levels of traffic management. Even with these challenges, typically, realised risk on construction projects is around 10% of the original project cost.</p> |
| <p>Would the ability to mitigate the risk be within the control of the CAP alone, or would it require significant intervention from Affinity Water?</p> | <p>Mitigation would not be entirely within the control of the CAP. Outages to allow final connections and commissioning would be granted by Affinity Water. These may need to be withdrawn at short notice to deal with an emergency, requiring the works to be replanned. As mentioned previously, outage may not</p> |

| Question | Response |
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| | <p>be granted at a time that is convenient for the CAP; outages are not routinely granted during the summer, periods of high demand, or low storage. In the event of changes in Affinity Water operations to support delivery of the DPC project, this would not be under the CAP's control.</p> |
| <p>How could a contractual agreement be provided to mitigate these risks?</p> | <p>We would propose including clear roles and responsibilities between the CAP and Affinity Water in the event of a risk occurring.</p> <p>A potential risk that emerges under a DPC contract that would be different to in-house delivery is the need for Affinity Water to be identified on traffic management notices during the CAP's works in the public highway. This could generate unwanted contact for Affinity Water and lead to negative consequences on CMeX. We would seek to be indemnified from the CAP of any ODI penalty arising from unwanted customer contact relating to their management of construction activities.</p> |
| <p>How could the risks be mitigated through an alternative in-house proposal?</p> | <p>As noted above re: outage, collaborative relationships are already established between the Project Managers, delivery partners and our Control Operations teams. We may receive early warning of the potential cancellation of an outage request, e.g., being aware of an emergency incident. We have often had situations of our delivery partners mobilising to support swifter resolution of an emergency event, for example providing plant and resources to respond to a major burst.</p> <p>Similarly, we have worked to develop positive relationships with local authorities in our supply area. This has allowed us to secure favourable windows for construction activity; similarly, we have supported their plans by accelerating delivery, e.g., by working in a shared construction site to minimise disruption to the local community. A CAP would not necessarily benefit from these relationships with Affinity Water as the Appointee.</p> <p>Our delivery partners have been working with us for several years, following appointment via competitive tender. They are familiar with our processes and procedures and share our commitment to providing a great customer experience. They recognise they are visible to customers and agents of Affinity Water, particularly in the public highway and in residential communities where our production sites are located. Any concerns with the conduct of their teams are addressed swiftly.</p> |

| Question | Response |
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| <p>With reference to all the above, please describe whether there are any risks that cannot be transferred to the CAP or would be cost prohibitive to transfer.</p> | <p>It is unlikely that we would be unable to transfer these risks to the CAP, or that they would be cost prohibitive. The lack of integration between the CAP and the Appointee (compared to in-house Project Management and collaborative delivery partners) is likely to drive additional costs and delays compared to the in-house counterfactual.</p> |
| <p>How could the project scope could be reduced to better manage risk, and the scalability test be reapplied to redetermine DPC suitability.</p> | <p>The Connect 2050 and sustainability reductions programmes' scope could not be altered to make it possible to transfer construction risk to the CAP, without then falling significantly short of the Programme Scalability test threshold. Some of the projects are at least £5-10m; however, some are much lower in value. All projects are required to deliver the programmes' outcomes. Under in-house delivery, we would bundle certain types of projects (e.g., all boosters, all treated water storage) to explore economies of scale. We would consider tendering to prove we have secured best value under our frameworks; however, our current below ground framework delivery partner is routinely outperforming competitive tender quotations.</p> |

Operation & Maintenance Risk Test

The 'Operations & Maintenance Risk' test is required to be **applied to all programmes and projects above the £200m totex threshold/appropriate whole life cost**. This section provides a high-level overview of how the test has been applied to the selected projects/programmes.

| Question | Response |
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| <p>Are the operation and maintenance risks of this programme predictable and known?</p> | <p>The operation and maintenance of the new assets created by our Connect 2050 and sustainability reductions programmes are interdependent with the operation and maintenance of existing assets.</p> <p>New or upgraded boosters being installed at our existing sites and new treated water storage cells adjacent to our existing reservoirs are likely to be prohibitive for the CAP to operate and maintain discretely from the adjacent assets, when the same operations and maintenance manuals, software systems and telemetry oversee all assets at the site. Operation would be automated as far as possible.</p> <p>There is limited maintenance required of new pipelines, with pipes having asset lives longer than the duration of a typical DPC contract. Valves and other apparatus require routine inspections. The operations and maintenance risks associated with pipelines are relatively low, with most risks arising from materials defects during fabrication or poor construction / installation.</p> <p>The maintenance activities of the new assets are known and would be integrated with existing assets using our existing skills production and network teams, e.g., greasing of bearings of new pumps would be undertaken at the same time as greasing existing pumps.</p> |
| <p>Please describe whether the risks are standard/non-standard.</p> | <p>The risks in operating and maintaining our Connect 2050 and sustainability reductions programmes are 'standard', i.e., common in operating and maintaining water company assets.</p> <p>The operation of the new assets by a third party may present potential impacts or risks to customers. These risks are heightened if the new assets are to be operated independently from the adjacent, existing assets. Careful consideration is required to transfer these risks, as it could have implications for water quality, especially when integrating the network with new assets under limited regulatory oversight. The Appointee would</p> |

| Question | Response |
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| | <p>seek indemnification of any penalty costs associated with the CAP's operation of assets (assuming they could be sufficiently separated from the adjacent assets) that contributed to a Compliance Risk Index event.</p> <p>Customers' concerns about water quality could affect our performance on CMeX and aesthetics customer contacts.</p> <p>If there is to be a planned outage for the inspection of the new asset, that will need to be carefully planned and coordinated; with additional consideration for the consequence of the outage being aborted at short notice due to local operational events. The DPC contract would need sufficient protections for the CAP to ensure they would not bear the costs of standing time or preliminaries because of an aborted outage. The in-house counterfactual would seek to mitigate the risk by redeploying resources; in some cases, this might be in supporting the emergency incident which led to the aborted outage.</p> |
| <p>How have the risks have been dealt with/mitigated before in the water sector?</p> | <p>Affinity Water has no production or networks assets that are operated and maintained by a third party. The sector's inexperience does not necessarily preclude a CAP from mitigating the risks, but the Appointee would be reassured by the CAP having demonstrable experience of operating and maintaining water production and network assets.</p> |
| <p>Please describe whether there are any interdependencies with the broader network / operations.</p> | <p>The new assets planned for delivery under our Connect 2050 and sustainability reductions programmes play a pivotal role in the broader network operations. These new assets directly influence the overall efficiency and resilience of our water supply network. As noted previously, the assets will be used as part of daily operations and under emergency conditions such as during incidents or droughts. The new reservoir cells add resilience during periods of inspection and maintenance, allowing us to take one cell out of service with no impact on local resilience. The new trunk mains allow us to move water after we have implemented our abstraction reductions, but also provide additional resilience e.g., if we need to rezone to deal with a burst affecting customers' supplies.</p> |
| <p>Please describe whether there are any impacts/risks to customers.</p> | <p>Careful consideration is required to transfer risks with impacts to customers, as it could have implications for water quality, especially when integrating the network with new assets under limited regulatory oversight. Customers' concerns about water quality could affect our performance on CMeX and aesthetics customer</p> |

| Question | Response |
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| | <p>contacts. Any interruption to customers' supplies (during construction and subsequent maintenance) would need to be planned and notified. In the event of a loss of pressure or supply because of the CAP's operations would need to be compensated through the Guaranteed Standards of Service scheme – assuming that the assets can be sufficiently separated from the Appointee's existing assets and identified as the root cause of the problem.</p> |
| <p>Please describe whether there are certain regulatory functions of the appointee that cannot be exercised by or in relation to a CAP.</p> | <p>Water treatment assets may be harder to regulate if provided by the CAP, although we acknowledge that Ofwat is undertaking works to mitigate this concern. Reservoirs require regular, routine risk-based inspection. Reservoirs also need routine sampling. The samples must be carefully taken by skilled operatives, using specialist equipment, and transported under controlled, calibrated conditions to a UKAS accredited laboratory for processing. This activity would be integrated with our existing sampling rounds for the new storage assets. Sample failures require immediate action, which could involve the asset being taken out of service for an out-of-cycle inspection. We assume that Ofwat will ensure these requirements are sufficiently managed for CAPs operating and maintaining storage assets.</p> |
| <p>How could the risk be mitigated through an alternative in-house proposal?</p> | <p>As noted previously, new or upgraded boosters being installed at our existing sites and new treated water storage cells adjacent to our existing reservoirs are likely to be prohibitive for the CAP to operate and maintain discretely from the adjacent assets, when the same operations and maintenance manuals, software systems and telemetry oversee all assets at the site. The in-house proposal would subsume the new assets into our operations and maintenance regimes, using existing, skilled teams.</p> <p>In the event of planned maintenance or unplanned response due to an emergency, we have established practices and procedures that would be used. For example, processes to identify and notify customers in the event of planned works (including those in vulnerable circumstances as identified by our Priority Services Register) or mobilising our Emergency Response Team to deal with a large incident.</p> |
| <p>How could the project scope could be reduced, and the scalability test be reapplied?</p> | <p>The Connect 2050 and sustainability reductions programmes' scope could not be altered to make it possible to transfer operations and maintenance risks to the CAP, without then falling significantly short of the</p> |

| Question | Response |
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| | Programme Scalability test threshold. All projects are required to deliver the programmes' outcomes. |
| <p>Consider if both operation and maintenance risks can't be passed on to the CAP, whether just operations risk or just maintenance risk could be transferred under a different contract model.</p> | <p>Operations risks are relatively low, as most of the assets would be automated (the in-house operations and maintenance option would be via our central Control Operations function).</p> <p>The maintenance risks can be transferred to the CAP, but the CAP would need to provide a skilled, competent team to manage the maintenance regimes, undertake sampling, and collect data on asset performance.</p> |
| <p>With reference to all of the above, are there any risks that cannot be transferred to the CAP or would be cost prohibitive to transfer and if so then the reasoning and evidence to support this.</p> | <p>The major risk would be in the event of an unplanned event or emergency, where there might be risks to water quality or customers' supplies, where the CAP would have to integrate into the Appointee's emergency response to protect customers. It will be challenging to transfer the operations of assets that are highly interconnected to existing assets.</p> |
| <p>How critical is the asset to broader network operations? Is the system reliant on the asset?</p> | <p>The new assets planned for delivery under our Connect 2050 and sustainability reductions programmes are critical to our broader network operations. The assets will be used as part of routine operations, while others have additional functionality under times of stress such as emergencies or droughts. The CAP would need to provide near 100% availability of the assets, which would make maintenance challenging. This compares to the in-house option, where Affinity Water has resilience and redundancy in our production and network systems to manage planned outages and respond to unplanned events while minimising the impact on customers' water supplies.</p> |

Conclusion

Programme Scalability

| Question | Response |
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| <p>Does the whole life Totex meet the £200m threshold/ the appropriate whole life cost to be considered for DPC?</p> | <p>Six of these projects are less than Ofwat's expectation that discrete projects in a bundled scheme are at least £5-10m. The six projects have an estimated total value of £16m. This drops the value of the bundled scheme to £188m, just below the Programme Scalability threshold. The bundled scheme is made of projects of different types of assets – trunk mains, reservoirs, additional treatment at existing works, and pumping stations. These are not "projects of the same (or similar) type of asset" and they are spread across Affinity Water's Central operating region, and not part of a discrete 'system' within Affinity Water's production and network operations. Some of the projects are required much sooner than December 2029 to meet drought resilience targets. It would not be possible to enter into a DPC contract after the PR24 Final Determinations and meet this objective. There are no other programmes in our portfolio that are suitable to re-bundle and reassess for Programme Scalability. Under scrutiny against Ofwat's guidance, the bundled scheme does not pass the Programme Scalability test.</p> |

Construction Risk

| Question | Response |
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| <p>What are the significant reasons why most construction risks can/cannot be effectively transferred to the CAP and/or managed or mitigated through contractual arrangements, or by adapting the project scope for delivery by DPC.</p> | <p>The discrete projects will deliver different assets, so it may be challenging to find a CAP who can construct all the different asset types. We have not yet carried out any market engagement to understand levels of interest of such a bundled scheme. Limiting the scope to assets of the same or similar type would result in the bundled scheme failing the Programme Scalability test. Fixing the scope of the construction works early in the design process can limit opportunities for innovation and efficiency. While construction risks are expected to be 'standard' and known, there will be disruption</p> |

| Question | Response |
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| | <p>to the local community. Installing new pipelines will require notification of traffic management and diversions, which may be disruptive for some time. There may be local resistance to planning and land purchase to build new reservoir cells and booster pumping stations. The biggest construction risk for the CAP is likely to be securing the outage for final connections and commissioning; while this risk is the same for the in-house delivery option, we have greater flexibility to redeploy resources to minimise consequence costs. While there are some risks that would need further exploration, on the assumption that there was sufficient interest from the market, it would be possible to pass the Construction Risk test, although it would be on a bundled scheme of discrete projects that would fail the Programme Scalability test.</p> |

Operations and Maintenance Risks

| Question | Response |
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| <p>Please describe whether there any significant reasons why the maintenance, and/or operations of the asset cannot be effectively transferred to the CAP and or managed or mitigated through contractual arrangements.</p> | <p>The majority of the above ground projects (booster pumping stations, reservoir cells, and additional treatment) are in addition to our existing treatment and storage assets. Under the in-house alternative, new assets would be integrated into our existing Control Operations and telemetry systems. They would be operated using our existing software and maintained by Affinity Water's existing, skilled teams. It would not be possible to separate the assets for operation and maintenance under a separate DPC contract. The bundled scheme does not pass the Operations & Maintenance test.</p> |