



TMS-DD-045

Thames Water PR24 DD
Response - Deliverability

August 2024



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Executive Summary

Assessment of our deliverability capacity has been ongoing since July 2023 to inform our AMP8 investment plan. Two independent third party reviews by Jacobs have been delivered and the recommendations actioned. These reports identified that further work was required to understand specific constraints, such as the non-infrastructure programme, and develop actions to address them given the significant proposed increase in investment in the AMP8 plan. We have also commissioned a further review which has specific focus on supply chain readiness which is due to be finalised in September.

We have established an AMP8 Mobilisation Programme under the sponsorship of the Strategic Planning and Engineering Director. This Programme has 14 workstreams which are aligned around the areas we need to improve to successfully deliver AMP8, including internal capability and capacity and across our supply chain. This also addresses recommendations proposed in the Capital Delivery reports produced by FTI Consulting/ Strat-Edgy to support Thames in extending its delivery envelope, which have been detailed in the Delivery Action Plan submitted to Ofwat on 20 August 2024.

For the latest assessment of deliverability which has informed our Draft Determination response, we have assessed the impact of key constraints and derived High, Low and Most likely cases that inform a revised deliverability volume by considering three principal lenses:

- **Supply Chain Capacity** – The assessed capacity of the contracting supply chain to deliver the AMP8 programme.
- **Throughput** – Stage Gate 0 (SG0), Engineering development to Stage Gate 1 (SG1), the Stage Gate Process feed capacity.
- **Constraints** – Internal and external (third party) constraints that have the potential to delay project delivery.

A further lens of ‘Schedule’ has been assessed for initial deliverability based on the estimated durations from the P6 Build templates (based on historical performance), which underpins the above.

Analysis of Deliverability within Capital Delivery has highlighted a number of constraints and concerns in our ability to deliver the revised plan, reinforcing the need for Ofwat’s gated process and Delivery Mechanism, giving us the opportunity to work to improve our position and deliver more for our customers. The assessment concludes;

- There are specific concerns around supply chain capacity of non-infrastructure contractors. We have a clear set of actions to help mitigate the concerns identified, including working more collaboratively across the supply chain.
- The throughput to producing Briefs via Engineering is the main area for focus to improve in the short term and support launching the Programme effectively.
- This further underpins the importance of the Delivery Mechanism, and we support Ofwat’s approach.

Under the leadership of our Water and Waste sponsors we will continue to seek to optimise the plan and push our deliverability through structured programme and project workshops.

AMP8 mobilisation is a standing agenda item considered within the Monthly Business Reviews (MBRs) held with the CEO and CFO.



Introduction

Assessment of our deliverability has been ongoing since July 2023 to ensure that the capability and capacity is sufficient across Thames to deliver on our proposed AMP8 investment programme. We have prepared this document to summarise:

- The assessment work undertaken in 2023 and earlier in 2024 and resulting management actions.
- The most recent assessment work to inform the response to the draft determination.
- The next steps to support increasing confidence in realising deliverability assumptions and proposed ramp up in investment levels.

Deliverability Assessment

Previous deliverability assessment work

As part of the October 2023 PR24 submission Capital Delivery undertook work on assessing deliverability constraints to support developing a deliverable AMP8 investment programme. Capital Delivery commissioned an independent review of deliverability and AMP8 Readiness via Jacobs in Autumn 2023 to support the initial PR24 submission. A follow up report was commissioned in January 2024 to assess progress against previous recommendations and broader readiness activities.

The October 2023 Jacobs report concluded that our delivery strategy for AMP7 was logical and suitable to continue into AMP8 as evidenced by the sustained growth in investment levels throughout AMP7. In addition, there was management focus in progressing the transition strategy but that it needed a more robust underlying plan. This assessment of Deliverability was centred around four key areas, which are set out below, alongside resultant actions to address these recommendations:

- *Recruitment and Capability* – A need to measure recruitment and success was identified. Metrics have been identified and are reported monthly through the performance cycle. A structured recruitment and retention plan is in place and underpins assumed increases in FTE within the client organisation.
- *Supplier Capacity* – The need for gathering leading indicators to monitor supply chain capacity and engage with them to inform plans for the coming AMP was identified. A structured programme of engagement with suppliers has been put in place to support workload management and programme visibility. Work started to better understand potential delivery constraints.
- *AMP7 to AMP8 Transition plan* – Identified a need to get greater data on early development projects to inform the early years of the plan and have focussed resource responsible for delivering the transition. This data has been captured as part of the development of the AMP8 Programme build and an AMP8 Mobilisation Team has been established.
- *Capital Delivery Improvement Plan* – Highlighted the need to continue to focus on improvement activity not in the scope of the company wide Turnaround Plan to underpin improved productivity per FTE.

The October report identified that there was additional work required to understand in more detail some of the potential constraints in the supply chain, such as the non-infrastructure programme in the latter part of the forthcoming investment programme. The subsequent January 2024 report (which analysed the impact of the extra committed volume of work in the proposed April 2024



submission) reinforced the importance of focussing on recruitment and supply chain capacity and having an overarching Programme to drive the required transition activities.

We have commissioned a further review which will have a greater focus on supply chain readiness as well as considering progress made since the prior reviews. This is expected to be finalised in September 2024.

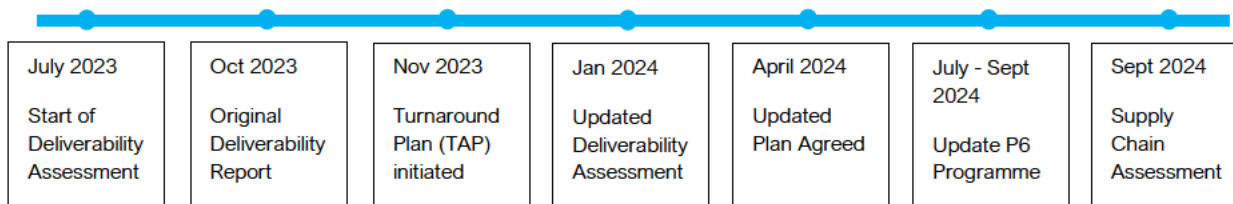


Figure 1 – Deliverability Assessment Timeline

AMP8 Mobilisation Programme

The AMP8 Mobilisation Programme is the vehicle for the coordination and integration of the critical enabling activities of Thames Water’s asset ownership, management, and operating functions, as we prepare for delivery of our AMP8 Investment Plan which represents a circa three-fold increase from AMP7 investment levels.

The Mobilisation Programme currently comprises 14 workstreams which represent the work fronts that are critical to assure the right foundational capabilities and plans are established to underpin the ramp up in investment levels and number of projects.

These workstreams include ‘Strategic Workforce Planning,’ ‘Mobilise the Supply Chain’ and a number which support the organisational changes including the introduction of a Sponsor model to support with driving end-to-end accountability to deliver the required outcomes through the investment programmes for the allocated allowances.

Progress on these workstreams is reviewed through a weekly Steering Group and reported into the Monthly Business Review with the CEO and CFO. The latest deliverability assessment work which informs our Draft Determination response has been driven through this programme.

Deliverability Model to inform latest assessment

As part of the ongoing preparations for AMP8 and the increasing certainty of the programme, it was decided to conduct a bottom-up assessment of deliverability through a Programme Build to assess whether this would highlight any additional constraints. We used the Deliverability Model to structure our assessment, as set out in Figure 1. We have considered what constrains us both internally and externally, as well as what we can and cannot influence, and taken into account which of these we believe have the biggest impact on our deliverability assumptions.



Deliverability Model

Health and Safety is fundamental

Elements of the Deliverability Model: how the analysis and workshops have been directed and guided.

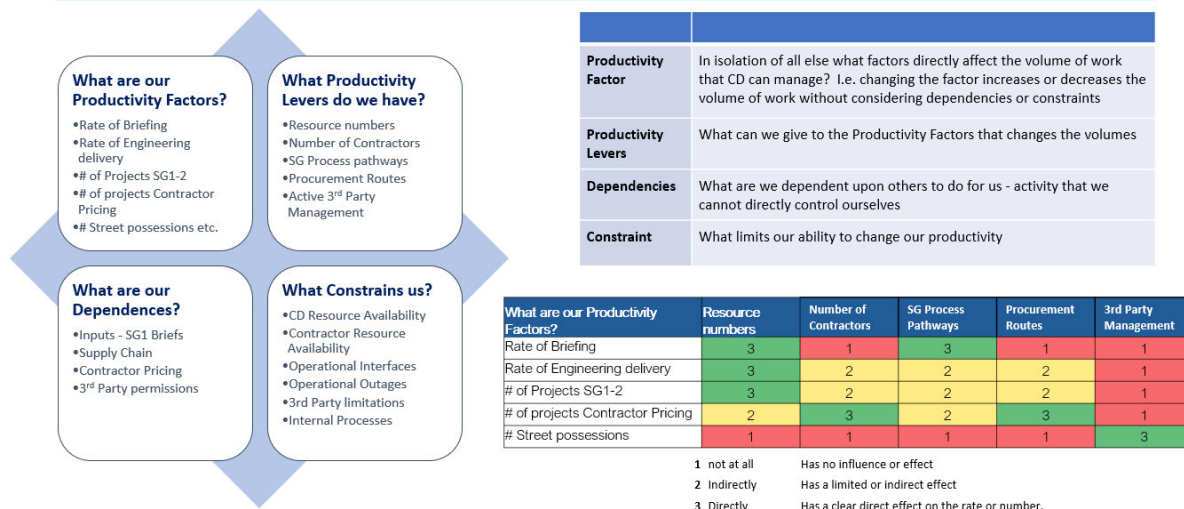


Figure 2 - Deliverability Model for assessing the AMP8 Plan.

Our latest analysis has updated our view of the Supply Chain capacity. This has considered the challenges of Engineering throughput and undertaken an assessment of the other constraints faced by Capital Delivery’s programme such as internal Operational and external third-party constraints.

We have set out below the key process steps to assess the latest deliverability work.

Programme Build

We use a ‘Programme Build’ methodology to enable a programme and project-level analysis which supports our understanding of the programme and underpins our confidence in deliverability. It will support a number of outcomes:

1. Organisation of delivery to support roles and responsibilities and accountability between internal client team and wider Supply Chain.
2. Optimisation of the schemes: including the consolidation of multiple needs at one site, grouping of similar works into programmes and the sequencing of schemes to optimise resources.
3. More detailed assessment of Deliverability – according to length of delivery, dates achieved and where we have risks and opportunities.

The methodology involves applying different templates to each scheme line in the AMP8 Plan depending upon the type, size and complexity of the project.

The process of applying these templates results in a more realistic indication of delivery timescales, as the templates are derived from AMP7 performance, and result in a modification of the forecast expenditure profiles. The initial Programme Build requires further assessment and updates which are necessarily iterative and involve input from across the end-to-end asset management lifecycle including the supply chain. Initial challenge workshops have been held. Further structured workshops will continue to be held over the forthcoming months to support increasing programme maturity and confidence.



There are some limitations to the Programme Build methodology listed below, where the application of the templates can produce results which need real life challenge and experience to be applied through the workshops:

- Programmes of work such as the Storm Overflows where large number of individual schemes each have the template applied – the actual delivery will be as a programme with grouping and batching of work which will affect the overall delivery schedules.
- Large projects (typically greater than £50m) are more likely to have expenditure profiles and overall durations that will be outside of the standard templates.
- Common types of work such as SEMD, SCADA and IED have been shown as individual schemes with their own template applied. However, similar to programmes, the delivery details may include batching, or incorporation of the need into larger projects on sites with other needs.

A final limitation of the approach applies to the schemes describing continuous investment such as maintenance funding allowances. In these cases, the Programme Build does not apply any template but replicates the annual profiles in the Data Tables.

The initial programme build based on the October 2023 Gold Plan was completed in December 2023. The ongoing discussions regarding the updated plan meant that a refresh would be required once the submission was finalised (April 2024). We used some high-level assumptions based on the P6 build at the time and CD Deliverability remained broadly unchanged although SEMD, SCADA and IED were informally accepted based on the assumption that alternative supply chain could be secured.

Following confirmation of the updated Plan, a second Programme Build was completed, this went through a further update prior to being used for the Deliverability Assessment described here. We have conducted initial collaborative workshops with asset planning, engineering and the Strategic Planning Partner (SPP) to ensure we are optimising the plan and pushing our deliverability envelope. This updated plan will be transferred to our live system in September 2024 and will be updated as part of the monthly cycle.

All the above activity has contributed to our deliverability assessments which will continue to mature as we will progress towards AMP8.

Latest Deliverability Assessment

For the latest assessment of Deliverability, once a programme build of relative maturity had been achieved, we assessed the deliverability impact by deriving High, Low and Most likely cases that inform a revised Deliverability volume by considering three lenses:

1. Supply Chain Capacity – The assessed capacity of the contracting supply chain to deliver the AMP8 programme.
2. Throughput – SGO, Engineering development to SG1, the Stage Gate Process feed capacity.
3. Constraints – Internal and external (third party) constraints that have the potential to delay project delivery.

A further lens of 'Schedule' has been assessed for initial deliverability based on the durations from the P6 Build templates. Initial challenge workshops have been held as noted above to improve where possible. This will be ongoing in the coming months and needs further involvement from Operations and Supply Chain. At this stage this has not been incorporated into the High/ Medium/



Low (H/M/L) view (established from the supply chain feedback) as with the three lenses above as the feedback applies to specific individual outputs.

In practice the three lenses are interdependent, however, the modelling of this is complex and requires further time to iterate. This will continue past our Draft Determination response as we continue preparations for AMP8 and increase our understanding of potential constraints.

Supply Chain Capacity

[Redacted]

The area of concern for capacity remains in the non-infrastructure contractors where even the most likely case indicates that there is current insufficient capacity, further reinforcing the rationale for the Deliverability Mechanism referred to below. Work is ongoing as part of the AMP8 Mobilisation Programme to seek to identify ways of increasing this capacity. Infrastructure capacity is healthy, although there is further ongoing procurement activity to support increasing Mains Replacement capacity given the required step up in kilometres replaced in AMP8.

The actions derived from the recommendations from deliverability assessments are aimed at increasing the capacity as far as possible. This is being delivered in a number of ways such as through engagement with major contractors on large projects and sharing allocated programmes with our Framework Contractors to collaborate on the activities and build a stable and sustainable core programme as well as optimising the front end of the Programme to increase confidence in required solutions and bringing innovation where possible.

[Redacted]

[Redacted]

[Redacted]

Throughput

Throughput assessment considers how the initial solutions are briefed into projects and designed before being contracted with the Design and Build Supply Chain.

The approach and assumptions used to assess the Stage Gate (SG) Throughput was as follows:

1. SG0 dates (outputs are first formed into projects or programmes) have been reviewed by the Asset Strategy and Planning team and revised in the updated programme build where appropriate. The run rate for these was considered achievable.
2. SG0 to 1 (the initial design phase to establish the solution and produce a brief) durations were built into the templates using guidance from the Engineering teams. The expenditure in this phase is also set by the templates at 5% of the overall project latest best estimate (LBE). This percentage is less applicable for certain projects and programmes but in line with industry norms.
3. The capacity for Engineering was derived based on the utilisation of internal TW engineering resource and externally through the existing Framework Agreements.
4. The limitations for analysis of the impacts were set at a SG0 to SG1 with a low of £20m per year, most likely at £40m (which would utilise all of the current framework agreements) and a high of £80m which would require sourcing capacity outside of the frameworks. This procurement is ongoing and is due to complete by October 2024.
5. The effect of limiting the spend in each year by delaying the start dates and shifting the profiles was modelled. This is a top-down approximate method and can have a high margin of error as the full effects of downstream compression and impact on other project start dates cannot be fully modelled. However, it does provide an indicative range for the impact on varying spend volumes.

Operational and Third-Party constraints

During delivery of programmes and projects different constraints may be encountered. Some of these apply to whole sections of similar work (e.g., Street works permissions on Mains Replacement) whilst others will be experienced on a site-by-site basis (e.g., restricted access to a treatment works). Further constraints such as availability of Operational staff, requirements for outages and seasonal effects apply to particular investment quadrants.

The determination of standard durations between Stage Gates are based on current AMP7 performance and therefore include some degree of the historic impact of these constraints. It was considered appropriate for the purposes of assessing Deliverability to apply further analysis to the AMP8 Plan.

The approach and assumptions used to assess the Operational and Third-Party constraints was as follows:

1. Wastewater projects in the plan have referenced the Operations' engagement activities carried out as part of the PR24 Submission build. These summary observations are noted against each project and an assessed range of impact applied. It also includes updates on current asset performance, and third-party issues affecting land ownership and/ or access to the site.
2. Water projects have been assigned a reference to the broad need (no specifics yet known) for outages and valving operations using Network Service Technicians (NSTs) - this is an issue which is currently experienced in delivery of AMP.
3. Specialist HV replacement or upgrade projects have been separately noted along with SCADA; both need an outage of some kind to switch over.



4. All the above have been given a three-point estimate and the overall impact totalled.
5. The overall draw on Operations' time to support the development and construction phases has not yet been included – this is a key next step.

The assessed impact of the above results in a Deliverability limitation less significant than the Throughput and Contractor capacity. We are planning to continue analysing potential effects at a more granular level of detail.

Schedule

Assessment of Schedules is ongoing, this is an iterative process which has, as described, evolved from initial Gold Plan build, through current schedule build ready for launch in live system in September 2024. This will then evolve as there is more definition in the plan following response to Draft Determination and the programme continues to mature.

As described earlier, the P6 Scheduling software applies a standard Template of stage gate durations based on Quadrant (i.e. type of project), size, and complexity of the projects for SG1 through to SG5.

The resultant forecast output achievement date (in our templates this is just before SG4) has been compared to the Regulatory or other target dates included in the plan to identify the variance and inform the proposals for Deliverability Mechanism as set out below.

Core Plan and Deliverability Mechanism Schemes

In our April 2024 submission it was identified that for additional outputs, a Delivery Mechanism (DM) was appropriate and that the initial list of outputs would be provided as part of the Draft Determination response. Our assessment has enabled a programme and project level first view of the schemes that are likely to be within the Core Plan and the DM. This has been reflected in the Data Tables.

The specific list of projects within the DM will evolve as we continue to improve programme and project maturity ahead of the Final Determination.

Conclusion and Next Steps

Analysis of Deliverability within Capital Delivery has highlighted a number of constraints and concerns in our ability to deliver the revised plan, reinforcing the need for Ofwat's gated process and Delivery Mechanism, giving us the opportunity to work to improve our position and deliver more for our customers. The assessment concludes;

- There are specific concerns around supply chain capacity of non-infrastructure contractors. We have a clear set of actions to help mitigate the concerns identified, including working more collaboratively across the supply chain.
- The throughput to producing Briefs via Engineering is the main area for focus to improve in the short term and support launching the Programme effectively.

This further underpins the importance of the Delivery Mechanism, and we support Ofwat's approach.

Proposed key next steps to improve on our deliverability and address the constraints highlighted are outlined below;

- Establish a collaborative sprint with the Supply Chain (Engineering and Consultants) to understand pinch points and required changes.



- Develop proposal for Commercial Strategy being clear on Market Engagement/ Risk Allocation/ SG0-2 engagement and incentivisation.
- Identify no regret tranches of work which can be issued to Supply Chain with lower engineering insight.
- Build out Engineering Outsource Strategy to increase through flow (need to align with CD Design and Build contractors to reduce hand offs).
- Structured Programme Reviews by Sub Programme with attendees from across end to end asset management lifecycle– updates to feed into business-as-usual monthly cycle updates; and
- Establish Teams through Turnaround Plan (Initiative 14) work to build our understanding of material constraints and develop more detailed mitigation strategies as programme maturity increases.

Progress will be tracked and monitored through the AMP8 mobilisation programme and reported into Monthly Business Reviews with the CEO and CFO.