TMS-DD-047

Asset Health Improvement Strategy

Contents

1. Purpose of this document

In the PR24 Draft Determination, Ofwat has proposed to include an allowance of up to £1 billion of customers' funding for Thames Water to invest to improve the health of its water (up to £500m) and wastewater (up to £500m) assets. This allowance will be over and above our existing capital maintenance programme. It will be for a programme of works in the period 2025-30 to deliver better service for customers and the environment from improvements to existing assets.

We welcome this proposed allowance as it recognises the impact of poor asset health on our performance and the need to address issues now instead of waiting for the next price review.

We acknowledge the concerns raised by Ofwat in its Draft Determination with respect to our TMS15 Asset health deficit submission[1]. This document, supported by the relevant asset group gated submissions, seeks to respond to Ofwat's concerns and provide sufficient evidence to progress the investment needs proposed to the next stage of the gated process.

This document addresses Ofwat's concerns and is structured as follows:

- Section 3: Our approach to asset management
- Section 4: Our approach to risk management
- Section 5: Needs identified to address asset health risks
- Section 6: A comparison of Ofwat and Thames gates and recommendations
- Section 7: Delivering through a gated process
- Section 8: Summary and next steps for the PR24 final determination

Through this allowance we intend to secure asset health improvement funding for the following asset groups (but we note that the balance of investment across these cohorts may change as prioritisation and confidence in solution costs improves over time and gates are passed):

- Water treatment and pumping asset health improvements: £90m
- Water service reservoirs and water towers asset health improvements: £170m
- Trunk mains asset health improvements: £170m
- Water operational technology and ICA asset health improvements: £70m
- Sewage treatment / network asset health and performance improvements: £100m
- Wastewater critical asset – asset health improvements: £150m
- Rising mains asset health improvements: £180m
- Wastewater operational technology and ICA asset health improvements: £70m

2. Background

Asset health is critical to deliver our long-term Vision for 2050, but poor asset health is a key root cause of our performance challenges today. We need to improve the health of our water and wastewater assets to enable us to deliver performance improvements to customers, communities and the environment. Historical levels of maintenance investment have led to us repairing assets rather than replacing them and this is only sustainable for a limited period. Poor asset health today impacts our financial position through performance penalties.

[1] PR24 Draft Determinations; Expenditure allowances – Thames asset improvement gated allowance appendix

We have a clear vision to 2050 to improve performance, resilience, and the environment and one of the deep-rooted issues we must address is the capital maintenance spend on our existing assets.

We welcome the opportunity to use the Asset Health Improvement gated allowance in 2025-30 to target improvements in specific groups of assets that are critical to safety, customer service and environmental performance.

We operate an ISO55001 Accredited Asset Management System and have an established governance framework for investment across our capital programme. This provides us with a robust foundation to proceed through the gated allowance using strong asset management and governance principles.

3. Our Approach to Asset Management

3.1. Asset Management Policy

- Our Asset Management Policy was approved by the Executive Risk Committee in October 2022 and was reviewed in October 2023. The aim of this policy is to ensure we safeguard asset performance, integrity and resilience in the delivery of water and wastewater services. This is delivered through managing the risks, health and performance associated with our assets
- Setting assets standards for design, maintenance, operation, and decommissioning of our assets to provide a safe, reliable, sustainable, and efficient service
- Prioritising health, safety and wellbeing and the environment
- Developing asset strategies and plans that optimise performance, risk and efficiency and provide best value for our customers, stakeholders and environment
- Providing a sustainable and efficient asset base to achieve our environmental commitments
- Adopting a systems-thinking approach which considers short to long term perspectives and resilience across all business planning cycles
- Maintaining and continually improving our data, insight, and tools so that our investment decisions are supported and evidence based
- Planning and prioritising the resources needed to operate our asset management system and meet our objectives
- Driving continual improvement of our asset management maturity through collaboration with the utility sector, our stakeholders and partnerships and seek new opportunities to innovate

The Policy applies to all Thames Water employees, third party contractors and partners working for, and on behalf of, Thames Water, who are involved in the management and operation of our clean water and wastewater network and treatment asset systems, along with adjacent systems that contribute to the water cycle.

We report regularly to Thames Water's Executive Committee and the Audit, Risk and Reporting Committee on our performance against this policy. In the policy, we also set out to maintain ISO55001:2024(en) Asset Management – Management Systems accreditation.

3.2. Asset Management System

Our Asset Management System (AMS) is hosted on our internal Sharepoint site. Our ISO 55001 accreditation for the system was maintained in December 2023. Our AMS is inclusive of physical assets owned and managed by Thames Water and used directly for the provision of water and wastewater services:

- Clean water network assets
- Clean water production assets
- Wastewater network assets
- Wastewater treatment assets
- Sludge treatment centres
- Renewable power regeneration
- On site buildings
- Telecommunications

This is inclusive of the following activities:

- Strategic asset management (inc. asset planning, capacity studies, system review, water resource management planning)
- Investment activities following on from front line identification through to solution design and project definition
- Inspection, operation, maintenance and design of assets
- Asset data linked to all activities
- Delivery of enablers to support framework
- Procurement (inc. acquisition), monitoring, reporting, decommissioning and disposal
- Resourcing and HR activities related to capability

The scope of our AMS is shown in Figure 1.

Figure 1 – Asset Management System Framework

Source: Thames Water

3.3. Asset Strategy Framework

Our Long Term Delivery Strategy (LTDS) for the PR24 price control period sets out the long-term outcomes that Thames Water aims to deliver. It sets out our five-year business plan in the context of a long-term delivery strategy, that is tested against specific external scenarios.

Our LTDS recognises that we have ageing infrastructure and the health of our assets is in need of improvement. Poor asset health is the root cause of many of our performance challenges and it poses an increasing risk to public safety, water supply, and to the environment. In some areas, poor asset health acts as a drag on our performance, which in turn impacts our financial position through performance penalties. The cost of managing our ageing assets and dealing with failures are substantial and make us appear inefficient.

As the world around us changes, we can only deliver our purpose if we adapt to meet future challenges too. Our ambitious vision for 2050 imagines a world where we've learnt from the past and adapted to the future so our customers, communities and the environment can thrive. It starts with tackling the issues that matter most to our customers right now: providing better customer service, finding and fixing leaks more quickly and reducing pollution. And it goes beyond our core services to help us become a force for good: equipping local communities with new skills, restoring rivers and producing more green energy than ever before.

Our Asset Strategy framework is designed to show the line of sight, from organisational ambitions and objectives, through policy, to asset strategy and asset plans. We provide more details on this in Appendix A.

4. Our Approach to Risk Management

Enterprise and asset risk management processes are in place across the organisation and risks are captured within common systems (Asset Planning System (APS) / Enterprise Risk Management Risk Registers and Principal Risk Dashboards). Risks are escalated within the asset risk management process through Local to Senior Risk Review on the APS Escalation Heatmaps; and within the enterprise (business) risk process this through Business Area Risk Reviews, the Executive Risk Committee and the Board Audit, Risk and Reporting Committee.

Our enterprise risk management process centres on a clear and simple approach, aligned to the ISO 31000:2018 risk guidelines. It provides a consistent end-to-end process to all business units, as well as integrating activities with the Executive Team and Board to align with our Turnaround Plan.

All Thames Water employees can raise emerging risks through the Emerging Risk Identification Form, and these are reviewed monthly by the Enterprise Risk Team, business Risk Managers and during relevant Risk Reviews with management to agree how these risks should be managed.

Escalation between the asset and business risk processes is facilitated by business Risk Managers within Asset Operations and Capital Delivery who are responsible for coordinating the asset risk management process and enterprise risk management process for their areas. Individual asset risks are aggregated when escalated to the Business Risk Register where the risk could have a material impact on the objectives of the business area ("Possible" "High" impact or "Probably" "Moderate" impact based on the Enterprise Risk Assessment Matrix). This is supported by the following escalation guidance:

- High or deteriorating impact of failure from an asset cohort, process or region (e.g. Critical Asset cohort)
- High or deteriorating likelihood of failure from an asset cohort, process or region (e.g. Water Supply from Large Water Processing Plants)
- Widespread causes for asset risks (e.g. deterioration in asset health, power resilience, chemical supply chain)
- Internal or external high impact incidents or near-misses (e.g. water quality contamination from air valves)

Aggregated asset risks are discussed by management at the Asset Operations and Capital Delivery and Asset Business Area Risk Reviews attended by the area's Directors and facilitated by the areas' Risk Manager / Risk Champion. These escalated risks form part of the Business Risk Register for the area. These are considered by the Board through the Enterprise Risk Process documented above.

There are currently 17 Principal Risks that are managed by the Enterprise Risk Process. Of these, eight have high relevance to this Asset Health Improvement gated allowance. These are:

- PR03: Design and deliver capital projects (Operational risk category)
- PR05: Legacy technology asset failure (Operational risk category)
- PR08: Asset performance and resilience (Operational risk category)
- PR09: Treat wastewater (Operational risk category)
- PR10: Supply of wholesome water (Operational risk category)
- PR11: Physical injury or mental harm (Operational risk category)

- PR13: We fail to comply with our own values, ethical behaviours & standards as well as our legal and regulatory obligations (Compliance risk category)
- PR18: Engage stakeholders (Strategic risk category)

Our risk appetite is reviewed by the Board for each Principal Risk and measured using Key Risk Indicators, as set out in our Enterprise Risk Framework Standard. This is informed by company strategy and customer and stakeholder expectations and also informs the risk assessment criteria for each impact area in our Enterprise Risk Scoring Matrix. This process is facilitated by the Enterprise Risk Management team, with support from the Principal Risk Sponsors and Sub-Risk owners. Our risk appetite statements for the Principal Risks most relevant to this gated allowance are set out in Appendix B.

5. Needs identified to address asset health risks

5.1. How We Intend to Use the Allowance

The asset improvement activities identified through our risk assessment propose and which we propose to fund through the gated allowance have been identified through a combined top down and bottom-up assessment.

Top down, we have analysed historical annual capital maintenance spend and compared this with that proposed in our AMP8 plan. Where there are marked differences between this historical spend and our plan, we have found these differences are largely attributable to particular asset groups where our bottom-up evidence is informing the need for an uplift in investment to address asset health concerns.

To undertake this analysis and help determine the asset groups we are promoting in the Asset Improvement Gated Allowance, we started with a review of the past capital maintenance expenditure, as reported in our Annual Returns. The results are included in Appendix C.

5.2. Our PR24 Business Plan

Our Draft Determination response mirrors the total allowance provided by Ofwat in the Draft Determination to improve the health of our assets. Our provision is for the asset groups as shown in the tables below. We have been mindful of our October 2023 business plan submission, the historical capital maintenance expenditure and the AMP8 capital maintenance in our final plan, when determining the asset groups that we are putting forward. These asset cohorts represent the highest risk to service and where asset health improvement is most needed to deliver our asset strategy and long-term objectives.

Table 1 - Gates allowance forecast and capital maintenance expenditure - wastewater

All costs in £m, 2022/23 prices Wastewater Asset Groups	Historical AMP equivalent	AMP8 capital maintenance	Additional AMP8 Gated allowance forecast	Gated allowance category	How we have responded
Sewage treatment works	527	845	100	Wastewater Performance	Gate 0 to be submitted by Apr 25
Gravity sewers – serviceability and performance	436	604			

Gravity sewers – critical assets excluding sewers in the rail environment	32	43	150	Waste critical Assets	Gate 0 to be submitted by Feb 25
Rising mains	40	121	180	Rising mains	Gate 0 submitted at DD; Gate 1 to follow
Operational technology / ICA	7	20	70	OT / ICA	Gate 0 to be submitted by Feb 25
Sewage pumping stations	166	181	-	-	N/A
Gravity sewers – sewers in the rail environment	49	38	-	-	N/A
TOTAL (excluding developer services, Group Services, IT)	**1257**	**1,853**	**500**	**N/A**	**N/A**

Source: Thames Water

Table 2 - Gated allowance forecast and capital maintenance expenditure - water

All costs in £m, 2022/23 prices Water Asset Groups	Historical AMP equivalent	AMP8 capital maintenance	Additional AMP8 Gated allowance forecast	Gated allowance category	How we have responded
Network pumping stations	77	95	90	Water Resilience	Gate 0 to be submitted by Apr 25
Water treatment works	425	505			
Water service reservoirs & towers	46	66	170	Service Reservoirs	Gate 0 to be submitted by Nov 24
Trunk mains	349	327	170	Trunk mains	Gate 0 to be submitted by Nov 24
Operational technology / ICA	24	20	70	OT / ICA	Gate 0 to be submitted by Feb 25
Raw water abstraction, aqueducts and tunnels	123	210	-	-	N/A
Distribution mains	884	1087	-	-	N/A
TWRM tunnels	10	9	-	-	N/A
Customer meters	36	180		-	N/A
TOTAL (excluding developer services, Group Services, IT)	**1974**	**2498**	**500**	**N/A**	**N/A**

Source: Thames Water

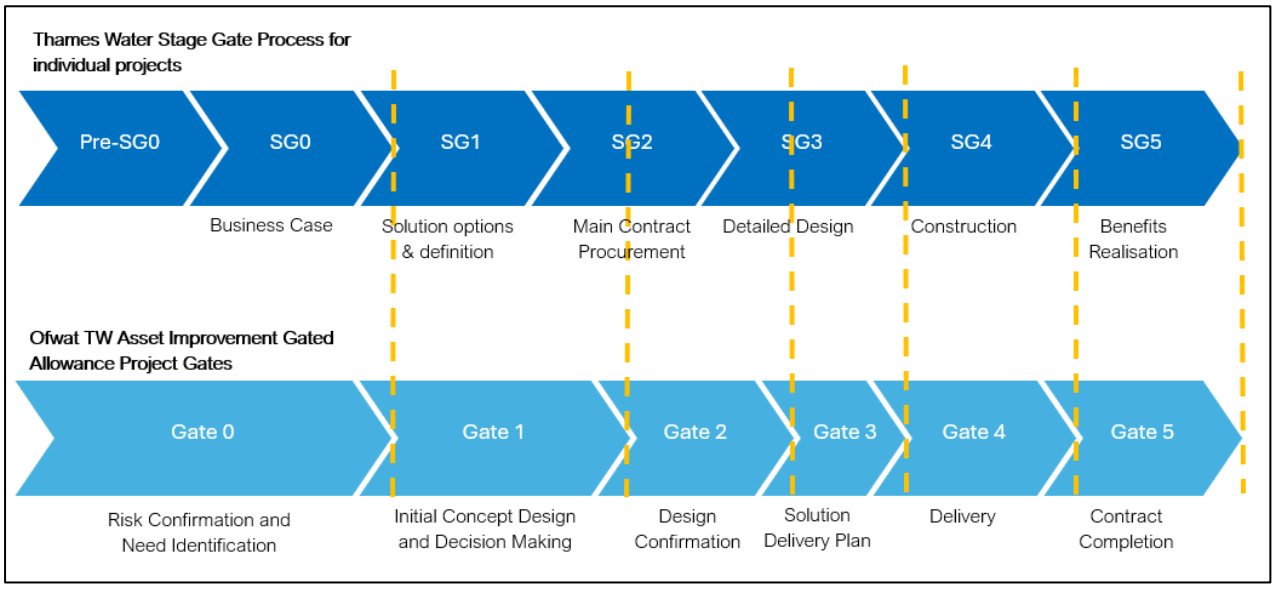
As a first step in this process, we are providing the Stage Gate Zero submission for Rising Mains[2].

6. The Gated Process

6.1. Comparison of Ofwat and Thames Water Gates

The Ofwat gates provide a high-level grouping of activities to progress a programme of work from needs identification through to delivery. The Gates include activities that sit within our own internal governance gated process. However, the mapping of these activities is not always consistent. The following figure and table highlight the key differences between the Ofwat gates and our internal stage gate process.

Figure 2 - Alignment of Ofwat and Thames Water gates (to be updated for asset health)



Source: Thames Water

[2] TMS-DD-055 Rising Mains Stage Gate Zero Submission

Table 3 - Comparison of Ofwat and Thames Water Gated process

Ofwat Gate	TW equivalent	Ofwat requirements	Thames Water requirements	Ofwat indicative time	TW time	Impact
0	Pre-SG0	Overall gated process strategy - How the company intends to use the allowance - Proposed timings for gates - Resourcing strategy demonstrating involving key teams such as capital delivery and operational teams at an early enough stage - How the company will align the gates to its own internal governance process, including capital delivery governance process	Currently no formal requirement to undertake these activities	2-6 months	1-3 months	We will need to develop a process to address these requirements and ensure resources available to support
	SG0	Risk Confirmation and Need Identification - Risk Confirmation and Need Identification - Identification of risk, consistent with a standardised risk methodology that complies with industry best practice, that the intended investment is proposing to address - Demonstration of the need for each of the investments, showing a quantified risk requiring a step-change in asset replacement - Demonstration of clear alignment with Thames Water wider policy, strategies and asset management plan - Which performance commitments are likely to be impacted - Identification of the potential scale and timing of the investment - Case to be supported with economic and engineering rationale and evidence	Business Case is consistent with Ofwat Gate 0 with the following exceptions: - High level solution cost estimates based on Engineering Estimating System (EES) are required ahead of SG1.		3-6 months	Demonstration of the need may require modelling, sampling, and additional work to be carried out that increases the duration of this gate.

Ofwat Gate	TW equivalent	Ofwat requirements	Thames Water requirements	Ofwat indicative time	TW time	Impact
		- Indicative timing and expenditure profile of investment associated with future gates, subject to review at further gates				
1	SG1 and SG2	Initial Concept Design, Optioneering and Decision Making - Identification of an unconstrained set of potential of options over a range of intervention types (both traditional and non-traditional) to meet the identified need. - Demonstration of engagement with stakeholders, where appropriate - Demonstrate multi-solution decision making and robust cost-benefit appraisal that clearly shows best value for customers and the environment to inform the selection of the proposed solution. - Indicative potential impact on performance commitments. - Evidence of costing methodology and approach, including benchmarking, been applied to derive the cost of options - Case supported with detailed economic and engineering rationale and evidence where necessary - Where appropriate Thames Water to propose and then to agree to Ofwat's incentives around delivery of future gates two and three	Solution Options & Definition is broadly consistent with Ofwat Gate 1: - We have a formal internal engagement process with Operations - 'Seek to understand' & 'Be understood' underpinned by a formal agreement with Operational teams called the 'Project Agreement Document' (PAD). - We have recently introduced a new activity to Stage 1 called the 'Delivery Constraints Assessment'. This aims to prompt the delivery teams at an early stage to consider potential constraints that could impact the project further down the line and to put in place any early	2-4 months	6-12 months	Optioneering can be complex, depending on the need. Site surveys, modelling, feasibility studies, etc. take time to deliver and inform the long list of options. The time allowed here should be determined on a case by case basis and specific to the needs being addressed.

Ofwat Gate	TW equivalent	Ofwat requirements	Thames Water requirements	Ofwat indicative time	TW time	Impact
			engagement necessary to mitigate the constraints at an early stage. Our EES cost benchmarking is undertaken when evaluating contractor price in SG2 and not SG1 Engineering rationale & governance conducted during SG1 - Technical Governance (TG) Reviews 1-3. Economic rationale conducted in SG0, SG1 & SG2.			
2	SG2 and part of SG3	Design Confirmation, Third Party Consultations and planning - Undertake appropriate outline design to enable engagement with the supply chain - Assess the impact of the proposed work on existing PR24 performance commitments and how the company will address any overlap between the cost allowance and outperformance or underperformance payments - Set out impacts on performance commitment levels - Set out proposed price control deliverables	Main Contract Procurement is broadly consistent with Ofwat Gate 2 with the following exceptions: - Outline design is predominantly undertaken during SG1 and not SG2 - scope and technical requirements are agreed at TG3 in SG1. - Resourcing and contractor management plan are monitored in	2-4 months	6 – 12 months	Development of detailed project delivery plan and stakeholder engagement rely on others to deliver. Additional time is often required to accommodate diaries and local authority meetings, for example.

Ofwat Gate	TW equivalent	Ofwat requirements	Thames Water requirements	Ofwat indicative time	TW time	Impact
		- Supported with detailed economic and engineering rationale Set out the draft delivery plan for the plan of interventions. This should include but is not limited to: - Overall timelines - Produce a breakdown structure of activities in specific locations with deliverables and milestone dates. - Programme organisational plan with roles and responsibilities for key positions. - Risk management process - Resourcing and contractor management plan. - Management information to track progress against, including profiles for costs, performance outcomes and other management metrics. - Stakeholder management plan and a clear approach to liaising with local authorities. - Governance process including audit and reporting to an appropriate level in the organisation.	conjunction with procurement at framework level. - Stakeholder management plans are fully defined in SG2 & SG3. - Governance process including audit and reporting are conducted throughout all Stages. - Risk management process - projects are setup in Active Risk Manager (ARM) in SG1.			
3	Part of SG3	Solution Delivery Plan - Completion of detailed design sufficient for the delivery/supply chain partner to price. - Identification of appropriate supply chain partner - Detailed costs consistent with agreed costing methodology and	Detailed Design is not consistent with Ofwat gates. This process is included in SG3 and forms part of our approach to detailed design. The following are the key differences between the Ofwat gate 3 and our SG3:	2-12 months	TBD	

Ofwat Gate	TW equivalent	Ofwat requirements	Thames Water requirements	Ofwat indicative time	TW time	Impact
		demonstration of benchmarking and assurance - Confirm impact on performance commitments and implement revisions to PR24 performance commitment levels. - Confirm Price Control Deliverables and incentive regime for the delivery phase. - Completion of pre-planning investigations and planning application, where appropriate - Ongoing demonstration of engagement with relevant stakeholders, where appropriate Finalise the strategy and delivery plan for the plan of interventions. This should include but is not limited to: - Producing a breakdown structure of activities in specific locations with deliverables and milestone dates. - Programme organisational plan with roles and responsibilities for key positions. - Risk management process - Resourcing and contractor management plan. - Management information to track progress against, including profiles for costs, performance outcomes and other management metrics. - Stakeholder management plan and a clear approach to liaison with local authorities.	- Frameworks are in place and contractors typically appointed at end of SG2 post Asset Investment Committee (AIC) governance & funding release. - Design & Build contractor starts in SG3. - Pre-planning investigations and planning application - where possible this is undertaken in SG1 when there's an opportunity to do so for de-risking purposes and sometimes during SG2. Otherwise undertaken in SG3 as part of design & build works. - Strategy and delivery plan for the plan of interventions are iterative from SG1 onwards.			

Ofwat Gate	TW equivalent	Ofwat requirements	Thames Water requirements	Ofwat indicative time	TW time	Impact
		- Governance process including audit and reporting to appropriate level in the organisation - Confirm Thames Water's cost for delivering the scheme, the cost to be included in the total of the overall gated allowance The overall gated allowance is not varied by increases in the contract sum above that established at Gate 3 - Agree the forward monitoring programme				
4	SG4	Delivery - Completion of construction and delivery of intervention - Testing and commissioning completed and approved, where appropriate - Ongoing reporting of performance including expenditure, outputs and outcomes - Beneficial use or the scheme is capable of beneficial use - Evidence that costs are in line with what was agreed at previous gate and cost data is captured for future use in cost data analysis	Construction is consistent with Ofwat Gate 4	To be confirmed in Gate 3	TBD	
5	SG5	Contract Completion and Scheme Closed – In accordance with Thames Water's Construction Contracts - Confirmation that the Works have been accepted by Thames Water's operations department and put to work	Benefits Realisation is broadly consistent with Ofwat Gate 5 with the following exceptions: - Confirmation that the Works have been accepted by our Operations	12 months	12 months	

Ofwat Gate	TW equivalent	Ofwat requirements	Thames Water requirements	Ofwat indicative time	TW time	Impact
		- Confirmation that work has been completed by the issuing to Ofwat of a copy of the completion certificate - Evidence of improvement in outcomes and performance - If the works are not delivering as expected, the reasons why and what remedial action has been taken - Demonstration of ongoing monitoring of performance impacts and risk reduction - Confirmation that work has been completed satisfactorily by the issuing to Ofwat of a copy of the final certificate	department and put to work – this is formally agreed in SG4.			

Source: Thames Water

6.2. Recommendations for AMP8 gated process

We have considered Ofwat's proposal and how best to structure the gated delivery process, reflecting on our AMP7 conditional allowance experience and noting the principles that were established in PR19[3].

We believe the recommendations included in the "Approach to the RAPID programme and gated process for PR24", published by Ofwat August 2024 are relevant to the asset health gated process proposed in the Draft Determination.

After consideration, we are seeking engagement and agreement on the following:

1) Define the nature and extent of assurance required at each gate (as it may differ depending on the asset groups and gate);
2) Align Ofwat Gate with Thames Water's internal governance stage gates where possible;
3) Flexibility within the gated process which removes the requirement of standardised gate timings to ensure appropriate outcomes and reflect previous experience with PR19 conditional allowances;
4) Clarity over the deliverables and success criteria to be satisfied for each gate; and
5) Solution substitutions and batches or tranches of work, where appropriate.

These recommendations will mean that more solutions can be considered as part of our asset health improvement programme, enable work to be progressed at pace, and make sure assurance delivers value for money.

Define nature and extent of assurance required

Ofwat has included additional detail of the scope of work required by a third-party assurance provider in the Draft Determination. This work must be undertaken before we can proceed to the next gate. The assurance scope is clearly presented and corresponds with the specific activities required to be delivered for each gate.

We would welcome greater clarity over the nature and extent of assurance required for each of the asset groups in scope. For example, where a high-level review and light touch agreed upon procedures may suffice and where a more granular review, for example assessing a detailed project scope and corresponding cost estimate, will be required. We are conscious of the way that scope maturity increases over time.

Assuring outputs such as scope and cost too early in the process can slow the pace and add little value. Once the scope is sufficiently mature, typically after supplier engagement (Gates 2 and 3 of Ofwat gated process)[4] then cost assurance becomes more relevant. This also relates to the level of certainty or uncertainty in a programme at each stage of development. At Gate 0 there is greater certainty around the need, and less certainty around the potential solutions, costs, and delivery profiles. The change in certainty should be reflected in the extent and focus of assurance required.

[3] See R.G1.GP.01 Gated Process Design Summary; Appendix 1

[4] PR24 Draft Determinations: Expenditure allowances - Assurance requirements for delivery of enhancement schemes; page 17

It would be helpful to establish assurance thresholds, for example a definition of materiality at each gate. Through PR19 we recognised the importance of justifying the needs early in the process. Once the needs were defined and agreed with Ofwat it was easier to progress at pace. This required extensive engagement and several iterations of submissions and supporting documentation. There may be value in focussing the assurance on the most critical aspect of each Gate. For example, the focus of Gate 0 would be to deliver a programme of assurance that provides Ofwat confidence over the needs proposed to take forward.

We also recognise there will be areas of investment subject to scrutiny by other regulators, such as the DWI and EA. To avoid duplication of effort, we propose that the nature and extent of scrutiny applied from others be considered in the determination of assurance expectations.

Align Ofwat Gate with internal governance stage gate

As noted above, Ofwat Gate 0 includes activities that are not currently included in our SG0 and Thames Water's internal stage gates straddle Ofwat gates in some instances. Where possible, aligning Ofwat's gated requirements with our own internal processes helps to speed up the process and allows for programme delivery that is more in line with business-as-usual.

We will also look at how to adapt our internal governance to reflect the specific needs and requirements identified by Ofwat in the DD. For example, by considering how we might incorporate the Ofwat Gate 0 activities into a pre-SG0 or SG0 process more explicitly.

Flexibility within the gated process which removes the requirement of standardised gate timings

Ofwat has recognised the alignment of gate timing across investments is less important from gate three onwards, and, from lessons learnt across gates one and two of the PR19 conditional allowances, Ofwat found little importance for standard timings across the initial gates, with a number of external factors having an impact even in the early development stages[5].

We welcome Ofwat's conclusion that the aim is to ensure a balance of avoiding developing solutions too early, taking account of the length of time it can take to develop large infrastructure. This supports our proposal for greater flexibility around gate timings to be applied to the asset health allowance.

Historically, we expect projects to take on average 51 weeks to progress each of the following stages in line with our internal assurance requirements as described in Table 4. The indicative timings in the Ofwat gates do not currently allow sufficient time for optioneering and detailed design to be completed. The timings also do not reflect the assurance activities and Ofwat engagement required for each gate.

[5] Approach-to-the-RAPID-programme-and-gated-process-for-PR24; August 2024

Table 4 - Illustrative programme by Stage Gate duration and assurance (example of rising mains replacement in AMP7)

Stage Gate	Description	Time in months	Internal Assurance Requirements	Costs assumptions
SG0	Validation & Requirements	* 2 months including Technical Governance Meetings (1,2&3) to discuss & agree solution	Business Case Documentation, Stage Gate Checklists	Mainly internal costs (timesheets)
SG1	Solution Option & Definition	* 6 - 7 months duration with monthly reviews to assess position.	Construction Design Management (CDM) Deliverables including Project Agreement Document (PAD), Solution Definition & Stage Gate Checklists	Mainly internal costs (timesheets), however possible Contractor early involvement (ECI) where a design budget would be allocated
SG2	Preliminary Design	* 6 - 12 months dependant on development funding	Construction Design Management (CDM) Deliverables including HSE Requirements, Confirmation of Project Brief (Scope of Works) & Stage Gate Checklists	Overall internal Governed Budget for the project agreed at Investment Governance meetings (including Risk, Other Project Cost (OPC), D&PT), Contractor Latest Best Estimate (LBE) for the individual project
SG3	Design Development & Planning for Construction	* 2 - 12 months dependant on permitting requirements (i.e. Section 159 & Traffic Management), Environmental Consents	Construction Design Management (CDM) Deliverables including Contractor Appointment Letters, Environment, Design, Customer, Notice to Proceed, Project Agreement Document (PAD) & Stage Gate Checklists	Ongoing project costs (as per SG2) including any variations for change control
SG4	Detailed Design, Construction	* 12 -18 months dependant on complexity of design and methodology of works	Construction Design Management (CDM) Deliverables including Completion Certificate, Project Outcome Form (SKFs), Project Agreement Document (PAD), Take	Contractor & internal costs to commence close down of the project

Stage Gate	Description	Time in months	Internal Assurance Requirements	Costs assumptions
			Over Certificate (TOC) & Stage Gate Checklists	
SG5	Close Down & Post Project Performance Review	* 12 Months (Defect Period)	Stage Gate Checklist, Final Account & Final Certificate (Defect Period)	Contractor and internal costs for Final Account of the project
Total		40 - 63 months		

Source: Thames Water (Capital Delivery team)

** Subject to review for each individual project*

When we reviewed the gates and their corresponding scope, we consider the indicative Ofwat timings proposed to be optimistic and not consistent with our internal governance process or experience in the PR19 conditional allowances. During AMP7, significant time was spent by both Ofwat and Thames Water to come to a shared understanding of the steps involved in progressing a scheme from needs identification through to delivery. The time and effort required for each stage were approved by Ofwat and funded through the conditional allowances. We would welcome a review of the AMP7 timings and recognise AMP8 will need to show a stretching improvement to the pace at which we progress our investment.

Clarity over deliverables and success criteria

We are mindful of the volume of work required to deliver our PR19 conditional allowances and the impact this has on assurance and Ofwat's ability to review and engage with the material. It would be helpful to have a more formally defined and agreed approach to addressing the gate requirements, with a view of the deliverables expected and success criteria. We consider this would also help to establish thresholds beyond which a gate is seen to have been passed. For example, it may be in customer interest to progress through a gate without having done the relevant stakeholder engagement at the time of submission. Understanding the critical success criteria will support prioritisation of work and allow us to move at pace.

Additionally, and on this basis, the gated requirements may include the addition of a 'to be addressed' or 'programme risk mitigation' section. Any activities not delivered as part of the gate submission may be accepted by Ofwat and approval given to progress to the next gate. This is provided there is a clear line of sight to how and when they will be delivered, or if not, that the appropriate mitigation is in place.

The deliverables produced for the PR19 gated allowances form a good starting point when assessing the requirements of the PR24 gated process. An element of standardisation across the allowance and the sector will support greater efficiency of the assurance process and improve the ease with which Ofwat can access and review the information shared.

We note the pragmatic approach taken by Ofwat in its approach to the RAPID programme, which provides an indicative list of deliverables for Gate 1[6]. We expect similarities across the asset health gated process and welcome this early visibility of deliverables and constrained nature of the list proposed.

[6] Approach-to-the-RAPID-programme-and-gated-process-for-PR24; (August 2024), page 13

Solution substitution and batching

As noted by Ofwat in its recent publication on RAPID[7], there are instances where it will not be possible or in the best interest of customers to progress the solutions proposed in the early gates. Additionally, we may identify new solutions, in addition to those already identified and funded. New solutions could emerge because of continued analysis and the early contractor engagement process.

We propose that in PR24, for solutions entering the gated process, where it is deemed unsuitable to progress further from gate two up to and including gate three, the future development allowance for the solution can be transferred, with Ofwat's agreement. This will be put forward as a potential option if there is a reasonable and compelling substitute solution that delivers the same expected benefit or additional value. This would be amended through the end of period reconciliation model.

We also expect some asset health groups to progress solutions in 'batches' or 'tranches' of work. We would welcome the opportunity to progress these on a rolling basis, without the need to resubmit Gate 0 for each batch of proposed investment. As an example, rising mains are likely to progress in batches of work. Provided the need is agreed with Ofwat at Gate 0 and the high-level solutions proposed at Gate 1 are accepted, a light touch approach to approving subsequent batches of work to progress through Gates 3 to 5 would increase efficiency and pace of delivery.

We propose that in PR24, for solutions entering the gated process, where it is deemed unsuitable to progress further from gate two up to and including gate three, the future development allowance for the solution can be transferred, with Ofwat's agreement, if there is a reasonable and compelling substitute solution. This would be amended through the end of period reconciliation model.

7. Application of the gated process at PR24

This section outlines how we propose to apply the gated approach to our asset health enhancement cases. This includes our initial proposal for the following:

- Timings for gates;
- Resourcing strategy demonstrating involving key teams such as capital delivery and operational teams at an early enough stage;
- Ofwat engagement;
- Assurance of our submission; and
- Shareholder contribution.

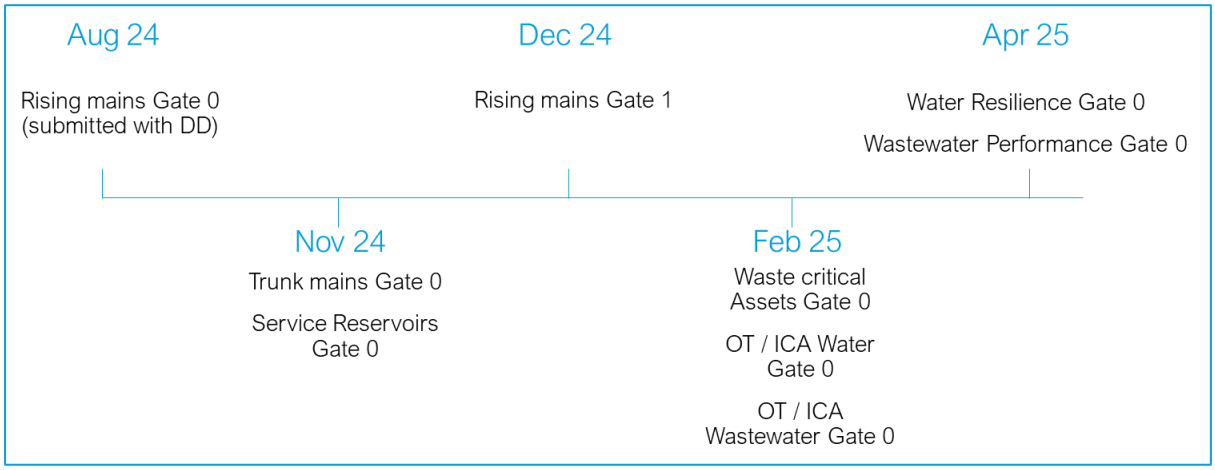
7.1. Timing of gates (indicative)

Our proposed timing of gates is detailed in

Figure 3.

[7] Approach-to-the-RAPID-programme-and-gated-process-for-PR24 (August 2024)

Figure 3 – Proposed timing of gates



Source: Thames Water

7.2. Resourcing strategy

We are in the process of reorganising our business to provide simpler and clearer lines of accountability and responsibility to enable delivery of our PR24 Plan. This includes a review of our Operational, Asset Management, Engineering and Capital Delivery teams, where better alignment and programme focus across asset groups is important. We have prioritised earlier engagement with the capital delivery supply chain to maintain momentum and increase delivery capacity as we move into AMP8.

We have also introduced the 'Sponsor Model' into our organisation, leading across all departments and functions bringing a single point of accountability for the delivery of our investment programme from beginning to end. This brings a step change to our approach in how we deliver large scale investment ensuring we achieve good value for our customers by focusing on time, cost, quality with clear line of sight to achieving improved performance and value whilst also understanding risk and driving greater efficiency.

7.3. Ofwat engagement

We will develop a proportionate programme of engagement with stakeholders, as required by the conditional allowance. As part of this, and based on our experience with PR19, this will include a programme of regular engagement with Ofwat, including touch point meetings and site visits. Ofwat engagement is a critical enabler of success and supports delivering programmes at pace. For example, we intend to establish touchpoint meetings prior to formal submissions provide a useful tool to give Ofwat additional context, which may include a site visit, to enable them to conclude on our gate submission.

Touchpoint meetings also allow for other core members of the conditional allowance team including those from capital delivery and procurement to engage with Ofwat and share our approach as SMEs. This has proven valuable in PR19, where the key risks and opportunities can be better articulated when done first hand. This also provides access to experts who can quickly respond to Ofwat questions without the need for extensive written correspondence which can slow the overall gated process down significantly.

7.4. Assurance of our submission

We recognise the need to have an independent third party to assure our gated submissions for this allowance. Due to the requirement that this assurer have a duty of care to Ofwat, the need to clarify the nature and extent of assurance required at each gate, and the proposed amendments to the timing and alignment of Ofwat gates with our own internal governance process, we have not yet appointed a third-party assurance provider.

We have reflected on the assurance requirements proposed by Ofwat in "PR24 Draft Determinations: Expenditure allowances - Assurance requirements for delivery of enhancement schemes" and are confident our submissions include the information and supporting evidence necessary to progress with assurance. We will work with Ofwat following our Draft Determination response submission to agree an assurance provider and progress with the work needed to give Ofwat confidence we have delivered the scope of work for each of the asset groups as required by the DD.

7.5. Shareholder contribution

Where our proposed expenditure overlaps with the expectations from base expenditure there is a need for our shareholders to make a suitable contribution to the cost of the improvement works. Where relevant, we will identify areas for potential shareholder contribution as part of our Gate 0 process, subject to confirmation at Gate 2 on option selection. We expect to formally establish this commitment at Gate 3 when customer funding is confirmed.

8. Summary and Next Steps

This document has addressed the concerns raised by Ofwat in its Draft Determination. In summary, we have:

- Provided detail of our asset management approach and how it is informed by robust data (including from investigations);
- Explained how the asset management approach for each asset group relates to our wider asset management policy and corporate strategy and plans;
- Explained our standard risk assessment process and how it applies to asset health;
- Concluded on the needs we propose to address in AMP8 by asset group, with more detailed information for Rising Mains included in a supporting document[8];
- Demonstrated that the risks to asset health and impact on performance are outside management control and require additional funding to resolve;
- We will be providing information on proposed solutions and costs in our Gate 0 submissions to the timetable set out above.

We are confident in the robust and systematic approach we have applied to assessing risks and determining our priorities for AMP8. The conditional allowance is a welcome contribution, alongside our base expenditure programme, to improving the health of our assets and improving our performance.

We propose to submit our next Gate 0 submissions as noted in Section 7.1 above. This includes the submission of trunk mains and service reservoirs in November 2024, waste critical assets and both operational technology cases in February 2025, and waste performance and water resilience in April 2025.

There is still work to do in defining our approach to delivery of the gated process in respect of how we organise ourselves internally. This forms part of our wider resourcing strategy and will be influenced by our experience with the AMP7 conditional allowance programmes.

To make sure we maintain the momentum that the business plan and DD response process have facilitated, we will continue to develop our gated submissions for each asset group. Additionally, we will work with Ofwat to clarify and confirm the assurance needs and how we will engage going forward.

Board engagement is a top priority, and critical success factor for the asset health allowance. We are currently developing a programme of board engagement which will formalise the meetings and approval requirements and provide a forum for the Board to test and challenge our asset management and risk assessment approach as part of a continuous development process. This includes an update to our board on the nature of the gated process, the impact to our current delivery programme, and the extent of additional assurance required in AMP8.

Board engagement will also be necessary to respond to areas of our proposed expenditure which overlaps with expectations from base expenditure, as this scenario requires our shareholders to make a suitable contribution to the cost of improvement works.

In summary, the next steps we propose include:

- Establish formal board engagement

[8] TMS-DD-055 Rising Mains Stage Zero Submission

- Engage with Ofwat on assurance requirements and appoint 3rd party assurance provider
- Develop and implement resource plan to deliver conditional allowances
- Progress development of gate submissions for asset groups

Appendix A – Asset Strategy Framework and Asset Strategies

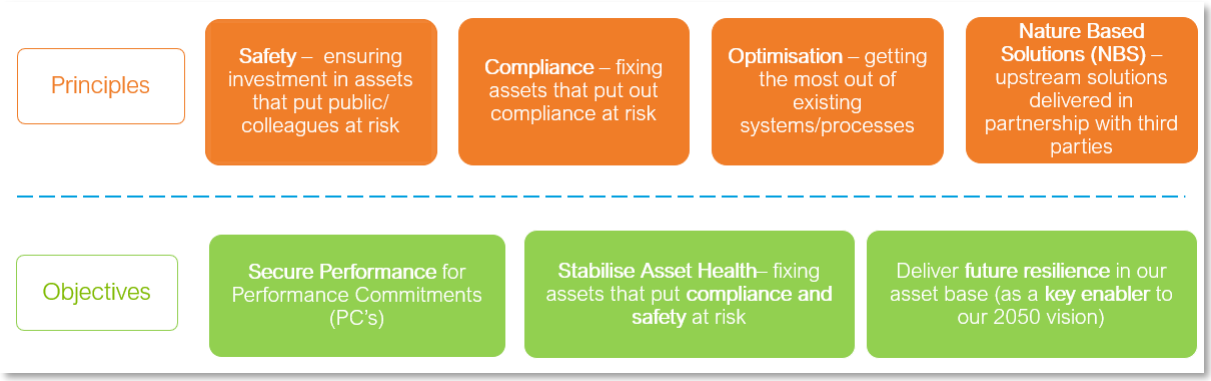
One of the most important activities at the heart of providing value and achieving our corporate objectives is sound asset management. To make sure our asset management is aligned with and contributing to these objectives, we must ensure that we follow our Asset Management Policy in developing strategies that set challenging yet achievable targets to maximise the potential and benefit of our assets while building a sustainable, well-maintained, and resourced operating environment. They should also provide a conceptual bridge between the engineering and operational challenges of maintaining and improving our asset base while meeting our regulatory targets in a manner that maximises efficient use of the company's resources.

Central guiding principles in developing our asset strategies are:

- Our Purpose: delivering quality, reliability and value in our water and wastewater services is the core of our business and must be the driving force behind all our asset management activity.
- Vision 2050: sets our corporate objectives for the next quarter of a century and includes targets for improving our assets to achieve our purpose. Critically, it specifies investment to ensure the quality and efficiency of water supply, improve the robustness of our wastewater collection and treatment systems and enhance our environmental credentials through the reduction of pollutions and carbon footprint maximising green energy production.

In our Asset Strategies, we outline a common set of principles and objectives that enable planners, engineers, and project delivery specialists across the company to work towards realising benefits that are aligned with corporate objectives. These are shown in the figure below.

Figure 4 Strategic Principles and Objectives



Each asset strategy will reference these principles and objectives, to ensure we demonstrate alignment, and will provide a brief example of how they have been applied – for example, prioritising investment on those trunk mains which present the highest safety risk to the public if they were to burst. The relevance of each will vary across different asset strategies (for example, applying Nature Based Solutions to the water network is unlikely to be applicable), but all will be considered, and prioritised, before being discounted if not relevant.

Based upon the principles and objectives outlined, our enduring key strategic priorities are to:

- Improve asset health and invest to acceptable levels (based upon risk appetite)
- Reduce compliance risk

- Secure delivery against priority performance commitments
- Intervene to reduce asset risk where asset resilience has reached a tipping point.

Asset Strategy Common Threads

Common threads, as shown in Table 5 are incorporated into all asset strategies. The list of common threads, and their prioritisation, are kept under review and updated as asset condition and performance, and operational resilience change over time.

Table 5 - Asset Strategies - common threads

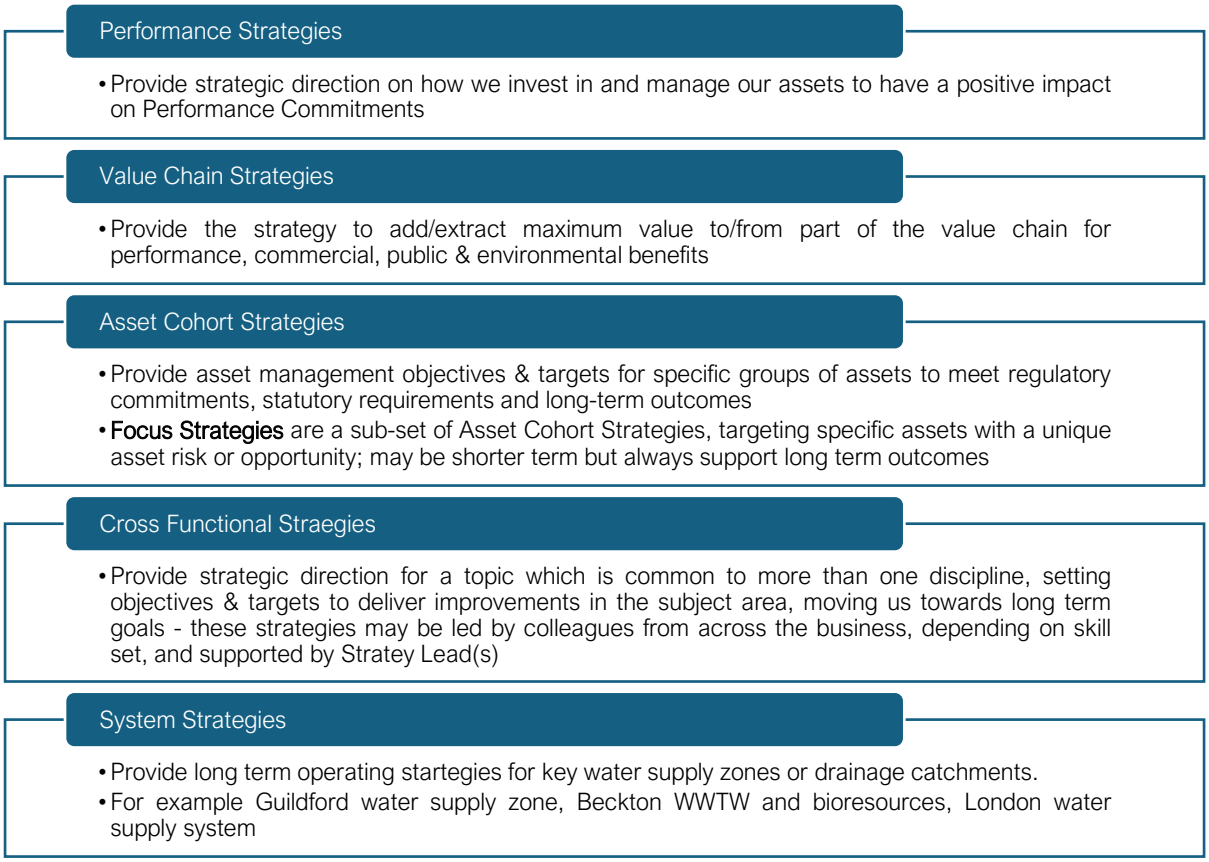
Common Thread
Enhancing Data & Insight – insight-led decision making Utilising enhanced monitoring of asset condition and performance, to create useful insight* for best value asset health and resilience investment decisions (short and long term) ** Through integrated modelling, data insight tools and other digital systems*
Move to more Automation – real-time monitoring & control Building in a greater degree of automation of our assets (where required), complementing a **Calm Systems** approach (linked to data and insight)
Adding and Extracting Value Investing in the health of our assets to maximise performance, flexibility and efficiency, and realising full and breadth of value of our operational assets and sites
Embracing & Deploying Innovation Lever technology, innovation, and new ways of working to be more efficient and effective; developing, installing, and integrating with traditional approaches
Using Risk (and Opportunity) Based Decision Making Base strategy and investment decisions on risk-based and opportunity-exploiting approaches, adapting and balancing against the Cost-Risk-Performance triangle of asset management
Building Asset Health and Resilience Considering investments in asset health and resilience in parallel, using asset health indices and system/site resilience assessments, delivering for now and the future
Balancing Asset Investment with System and Value Chain Thinking Investment at the asset and site level should be considered against needs and solutions at the system level and across the value chain
Supporting Carbon & Energy / Net Zero Objectives All strategy and investment decision should be cognisant and supportive of short-, medium- and long-term goals & objectives for carbon reduction and energy efficiency
Always consider the impact of asset strategy on the resource (people) & skill-set requirements

Asset Strategies

Our asset strategies provide long-term (25 year) direction to asset planners and investment decision-makers and support the achievement of our higher-level outcomes. They set context and define a problem (or value) statement, before providing an overarching strategy and a more detailed strategic roadmap to achieve the required outcomes. They are deliberately unconstrained and challenging but indicate how they are adaptable where uncertainty exists. It is acknowledged that the next stages of the process (the production of strategic plans and programmes, etc) will inevitably involve plotting the most efficient course of action given the available investment capital we have at our disposal.

There are different types of asset strategy: these are described below in Figure 3.

Figure 5 - Types of Asset Strategy



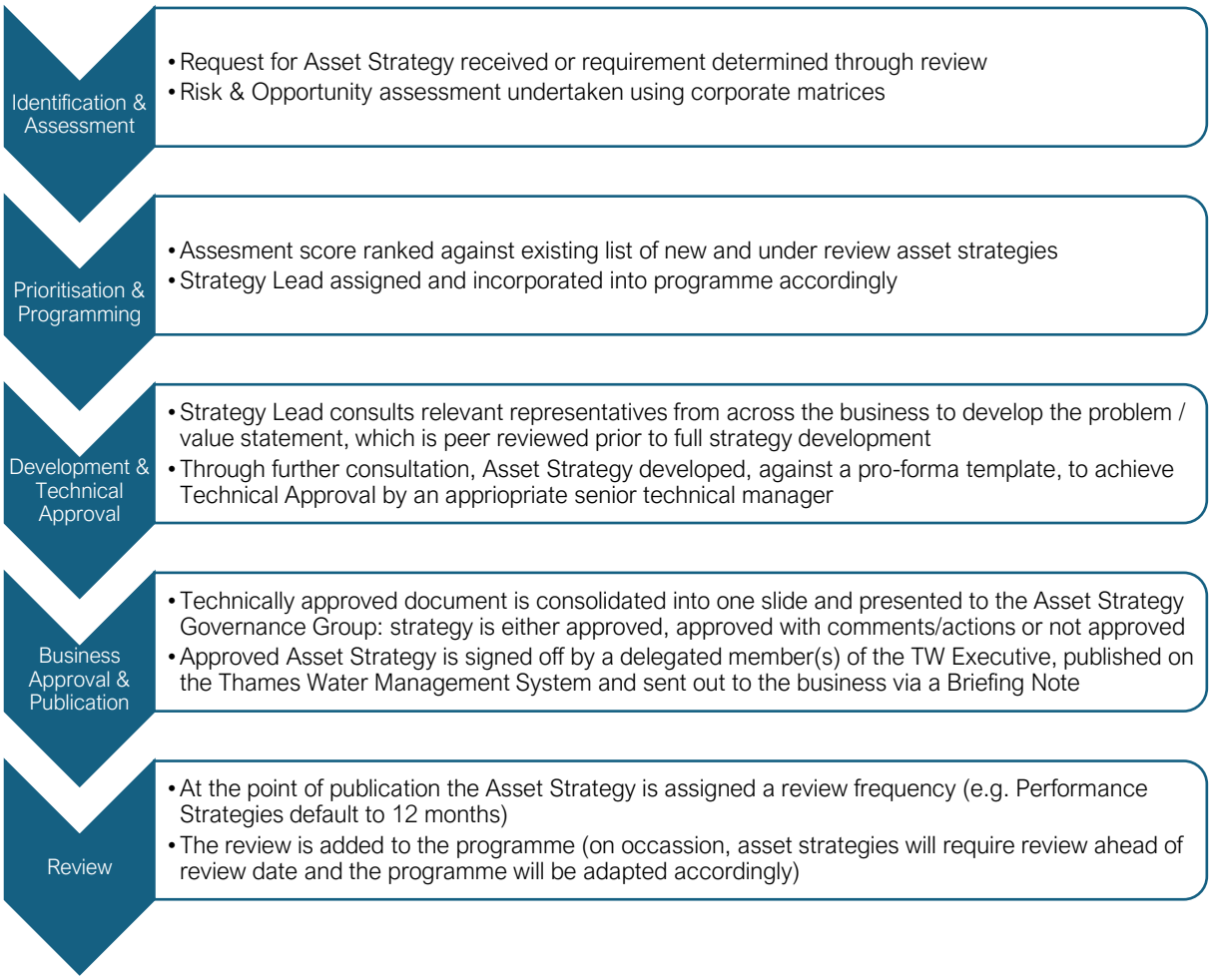
Asset Strategy Development and Lifecycle

We follow a staged process for strategy and development approval which is shown in Figure 4. This process is fully assured through appropriate governance. At any point in the lifecycle, a strategy can be reviewed, expedited for sign off or archived - for example, Performance Strategies are particularly important during Price Reviews and Asset Cohort or Focus Strategies can be prioritised due to a specific business need.

Good governance processes add value and are essential for effective oversight. Our governance processes ensure that:

- Challenge and systematic review through engagement at various levels enables continuous improvement of our strategies so that they remain used, useful, and up to date
- Our strategies are effectively sponsored and communicated (e.g., to teams developing strategic plans, or standards teams) to enable them to become embedded within the business
- Key principles are applied consistently, and they always remain aligned to outcomes
- Leadership teams are in support of the direction of our strategies

Figure 6 - Developing Asset Strategy Documents



During development, Asset Strategies are stored on our Asset Management Strategies SharePoint. When they have received full sign off, they are uploaded to the Strategy Hub on the Asset Management System SharePoint page and published to the business from there by a site administrator – this is important for consistency.

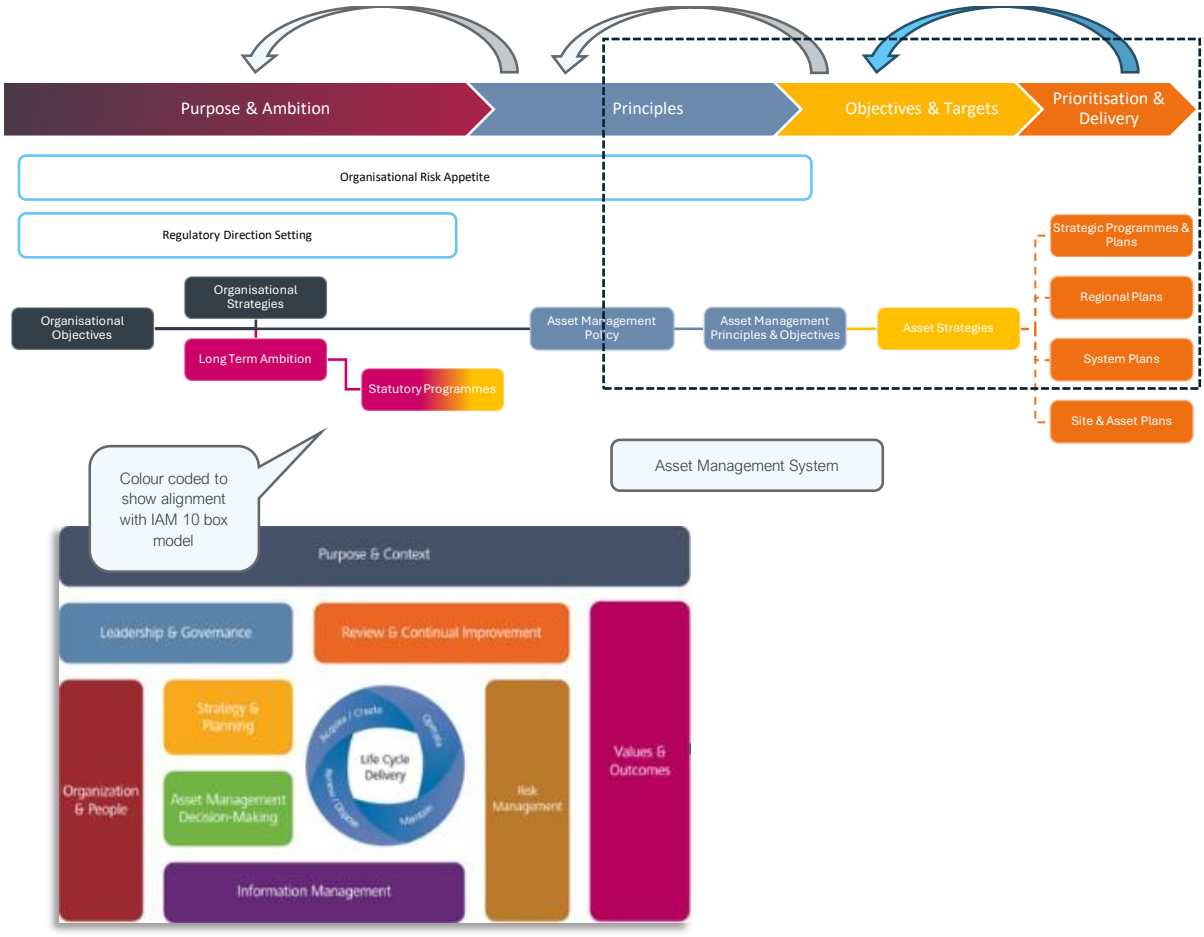
Further communication and engagement of signed off strategies is undertaken by our Strategy Leads to ensure that it is consistently used to develop asset plans, through to delivery.

Asset Strategies, Asset Plans and the Asset Health Improvement Gated Allowance

Delivering the objectives and targets set out in our asset strategies, and realising our long-term ambitions, is achieved through a variety of plans and delivery programmes. These are orientated around different outputs, timeframes, and asset levels. Our asset strategies are written against a standardised template - the strategic planning section suggests planning "themes" with a high-level roadmap. Asset Planning teams can use this section as a tool to turn the strategic objectives into short-, medium- and long-term areas of focus. The dotted lines in Figure [x] below indicate that the flow of "action" from strategies into plans and programmes is not uniform; it can follow different paths, and how this works for each asset strategy will be discussed between strategy and planning leads.

The interventions that will be delivered by the gated allowance are required to be in specific locations that are confirmed at Gate 2. As the interventions will be location specific, they will easily slot into one or more of the key types of plan (Strategic Programmes & Plans, Regional Plans, System Plans, Site & Asset Plans) that are shown on the right hand side in Figure 5.

Figure 7 - Asset Strategy Framework and Line of Sight to Asset Plans



Appendix B – Risk Appetite Statements

The table below sets out the risk appetite statements for the eight principal risks that are most relevant to this asset health improvement gated allowance.

Appendix C - Review of capital maintenance expenditure

We have analysed the annual capital maintenance spend the asset groups against the historical totals reported annually. For wastewater, the asset groups are analysed against Sewage Collection and Sewage Treatment. For water, the asset groups are analysed against Water Resources, Raw Water Distribution, Water Treatment and Treated Water Distribution.

Table 7 shows the results for wastewater and Table 8 shows the results for water.

Table 6 - Historical Wastewater capital maintenance expenditure (2016-17 to 2023/24)

All costs in £m, 2022/23 prices	Annual average spend		AMP equivalent
Asset Group	**Sewage Collection**	**Sewage Treatment**	**Total - Annual average x 5**
Sewage pumping stations	30.0	3.1	166
Sewage treatment works	0.1	105.3	527
Gravity sewers – serviceability and performance	87.1	0.1	436
Gravity sewers – sewers in the rail environment	9.8	0.0	49
Gravity sewers – Northern Outfall Sewer	5.8	0.0	29
Gravity sewers – other safety critical assets	0.3	0.3	3
Rising mains	8.0	0.0	40
Operational technology / ICA	0.5	0.7	7
Developer Services	4.2	0.0	21
Group Services / IT	24.8	27.3	261
TOTAL	**170.7**	**137.1**	**1539**

Table 7 - Historical Water capital maintenance expenditure (2016-17 to 2023/24)

All costs in £m, 2022/23 prices	Annual average spend			AMP equivalent
Asset Group	**Water resources & raw water**	**Water treatment**	**Treated water distribution**	**Total - Annual average x 5**
Raw water abstraction, aqueducts and tunnels	24.3	0.1	0.2	123
Network pumping stations	0.0	0.1	15.3	77
Water service reservoirs & towers	0.7	0.0	8.5	46
Water treatment works	0.0	83.5	1.6	425
Trunk mains	0.3	0.0	69.5	349
Distribution mains	0.1	0.2	176.4	884
TWRM tunnels	0.8	0.0	1.2	10
Customer meters	0.0	0.0	7.1	36
Operational technology / ICA	0.0	4.1	0.7	24
Developer Services	0.0	0.0	7.0	35
Group Services / IT	1.5	6.5	8.2	81
TOTAL	**27.9**	**94.4**	**295.8**	**2090**