Annexure 5 – Infrastructure Capital Expenditure

QCA Price Monitoring Investigation – Part 2 Submission

Public Release

This Annexure is a key component, and forms part of, the overall Urban Utilities' Part 2 Submission to the Queensland Competition Authority's (QCA) price monitoring investigation for the period 1 July 2026 to 30 June 2030. The Urban Utilities' Part 2 Submission should be read as a whole and, because of the interrelated nature of the subject matter, no part should be read in isolation or taken out of context.

The Executive Narrative provides a summary of the entire Urban Utilities' Part 2 Submission, and this Annexure should be read in conjunction with that narrative.

Amongst other items, the Executive Narrative outlines how this technical Annexure, along with the other Annexures provided with the Part 2 Submission, specifically addresses different elements of the Part 2 Stated Matters of the QCA investigation covering the period FY28–30 (1 July 2027 to 30 June 2030).

Contents

1 Executive Summary

1.1 A network built over generations, facing the challenges of tomorrow

Urban Utilities' water and wastewater networks are the product of more than a century of progressive development across South East Queensland. Infrastructure was constructed incrementally to service the needs of successive generations of customers, expanding from established urban centres into new suburbs, industrial areas and regional communities as population growth and economic development occurred.

While this approach successfully enabled the growth and prosperity of South East Queensland, it was not undertaken as part of a single integrated network design. Instead, the current system reflects the cumulative outcome of infrastructure decisions made over more than 100 years under different planning frameworks, engineering standards, technologies, environmental expectations and growth assumptions. The result is a vast and highly interconnected network that has served the region exceptionally well but was never originally designed to support the scale, density and complexity of one of Australia's fastest growing metropolitan regions.

This legacy now creates a complex planning and investment context for Urban Utilities and the communities it serves. More than a century of progressive expansion has resulted in a highly interconnected network with critical bottlenecks, constrained asset corridors and, in some locations, infrastructure that represents significant single points of failure. Many of these assets perform essential system wide function, meaning that deterioration, capacity constraints or failure can have consequences extending well beyond the individual asset, including widespread service disruption, environmental harm, regulatory non-compliance and substantial community impacts.

The challenge is most acute within the wastewater network, where major trunk sewers, pump stations and treatment facilities constructed many decades ago remain critical components of a system now carrying many times the load originally envisaged. As demand continues to increase, operational flexibility and available contingency reduce, leaving less capacity within the system to accommodate outages, emergencies, maintenance activities or extreme weather events.

Many of these constraints are embedded within the physical structure of the network and cannot be addressed through routine asset replacement alone. Significant portions of the network were developed around infrastructure that was optimally located for the communities of the time but now sit at the centre of densely developed urban environments. Critical assets that were originally constructed in open land are today located beneath major roads, rail corridors, waterways, commercial precincts and established residential communities. As a consequence, renewing, duplicating or augmenting these assets has become substantially more complex, disruptive and expensive. Modern renewal and augmentation programs increasingly require complex tunnelling, trenchless construction methods, environmental management, traffic management, stakeholder engagement, property acquisition and extensive service continuity measures, all of which add significant cost but are necessary to maintain essential services during construction.

The challenge extends beyond the network itself. Several treatment facilities serving growing regional communities were originally established to support much smaller populations using treatment processes, layouts and operating assumptions developed many decades ago. While these facilities have been maintained and upgraded over time, continued population growth, increasingly stringent environmental standards, changing community expectations and climate impacts are placing growing pressure on assets that were not designed for today's operating environment. Many treatment plants are approaching hydraulic, process or environmental limits concurrently, requiring significant investment to maintain compliance, support growth and protect environmental outcomes.

Capacity limitations, aging treatment infrastructure, constrained conveyance corridors and critical network dependencies increase the risk of service disruptions, environmental incidents and delays to new development. In many cases, the window available to respond is narrowing as growth consumes the remaining operational headroom within the system. The investment required is the inevitable consequence of operating, renewing and expanding a network built progressively over more than a century to serve a region whose population, economy and service expectations continue to grow.

The legacy of more than a century of infrastructure development has created a network that remains fundamental to the health, prosperity and liveability of South East Queensland. However, it has also created an increasing concentration of critical risks and constraints that cannot be deferred indefinitely. Sustained investment in renewal, resilience and augmentation is essential not only to maintain existing services, but to ensure the region's future growth is not constrained by infrastructure originally designed for a different era.

1.2 Why the FY28 to FY30 capital program is required

Urban Utilities continues to deliver safe, reliable and affordable services for the communities we serve. For much of our first 15 years, disciplined asset management, operational improvements, efficiencies from consolidating five council businesses and available network capacity allowed us to accommodate strong growth and extend the service life of assets. Favourable financing conditions also helped contain customer costs. At the same time, customer adoption of more water-efficient appliances and practices reduced per-customer demand, further delaying the need for major infrastructure investment.

Those conditions no longer apply across significant parts of the. system. Rapid population growth is consuming available network and treatment capacity, reducing the headroom available to service further growth and respond to asset outages and unforeseen events. At the same time, a growing proportion of the asset base is reaching the later stages of its service life, increasing the risk of deterioration and failure and driving greater renewal demand across both dense urban areas and difficult-to-service locations. This is occurring alongside rising environmental, security, resilience and regulatory expectations, while infrastructure is becoming increasingly complex and more costly to deliver, operate and maintain.

These changing conditions are reflected in three interconnected challenges: providing additional capacity to support growth, renewing an ageing asset base requiring targeted risk renewal, and responding to an increasingly demanding environmental and regulatory landscape.

Lead indicators confirm the need to act now

Growth: sustained and concentrated where capacity is more costly to provide	Renewals: risk-targeted, not age-driven	Increasing environmental, regulatory and security requirements

Growth is placing greater pressure on existing treatment and network infrastructure. Some assets are operating at higher loads and closer to, and in many cases, exceeding their design capacity and operating limits, requiring more active management to maintain service and compliance outcomes. In a number of critical areas, assets are also deteriorating faster than they can be renewed or replaced. This includes assets with limited redundancy or that represent significant single points of failure, where continued deterioration is reducing operational resilience and increasing the consequences of failure. For some critical assets, failure could result in widespread service disruption and significant operational, environmental and community impacts.

Operating constraints are already emerging in parts of the system. As these constraints tighten, the risk of critical service disruption, non compliance and delays in connecting and servicing new customers increases.

We remain committed to improving efficiency and delivering value to customers. We continue to pursue further efficiencies through improved planning, delivery and operation. However, the organisational consolidation benefits and system headroom that previously helped defer expenditure are no longer available on the same scale. We are at a position that is like a fork in the road. Future improvements increasingly depend on targeted investment in technology, operating capability, asset resilience and modern infrastructure.

Without timely and targeted investment, existing pressures would intensify. Capacity constraints would become more acute, critical asset risks would remain unaddressed, and renewal requirements would continue to grow faster than they could be addressed. This would create a cycle of increasing risk, raising the likelihood of significant service disruptions, asset failures and regulatory non-compliance, reducing our ability to respond to incidents and outages, and constraining our capacity to service growth. Whole-of-life asset costs would be significantly higher as expenditure increasingly shifted towards reactive maintenance and emergency interventions. Deferring investment would also allow renewal needs and associated risks to accumulate, increasing both the scale and cost of future works and transferring greater cost and service risk to future customers.

The FY28 to FY30 program is the first three-year tranche of the sustained increase in investment identified through our long-term planning. It forms the near-term component of a risk-based ten-year portfolio developed from our integrated plans, tested against affordability and service risk, and supported by an established delivery framework. It is directed to the work now required to address emerging capacity constraints, meet compliance obligations and manage the most significant asset risks to achieve lower costs across the longer term.

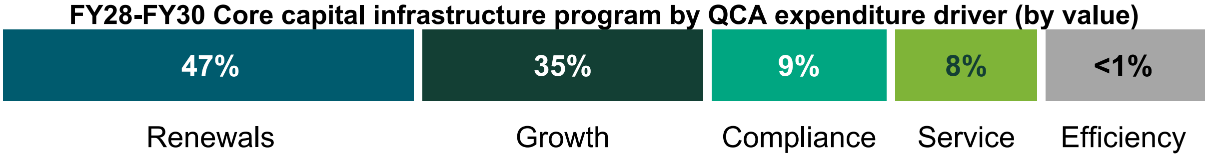
1.3 The capital program at a glance

Total capital expenditure across FY28 to FY30 is forecast at approximately $2.275 billion in real FY27 terms. Of this, this capital annexure addresses $1.751 billion of core infrastructure, $50 million of Property, Plant and Equipment and $291 million of separately identified Brisbane 2032 Olympic and Paralympic Games (the Games) critical infrastructure. Digital and Information capital investment is presented for completeness however is addressed in Annexure 6 – Digital and Information Investment.

Capital Category	FY28	FY29	FY30	Total
Infrastructure	535	604	612	1,751
Digital and Information	69	57	57	183
Property, Plant and Equipment	19	16	15	50
Games readiness infrastructure	78	154	59	291
TOTAL	**701**	**831**	**743**	**2,275**

Values in $ million, real FY27. Totals may not add due to rounding. Forecast values reflect the capital efficiency target. Digital and Information investment is addressed in Annexure 6.

FY28-FY30 Core capital infrastructure program by QCA expenditure driver (by value)



Renewals remain the largest component, while growth is the principal source of the increase above recent delivery levels.

1.4 Growth: sustained and concentrated where capacity is more costly to provide

Residential connections increased by around 27% between FY13 and FY25, equivalent to annual growth of about 2%. Growth has proportionately been fastest in Ipswich and the Scenic Rim, while Brisbane has continued to add the largest number of connections.

Figure 1: Growth in residential connections (000's)

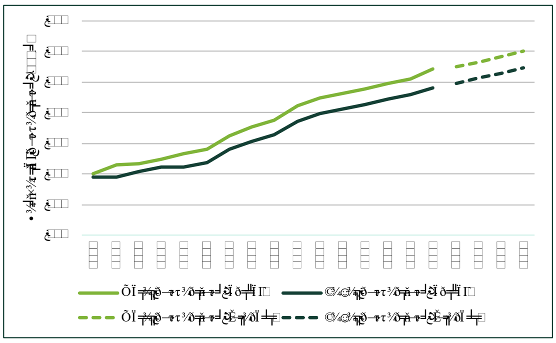
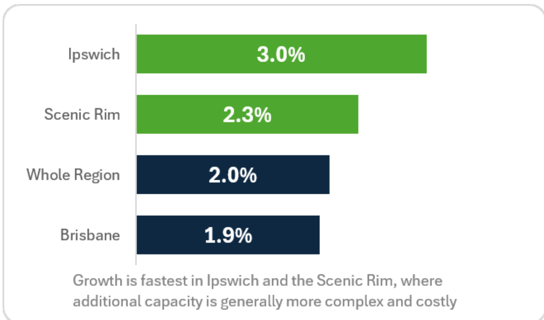


Figure 2: Connection growth by region (FY13-FY25, annual rate)



Population across our service area is forecast to increase by more than 512,700 people over 20 years[1]. Planned growth investment of about $622 million over FY28 to FY30 is broadly comparable with the $630 million invested over the longer FY20 to FY27 period, demonstrating sustained servicing of a growing region rather than a one-off surge.

Growth is creating infrastructure challenges across our service area. In established areas, infill and higher density development require additional capacity to be integrated into existing networks, while expansionary growth in western and regional areas, limited economies of scale further increase the cost of providing that capacity. Major treatment, trunk and conveyance assets must also be delivered in large increments and require long lead times.

1.5 Renewals: risk-targeted, not age-driven

Our network has developed over more than 130 years and comprises approximately 9,800 kilometres of water mains and 10,100 kilometres of wastewater mains, ranging from century-old infrastructure to modern assets. A growing proportion of the network is entering the later stages of its service life, but we do not replace assets simply because they reach a nominal age. An age-based profile was assessed and not preferred because it would bring expenditure forward without a commensurate reduction in service risk.

Renewal priorities are instead informed by condition, performance, failure history, criticality, consequence of failure and whole-of-life cost. Around 600 kilometres of linear assets are nearing the end of their expected service lives within the current planning horizon, ahead of a larger wave from FY50. Our approach recognises that lower-risk assets can remain in service where monitoring, maintenance or responsive repair is the prudent lower-cost response, while investment is directed first to extreme and high risks.

1.6 Increasing environmental, regulatory and security requirements

Growth and renewal pressures are compounded by increasing environmental, regulatory and security requirements. These pressures are particularly pronounced in Somerset, Lockyer Valley and Scenic Rim, where receiving environments have limited capacity, reuse opportunities are constrained and forecast growth is expected to bring some facilities within higher environmental licensing thresholds. Tighter discharge and monitoring requirements are therefore bringing some upgrades forward. We are also strengthening our cyber, physical, personnel and supply-chain security controls to meet our increasing obligations under the *Security of Critical Infrastructure Act 2018* (*Cth*). Our limited access to external disaster recovery and resilience funding further reduces the extent to which climate-related investment costs can be offset through sources other than customer prices.

1.7 Forward-looking evidence confirm the need to act now

Current service performance measures remain strong, but they principally describe past performance. They do not fully capture the system's reducing ability to absorb continued growth, deteriorating asset condition, tighter compliance margins or a major asset outage. Forward-looking measures show these pressures converging. Available treatment and network capacity is being consumed, compliance margins are narrowing and renewal needs are increasing. Responding to these signals before constraints become critical reduces the likelihood of service failure, environmental challenges and costly unplanned intervention.

---

[1] Queensland Government Statisticians Office, 2025 population projections, medium series 2026-2046 indicate a total increase in population of 512,744 persons across the Brisbane, Ipswich, Lockyer Valley, Somerset and Scenic Rim LGAs over the 20-year period.

1.8 The program has been tested against affordability and risk

The planned level of investment reflects the near-term work required to service growth, meet regulatory requirements, and manage the most significant risks to existing services. It aligns capacity investment to demonstrated growth and forecast constraints, addresses current and emerging compliance and regulatory requirements, and directs renewal and service investment to extreme and high risks. It does not fund every identified need.

The program was developed through a multi-layered governance framework that considered enterprise-wide capital trade-offs and was ultimately constrained within a Board-approved affordability envelope. The resulting portfolio reflects a disciplined assessment of service risk, regulatory requirements and customer impacts. Growth and compliance investments have been prioritised because they are required to meet service demands and regulatory requirements. Beyond these obligations, investment has been targeted toward assets and services exposed to the most significant consequences of failure. The approach is described in Figure 3 and further detailed in Part 3.

HOW WE DECIDE WHAT TO FUND WITHIN THE AFFORDABLE ENVELOPE

THE SAME COST-RISK-PERFORMANCE LOGIC IS APPLIED AT THE PORTFOLIO LEVEL AND WITHIN EACH INTEGRATED PLAN

Inputs that set the target and the envelope

Strategic alignment
Screens what projects and programs enter the process

Level of service
The benchmark risk is measured against

Customer and community
Value and affordability

Identified investment need exceeds the affordable, Board-approved envelope
A structured trade-off is required — what proceeds now, what is deferred, and what risk is accepted

Every intervention is categorised across multiple lenses
- Investment driver (growth · compliance · renewal · efficiency · service)
- Level of Service and Service-risk severity (Extreme / High ≥21 / Medium / Low)
- Critical outcome (safety · public health · environment · experience · value)
- Maturity and deliverability

A consistent decision framework
what is obligation-driven, what enables, and what is optimised

1. PRIORITISED FIRST

Compliance and Growth
Regulatory Requirements driven: legal, licence and servicing needs. The need is non-discretionary, but scope, timing, standard and pathway are still tested for prudency and efficiency

2. THE ENABLER

Efficiency (incl. D&I)
Not automatically prior to other spend. Funded on value for money where it lowers whole-of-life cost, sharpens the targeting of renewals or improves deliverability of the broader program

3. PRIMARY OPTIMISATION LEVER

Renewals and Service — by risk
Strongest priority where condition, performance, consequence and likelihood indicate Extreme or High risk (≥21). Lower risk deferred or resequenced within appetite; revisited at asset-class level

Bracket the cost–risk trade-off with three scenarios

Scenario 1, All Investment
- Highest cost
- Beyond appetite/value

Scenario 2, Balanced (preferred)
- Most affordable that resolves Extreme and High risk

Scenario 3, Minimise Renewal
- Cheapest now
- Risk beyond appetite

Selected through governance: IC → SAMC → AFRC → Board
Board adopted Scenario 2, Balanced Investment on 26 May 2025

Constraint cascades to integrated planning — ICP · IZP · SACP
Each plan develops its recommendation within the Scenario 2 envelope, using a Do-Nothing / Optimised / Full-scope test that mirrors the scenarios

Prioritisation does not stop at planning
Each intervention progresses through the Capital Gateway Process and the Capital Project Challenge Process — scope, cost, timing and benefits are retested as information improves and the project moves through the gate stages

Figure 3 Capital prioritisation process

The ten-year portfolio was tested through three scenarios designed to make the trade-off between customer affordability, service outcomes and risk exposure explicit.

Scenario	Treatment of investment	Assessment
1. All Investment	Funds investment addressing a broader range of identified risks, including medium and lower-rated risks.	Not selected: highest bill impact without a commensurate reduction in critical service risk.
2. Balanced Investment	Prioritises growth and compliance, addresses only extreme and high risks, and defers or re-sequences lower-priority work.	**Selected: Despite the substantial increase in business risk, it represents the most affordable pathway that addresses extreme and high risks consistent within the Board approved risk appetite.**
3. Minimise Renewal	Protects immediate growth and compliance obligations but defers a greater proportion of renewal investment, leaving a higher residual asset and reliability risk.	Not selected: would leave critical asset and service risks outside the Board approved risk appetite and could increase future renewal requirements, whole of life costs and service risks for future customers.

Customer bill impacts were modelled for each scenario. Scenario 2 was selected because it represents the lowest-cost portfolio that meets forecast growth and compliance requirements while maintaining residual risk within the Board approved risk appetite. Compared with Scenario 1, it defers or re-sequences a range of lower-priority investments while continuing to address risks assessed as extreme or high and prioritising intervention where asset condition, performance or criticality indicates that action is required within the planning horizon.

Scenario 1 was not selected because the additional customer cost was not proportionate to the incremental reduction in service risk and improvement in service outcomes. The preferred portfolio therefore adopts a targeted approach, directing expenditure to forecast growth and compliance requirements and the highest-priority asset and service risks.

Scenario 3 was not selected because it would defer intervention for a greater number of critical assets and **leave residual asset and extreme service risks outside the Board approved risk appetite.** The additional deferral of renewal activity would increase exposure to asset deterioration, declining reliability and the failure of critical infrastructure. These risks would compound over time, creating a cycle in which investment is increasingly directed towards high-cost reactive interventions rather than planned renewals. As asset condition and performance decline, deterioration could outpace our ability to restore network health through normal renewal programs, resulting in a growing backlog of assets in poor condition. This would increase the likelihood of widespread outages, longer service disruptions and reduced network resilience. Scenario 3 was therefore assessed as shifting greater cost and service risk to future customers rather than providing a sustainable reduction in expenditure.

Project-level options assessment and capital challenge provide additional scrutiny of the need, timing, scope, cost and delivery approach for individual investments. These processes have identified lower-cost solutions and supported the deferral, resequencing or removal of investment where updated evidence no longer supports the proposed timing or scope. The planned investment also incorporates a 2% capital efficiency target, applied in addition to project-level assessment and challenge.

1.9 An established delivery platform for the planned increase

Annual capital delivery increased from approximately $225 million in FY11 to $418 million in FY25 and has remained close to $400 million over the past three years. Core infrastructure expenditure is forecast at $535 million, $604 million and $612 million across FY28 to FY30, with more than $300 million of the FY28 program already in development with delivery partners.

The previous Program Management Approach delivered more than $1 billion across approximately 200 projects, reduced pre-market engineering and design costs from 11.5% to 5.2% of capital expenditure, and increased the proportion of projects meeting approved cost, time and benefit outcomes from around 20% to greater than 90%. The successor delivery model, Next Generation 4 Delivery (NG4D) is now operating through an Integrated Services Provider and two Delivery Groups. It provides the delivery and commercial arrangements needed to support the planned program, with performance to be monitored against defined cost, schedule, quality and benefit measures.

1.10 Delivery readiness and execution are supported by active controls

Readiness and delivery risk are managed through:

- **Program maturity:** more than 90% of the following year's planned expenditure is targeted to be beyond Gate 3.
- **Cost and technical assurance:** estimates and contingency mature with project definition, and significant prices are independently reviewed and benchmarked.
- **Market capacity and procurement:** long-term partnerships provide pipeline visibility, while non-exclusive arrangements preserve access to the wider market.
- **Portfolio monitoring and adaptation:** monthly reporting and gateway governance allow scope, timing and priorities to change as conditions evolve.

Delivery efficiency is managed through NG4D targets for standardisation, added value and reduced time on site, with realised benefits tracked separately.

1.11 A prudent, efficient, and deliverable program

The FY28 to FY30 program responds to demonstrated growth, renewal and increased compliance needs. It has been developed from prepared plans, constrained through affordability and scenario testing, and refined through project-level options assessment and capital challenge. The forecast also incorporates a 2% capital efficiency target. Broad deferral would not remove the underlying investment need and may increase whole-of-life cost, residual service and compliance risk, and the likelihood of later delivery within a compressed timeframe. The evidence presented in this annexure supports the conclusion that the proposed expenditure is necessary, prudent, efficiently scoped, deliverable and appropriately timed.

2 Part 1 - Overview

2.1 Introduction

Urban Utilities manages around $7 billion in water and wastewater infrastructure assets serving 1.6 million customers across five local government areas in South East Queensland. Our planned capital program for FY28 to FY30 represents the investment required to continue delivering safe, reliable and affordable services in an environment of sustained population growth, ageing assets, increasing environmental regulation, construction cost escalation and increasingly complex infrastructure delivery conditions.

Our services have been supported by decades of investment in critical infrastructure, with some available system capacity across many parts of the network, and an operating environment that enabled water and wastewater services to be delivered reliably and efficiently. These foundations have supported strong outcomes for customers and communities across South East Queensland, and many aspects of our service performance remain strong today.

The conditions that supported these outcomes are now changing. Population growth is increasing demand on existing systems, a growing proportion of the network is ageing, environmental regulation is becoming more complex and the cost of delivering and maintaining infrastructure has increased. Available network and treatment operating headroom is becoming constrained in key growth areas, particularly in parts of the wastewater system where growth is bringing forward the need for treatment and conveyance capacity. These pressures are occurring at the same time and can compound one another, with growth increasing capacity requirements, ageing assets driving renewal needs, and more complex environmental regulation affecting the scope and timing of investment.

We expect these trends to continue, and in some areas to intensify, over the FY28 to FY30 regulatory period and beyond. Customers expect services that remain safe, reliable and affordable, but maintaining and improving service outcomes in this environment requires a different investment response from previous periods. We need to invest not only to manage risk and renew ageing assets, but also to enable growth, improve resilience, protect environmental outcomes and support the long-term needs of the communities we serve.

The capital program set out in this annexure represents our planned response. It balances affordability with targeted investment that protects the services customers rely on today, improves outcomes where performance can be strengthened, and enables the growth, resilience and environmental outcomes our region will require. The evidence presented in this annexure supports three central conclusions.

The case for our capital program

The evidence presented in this annexure supports three central conclusions

1 Necessary and sustained

The increase in investment responds to identifiable and concurrent service needs, rather than a one-off expenditure peak

Renewals remains the largest component

Growth is the main source of the uplift above recent delivery levels

Compliance, resilience and Olympic readiness add targeted requirements

2 Prudent and efficient

Each investment is linked to a defined service need and tested before funding is committed

Evidence-based planning confirms the need and timing

Prioritisation and challenge test scope, options, risk and affordability

Governance and assurance provide proportionate scrutiny throughout the investment lifecycle

3 Deliverable and adaptable

The program is sequenced and managed to support efficient delivery at a greater and sustained scale

Sequencing considers project maturity, dependencies and capacity

Programmatic delivery supports packaging, standardisation and market engagement

Adaptive review allows scope and timing to respond to updated evidence and changing conditions

Together these conclusions demonstrate that the FY28 to FY30 program represents an appropriately timed and efficiently scoped response to the service, growth, renewal and compliance needs facing our customers and communities.

These three conclusions provide the organising logic for the remainder of this annexure. This Part 2 explains why investment is required, including the pressures arising from asset condition and performance, population growth, increased environmental and other regulatory requirements, climate exposure and changing customer and community needs. Part 3 explains how identified needs are translated into a prioritised program, including the planning, risk assessment, affordability, customer engagement, capital challenge, governance and assurance processes applied to investment decisions. Part 4 presents the resulting capital program and explains how it will be procured, packaged, sequenced and delivered efficiently.

Our planning architecture connects long-term asset strategy to near-term delivery. Investment is prioritised by reference to service risk, regulatory requirements, customer outcomes and affordability, and individual investments are progressively tested as they move from long-term planning through options development, project approval, delivery and benefits realisation.

The infrastructure program comprises renewals, growth, compliance, service improvement and efficiency investment, consistent with the QCA's expenditure driver categories. Digital and Information capital expenditure is included in the overall capital program for transparency but is described and justified separately in Annexure 6 - Digital and Information Investment.

2.2 Total capital program for FY28 to FY30

Total capital expenditure over the FY28-FY30 regulatory period is planned at around $2.3 billion in real FY27 terms (Table 1). This includes core infrastructure investment, digital and information, property, plant and equipment and Games-related infrastructure investment.

The Digital & Information capital program is included in Table 1 for completeness but is described and justified separately in the Digital & Information annexure (Annexure 6). This annexure focuses on the non-Digital & Information components of the capital program, with particular emphasis on the infrastructure investment required to support growth, renewal, compliance, service performance and Games readiness.

Table 1 Forecast capital expenditure by category, FY28 to FY30, $m real FY27

Capital Category	FY28	FY29	FY30	Total FY28 to FY30
Infrastructure	535	604	612	1,751
Digital and Information	69	57	57	183
Property, Plant and Equipment	19	16	15	50
Games readiness infrastructure	78	154	59	291
TOTAL	**701**	**831**	**743**	**2,275**

Note: Totals may not add due to rounding. Values consider the impact of the efficiency target. Digital & Information capital expenditure is included in this table for transparency but is addressed in a separate annexure (see Annexure 6 for details)

2.3 A sustained increase, not a one-off peak

The FY28 to FY30 capital program represents the first delivery tranche of a sustained period of higher infrastructure investment. Our long-term asset and servicing plans indicate that annual investment will remain elevated beyond FY30 as further assets reach capacity or their risk-based intervention points, committed growth is progressively serviced, and environmental regulation and service obligations require additional infrastructure capability.

This forward requirement has been identified through our integrated planning, asset class planning and long-term capital forecasting processes. It reflects the timing of demonstrated need across the system and provides a clear line of site to the investment and delivery task ahead.

Renewals remains the largest component of infrastructure capital expenditure across FY28 to FY30, accounting for around 47% of the program. This reflects the continuing investment required to maintain the reliability, compliance, integrity and performance of the exiting asset base. Growth accounts for approximately 35% but is the largest contributor to the increase above recent annual delivery levels. This increase is concentrated in major wastewater treatment and conveyance investment across the Ipswich, Beaudesert (Scenic Rim), Goodna and Lockyer Valley corridors. Compliance, efficiency and service improvement investment make up the balance.

Core infrastructure capital expenditure is forecast to increase from recent annual delivery of around $380 million to $420 million per year to approximately $535 million in FY28, $604 million in FY29 and $612 million in FY30. Figure 4 shows the historical and forecast expenditure profile and the changing contribution of renewals, growth, compliance, service improvement and efficiency investment over the period.

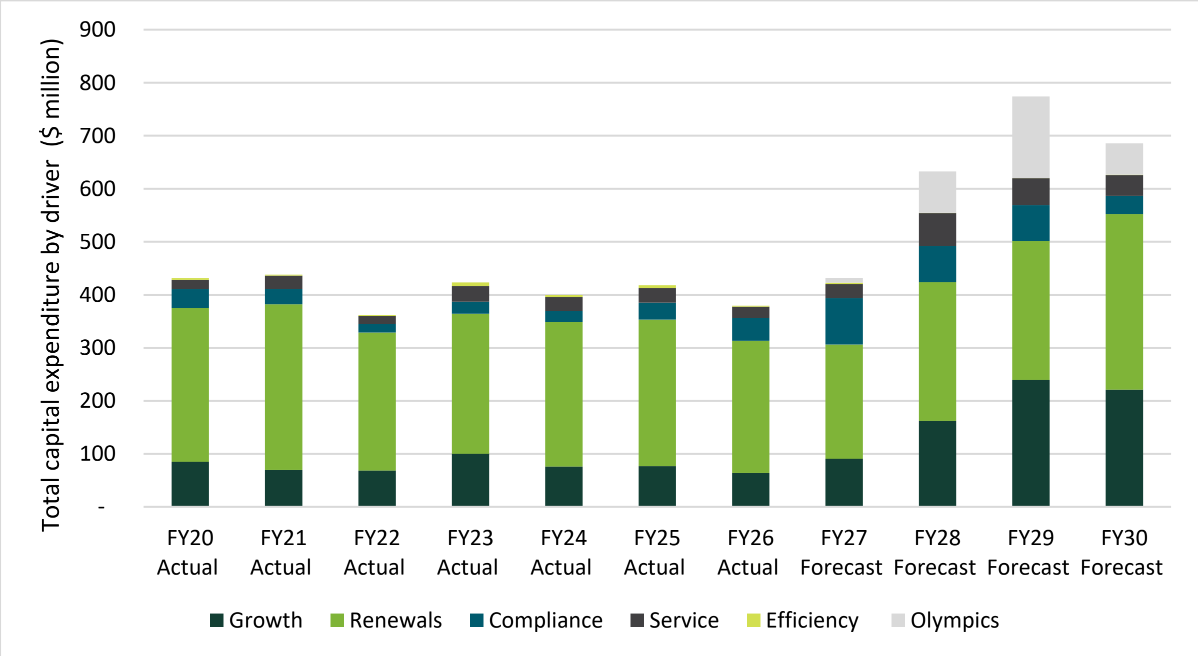


Figure 4 Historical and forecast capital expenditure by driver FY20 to FY30

The product split confirms that the uplift spans the entire service delivery value chain rather than a single asset class or investment type. Wastewater transportation investment supports the renewal, capacity and resilience of sewerage networks, pump stations and conveyance assets. Wastewater treatment investment supports treatment capacity, environmental compliance and resource recovery. Water distribution investment supports network reliability, growth servicing and water quality. Property, plant and equipment investment supports the enabling assets such as fleet, facilities and operational technology, required to operate and maintain the network.

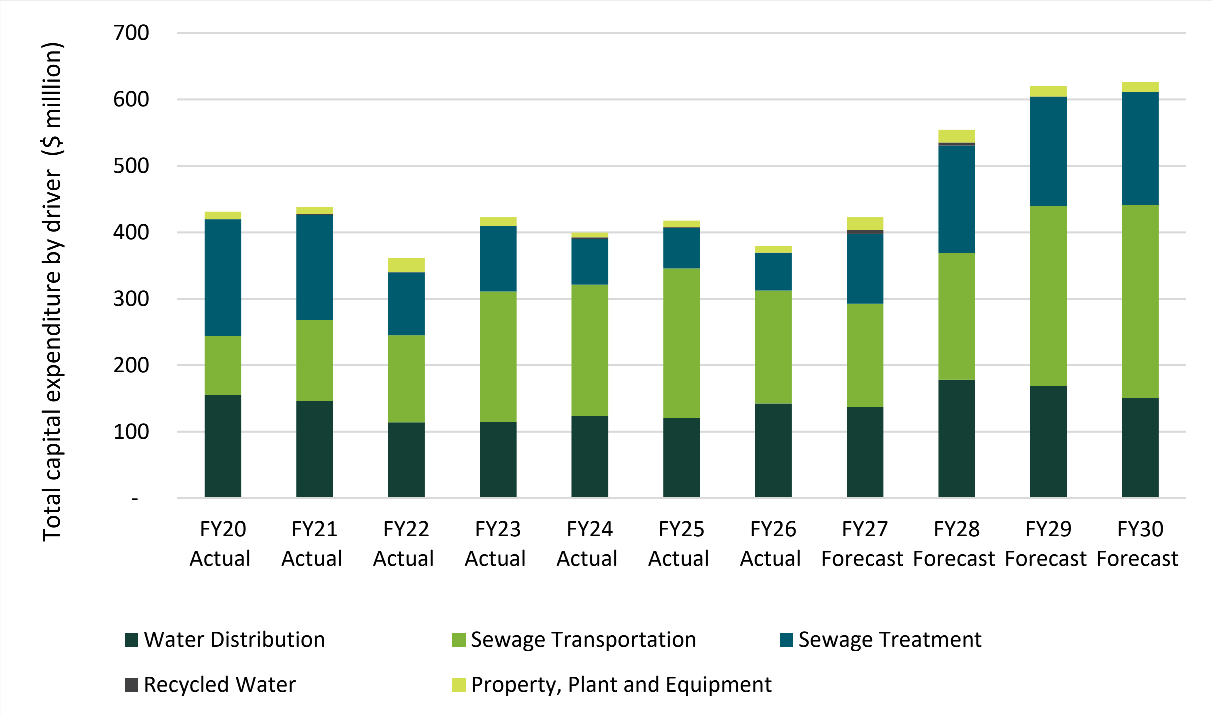


Figure 5 Historical and forecast capital expenditure by product FY20 to FY30 (real FY27)

Games-related infrastructure adds a separate and time-critical delivery stream during the FY28 to FY30 period. Including separately tracked Games-related infrastructure, infrastructure delivery requirements increase further to approximately $613 million in FY28, $758 million in FY29 and $671 million in FY30.

Games-related infrastructure is separately identified in the capital program because it has distinct timing, coordination and external interface requirements associated with the Brisbane 2032 Olympic and Paralympic Games. The underlying uplift in the core infrastructure program reflects renewal, growth, increased compliance and service requirements, while Games-related investment adds to the scale and complexity of the delivery task during the period. It must therefore be planned and delivered alongside the broader infrastructure program.

The funding arrangements for Games-related investment, including the extent of any government contribution and the way in which costs will ultimately be allocated, remain subject to ongoing engagement with government.

The FY28 to FY30 uplift marks the leading edge of an investment requirement extending beyond the current regulatory period. As further assets reach capacity or the end of their service lives, and as committed growth is progressively serviced, the annual capital task is expected to remain elevated beyond FY30. The current three-year program therefore needs to be understood within the context of the longer-term investment pathway rather than as an isolated delivery period.

That long-term view has informed how we are preparing to deliver a larger, more complex and more sustained program. Our delivery arrangements have evolved from the Program Management Approach (PMA), which successfully delivered more than $1 billion of infrastructure across more than 200 projects, to the Next Generation 4 Delivery (NG4D) framework.

NG4D builds on the strengths and lessons of PMA. It is designed to support earlier planning and partner involvement, improved packaging of repeatable works, greater innovation and standardisation, better sequencing across catchments and asset classes, and stronger alignment between the investment pipeline and available market and internal delivery capacity.

These arrangements allow us to move from a project-by-project response to a more efficient portfolio delivery approach. This supports earlier investigation, design readiness, procurement planning, approvals management and supply-chain coordination. It also allows related investments to be packaged and sequenced more effectively and enables projects to progressed efficiently when demonstrated growth, renewal or compliance triggers are reached.

This readiness is particularly important for major wastewater treatment and conveyance investments. These projects typically have long planning, design, approval and construction lead times. As available treatment and network headroom is consumed, the period within which investment can be safely adjusted or deferred becomes progressively narrower. Early preparation allows the scope, timing, delivery pathway and market approach to be developed before the relevant service or compliance threshold is reached.

The underlying need remains where required investment is deferred. Delay shifts the delivery task to later periods and can increase whole of life costs, service and compliance risks, delivery complexity and the burden placed on future customers. It can also compress the available delivery window, reducing flexibility in procurement, staging and market engagement.

The timing of the capital program therefore balances near-term affordability with long-term customer value. We time investment to demonstrated need, using evidence from asset condition and performance, system modelling, observed demand, development activity, regulatory obligations and defined service and capacity triggers.

Where investment can be prudently staged, deferred or delivered through a lower-cost pathway while maintaining acceptable service, compliance and environmental outcomes, those options are adopted. Where delay would increase risk, reduce delivery flexibility or result in higher long-term costs, investment is progressed when required to meet growth, asset renewal or regulatory obligations.

These decisions are tested through the risk-based prioritisation, staging, adaptive planning and capital challenge processes described further in this annexure. Together, these processes ensure that the sustained increase in expenditure is translated into a program that is appropriately timed, efficiently delivered and balanced against affordability for current and future customers.

2.4 Growth-driven uplift within a renewals-led program

Our FY28 to FY30 capital program reflects a material increase in investment compared with recent historical levels. Renewals remains the largest component of our FY28 to FY30 capital program and is essential to maintaining the reliability and integrity of the existing asset base. Within that overall program, growth is the principal source of the increase above recent annual expenditure levels, particularly through the need to expand wastewater treatment and conveyance capacity in areas where demand is increasing and existing infrastructure headroom is reducing.

Our 10-year planning shows that 11 of our 26 wastewater treatment plants are already, or are forecast to become, capacity constrained within the planning horizon. This means almost half of our treatment plant portfolio will require capacity intervention within the next decade. Collectively, these constraints require more than 250,000 equivalent persons of additional treatment capacity, a scale of expansion equivalent to servicing a new city. A number of these capacity triggers are emerging concurrently across multiple catchments, creating a sustained investment task that cannot be addressed through incremental annual upgrades and representing a major contributor to the step-up in annual capital expenditure. The need for this investment is non-discretionary. It is required to accommodate growth under ShapingSEQ 2023, maintain compliance with ERA 63 environmental licence thresholds under the *Environmental Protection Act 1994* (Qld), and to continue meeting our statutory service requirements to a rapidly expanding customer base.

Two features distinguish this period. The first is where growth is occurring. Growth is no longer concentrated in established Brisbane catchments. It is accelerating across our western and regional corridors, particularly Ipswich City, Scenic Rim (Beaudesert) and the Lockyer Valley. In these areas, development is occurring beyond the existing infrastructure footprint and is materially more costly to service. The rural and peri-urban centres are further challenged by legacy treatment technology and limited economies of scale. These corridors require new trunk infrastructure and treatment capacity rather than incremental augmentation of established systems.

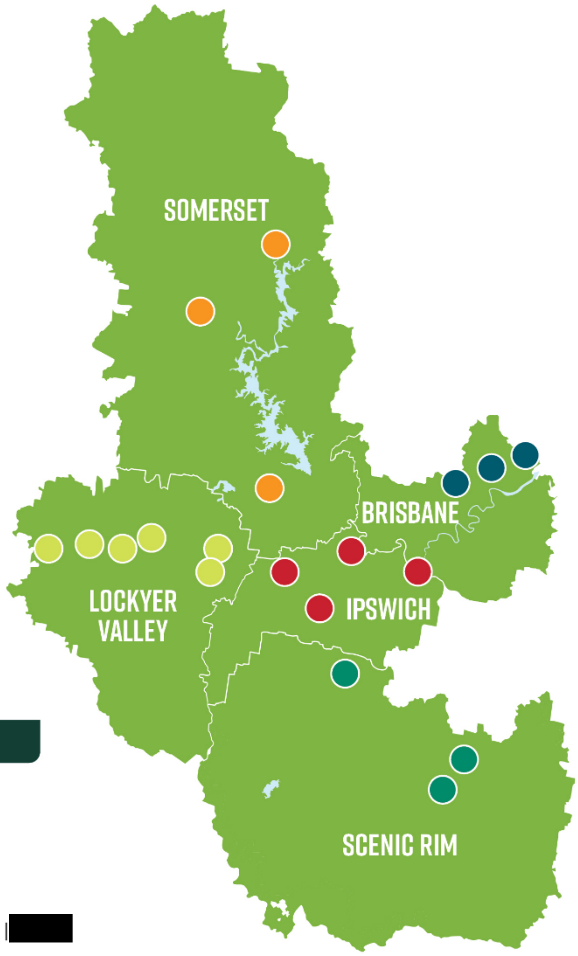
The second is the timing and scale of the required capacity additions. Wastewater treatment and major conveyance capacity is often delivered in large, stepwise increments because it cannot be efficiently or prudently added in small annual amounts. A number of these major investments are now reaching their required decision and delivery points at the same time across multiple catchments. In several corridors, observed development is also running ahead of the previous planning basis, reducing available headroom and bringing capacity triggers closer together.

This concentration of major, coincident capacity investments is a principal contributor to the FY28 to FY30 uplift, alongside the continuing renewal, compliance and service investment required across the existing asset base. It reflects the timing of capacity constraints across the system, rather than a change in investment discipline. Given the long lead times required to plan, design, approve and deliver major treatment and conveyance upgrades, deferring this investment would not remove the underlying need. Instead, it would increase the risk of higher future costs, declining service performance, and non-compliance with environmental and other regulatory requirements.

2.5 Where the investment is targeted

The additional growth-related investment is geographically concentrated in these corridors. Figure 6 shows the broader distribution of planned capital expenditure across our service regions over the FY28–FY30 period.

WHERE GROWTH MEETS INVESTMENT



SOMERSET

↑29% POPULATION FORECAST IN 10YRS
$71M TOTAL INVESTMENT (FY28-FY30)

- Kilcoy WWTP Recycled Water Pipeline | [redacted]
- Toogoolawah WWTP Irrigation Upgrade | [redacted]
- Tarampa to Jacqueline Road Reservoir Trunk Main | [redacted]

LOCKYER VALLEY

↑22% POPULATION FORECAST IN 10YRS
$58M TOTAL INVESTMENT (FY28-FY30)

- Gatton WWTP & Recycled Water Upgrades | [redacted]
- Laidley WWTP Upgrades | [redacted]
- Program of Reservoir Rehabilitation & Water Quality Upgrades | [redacted]

BRISBANE

↑9% POPULATION FORECAST IN 10YRS
$1,141M TOTAL INVESTMENT (FY28-FY30)

- S1 Trunk Sewer Augmentation | [redacted]
- Eagle Farm Rising Mains Renewal | [redacted]
- Z4 Catchment Water Critical Mains Renewals | [redacted]

SCENIC RIM

↑30% POPULATION FORECAST IN 10YRS
$91M TOTAL INVESTMENT (FY28-FY30)

- Beaudesert WWTP, Reuse Scheme & Network Growth Upgrades | [redacted]
- Beaudesert Water Network Growth Upgrades | [redacted]
- Peak Crossing & Warrill View Disinfection Enhancements | [redacted]

IPSWICH

↑41% POPULATION FORECAST IN 10YRS
$390M TOTAL INVESTMENT COST (FY28-FY30)

- Walloon SP492 to Wulkuraka Sewer | [redacted]
- Bundamba WWTP Intensification | [redacted]
- Goodna WWTP Upgrades | [redacted]
- New Ipswich WWTP | [redacted]

Figure 6 Planned FY28-FY30 regional capital expenditure map ($ millions)

Brisbane accounts for around 65% of planned FY28-FY30 capital expenditure, reflecting the scale of its asset base and its combined growth, renewal and compliance needs. The incremental growth-driven investment is concentrated in the Ipswich and Scenic Rim (Beaudesert) corridors, with further growth investment across the Lockyer Valley.

2.6 A prudent, efficient and deliverable program

A substantial majority of our program is driven by non-discretionary service obligations (growth, drinking water, environmental and critical infrastructure renewal requirements) rather than optional service improvements. Where investment is obligation-driven, the discretion that remains lies in how and when it is delivered, and that scope and timing is actively tested through our portfolio scenarios, capital challenge process and adaptive management of investment plans. Investment is prioritised on a service risk-basis, directed first to extreme and service risks that exceed our risk appetite, and is delivered through a mature programmatic model with the Program Management Approach successfully delivering over $1 billion of infrastructure across around 200 projects with an industry benchmark level of certainty for both time, cost, safety and quality. Its successor, Next Generation for Delivery (NG4D) has now been operating for approximately 12 months, bringing together an Integrated Services Provider and two Delivery Partners to drive further efficiency.

A distinct and time-critical driver sits alongside this program being the Brisbane 2032 Olympic and Paralympic Games. Significant investment has been identified to be required to ensure our water and wastewater networks are in place and ready to support the Games and the development that accompanies them, against a fixed and immovable delivery deadline. The funding arrangements for that investment, including the extent of any government contribution and how costs will ultimately be allocated, remain uncertain and are the subject of ongoing engagement with government. Given its scale, timing and funding uncertainty, this investment is identified and tracked as a separate stream within our Capital Investment Plan, distinct from business-as-usual service-obligation investment and is described further under Major Projects.

The program has been planned, prioritised, governed and assured to support prudent, efficient, deliverable investment, with affordability managed through the overall investment envelope, staging of expenditure and the revenue and pricing framework. These considerations are applied throughout this annexure:

- prudency, by ensuring every investment is traceable to a defined service need;
- efficiency, through options analysis, whole of life cost assessment, service risk-based prioritisation and competitive delivery arrangements;
- deliverability, through a realistic and smoothed delivery profile; and affordability, through the timing and staging of expenditure within the broader revenue and pricing framework, including the smoothing of customer bill impacts over time.

3 Part 2 – Why are we investing

This Part explains why higher levels of infrastructure investment is required. It demonstrates that:

1. The existing ageing asset base requires increasing, risk-based renewal investment to maintain service reliability
2. Population growth is consuming existing local network and treatment capacity, particularly in the western and regional growth corridors; and
3. Environmental, public health, security, climate and urban delivery conditions are increasing the scope, complexity and timing pressures associated with necessary investment

3.1 Operating environment and system pressures

We deliver water and wastewater services to over 1.6 million customers across five local government areas covering 14,384 square kilometres, representing around two-thirds of South East Queensland. The network comprises 9,813 kilometres of water mains, 10,136 kilometres of wastewater mains, 115 water reservoirs, 350 pump stations and 26 wastewater treatment plants. This infrastructure spans high-density inner-city Brisbane, rapidly growing greenfield corridors in Ipswich and the western corridor, and dispersed rural townships and agricultural communities across Lockyer Valley, Scenic Rim and Somerset.

The FY28 to FY30 regulatory period coincides with a period of increasing demand on this infrastructure. Asset maturity, population growth, increasing environmental and security requirements, and changing rainfall patterns are placing upward pressure on both capital and operating expenditure. These pressures are occurring at the same time and can interact: growth brings forward the need for capacity investment, ageing assets increase renewal requirements, increased environmental requirements influence treatment and monitoring needs, and changing rainfall patterns place additional pressure on wastewater networks and treatment systems. These pressures are concurrent and, in several respects, compounding.

The nature of these pressures reflects a material shift from the conditions that supported service delivery in previous periods. In many areas, available treatment and conveyance headroom is at its limits as demand increases. A once relatively young asset base with available capacity for densification and expansionary growth is now represented by an increasing proportion of ageing infrastructure. Previously stable growth assumptions have given way to accelerating growth and housing demand across our network. Brisbane remains a major source of this pressure, with $297m of growth investment planned over the regulatory period. Alongside this, growth is accelerating in the Ipswich, Scenic Rim (including Beaudesert) and Lockyer Valley corridors. Available infrastructure capacity established during the original development of water and wastewater networks has now been consumed in localised areas creating new constraints and bottlenecks across the asset base.

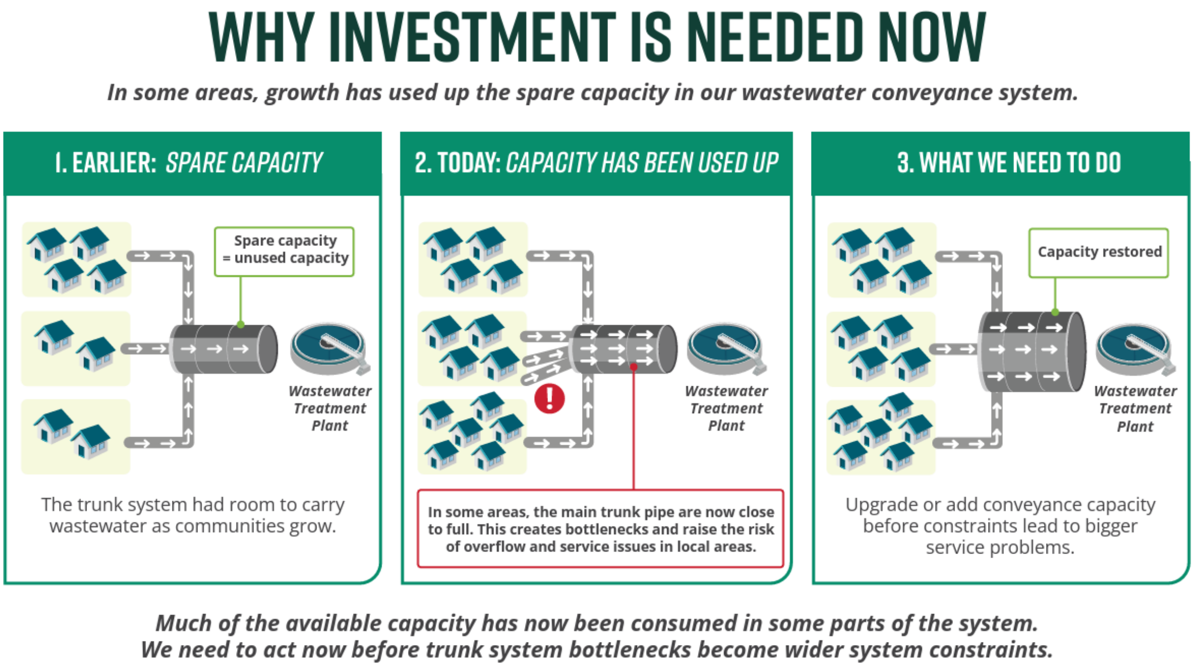


Figure 7 Fixing critical backbone pipes improves the performance of the entire network

These asset and service pressures are also occurring in a more constrained delivery market. Across Australia, major infrastructure, housing, energy transition, transport and utilities programs are increasing demand for engineering, design, construction, specialist trades, materials and equipment. In South East Queensland, this pressure is compounded by a substantial regional infrastructure pipeline. This increases competition for the resources needed to deliver water and wastewater infrastructure and places upward pressure on construction and maintenance costs. The increase in our forecast capital expenditure therefore reflects both the underlying service need and the cost of delivering that investment in a constrained market. The forecast portfolio includes an allowance for construction cost escalation based on approved indexation assumptions, which will be updated through the annual planning process as market conditions and actual indices become known.

Our capital investment plan is therefore being developed in the context of both a broader transition across the Australian urban water sector and a more challenging infrastructure delivery environment. Water utilities nationally are planning materially higher capital programs driven by a common set of drivers converging simultaneously[2]. Much of the sector's water and wastewater infrastructure was built or materially expanded in the mid to late twentieth century and is now reaching, or approaching, the point at which renewal and replacement needs are increasing. At the same time, population growth is increasing demand for new capacity, climate adaptation is requiring greater resilience to drought, flood and wet weather impacts, and expanding environmental, public health and security obligations are changing the scope and standard of infrastructure required.

These drivers are no longer emerging in isolation. They are occurring together and, in many systems, interacting: growth brings forward capacity investment, ageing assets increase

[2] 3 Water Services Association of Australia, (2026), Water in transition – Rising costs and the decline of 'free' environmental services, March.

renewal requirements, climate risk changes design and resilience needs, and increased regulatory requirements influence treatment, monitoring and operational standards. WSAA analysis indicates that capital expenditure across Australian water and wastewater services has increased substantially in recent years and is forecast to remain elevated. The uplift in our investment is consistent with a sector-wide trend, although the timing, scale and composition of our program are driven by our own service area, asset base, growth profile and regulatory obligations.

The constrained delivery market also reinforces the importance of how the program is delivered. We actively manage higher construction costs and competition for resources through long-term planning, early market engagement, program packaging, standardisation, delivery partner arrangements, cost assurance and portfolio sequencing. These mechanisms are described further in this annexure and are central to converting the investment need into a prudent, efficient and deliverable program.

Recent regulatory decisions in other jurisdictions provide further context. Independent Pricing and Regulatory Tribunal (IPART)'s 2025 decisions for Sydney Water and Hunter Water, and the Essential Services Commission (ESC)'s 2026 decision for Melbourne Water, each recognise that higher levels of investment are required to maintain services, support growth and meet community and environmental expectations. Those decisions also highlight the scrutiny regulators apply to affordability, timing, deliverability and the evidence supporting planned expenditure. That is the same discipline we have applied in developing this program.

We enter this period as a strong performer. Benchmarking through Water Services Association of Australia (WSAA) and National Performance Reporting indicates that our service reliability and water quality performance are generally strong compared with comparable utilities, while our adjusted total cost is at or near the median for comparable utilities. The investment set out in this annexure builds on our strong performance. It is the forward-looking investment required by a prudent and efficient operator to maintain service outcomes, meet increased statutory and regulatory requirements, and respond to growth, renewal and environmental pressures that are now material to our network.

3.2 Asset age, performance, condition and risk-based renewal

Our water and wastewater networks have been built progressively over more than 130 years, with some assets dating back to the late nineteenth century. Today we manage around 9,800 kilometres of water mains and 10,100 kilometres of wastewater pipelines, alongside the reservoirs, pump stations and treatment facilities that support them. This depth and reach is a strength, but it also means that asset renewal is becoming a prominent driver of our forward capital profile.

The age profile of our linear network reflects distinct construction cohorts. Significant portions were constructed during the inter-war period and, more materially, during the 1960s and 1970s as Brisbane's suburbs were progressively sewered and water service expanded. The single largest construction year in our records sits in the early 1970s (Figure 8).

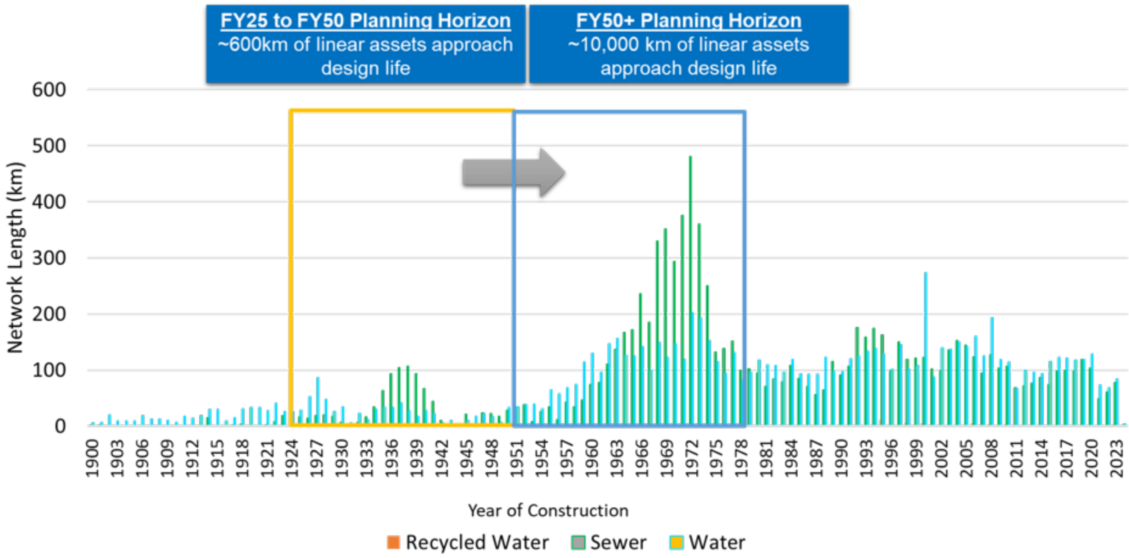


Figure 8 Age profile of linear assets, showing the construction cohorts that are driving increasing long-term renewal requirement

Depending on material, asset type and operating environment, these assets were designed for service lives in the order of 70 to 100 years or more. A small proportion of these assets has already extended beyond their original 100 year design life with some as old as 130 years. The majority of this cohort of assets from these periods is now approaching, or has begun to enter, the later stages of its design life.

Critically, we do not replace assets simply because they reach a particular age. We have tested age-based renewal explicitly and found that it would not represent the most efficient or prudent strategy for customers. We maintain asset renewal optimisation models for scenario analysis and trade-off between cost, risk and performance in selecting the preferred long term asset management strategy. For our linear assets, an age-based renewal strategy, which would replace assets as they reach their theoretical service life, was modelled as one investment scenario. We instead adopted a risk-based renewal strategy because it targets expenditure to service risk and provides a more prudent and affordable outcome for customers.

When identifying and prioritising asset renewals or upgrades, we consider the current performance of the asset base alongside asset condition, criticality and the consequences of failure. Our linear assets are currently performing within the service levels set out in our Customer Charter, with failure rates generally comparable to or lower than those reported by other major water utilities (Figure 9 and Figure 10).

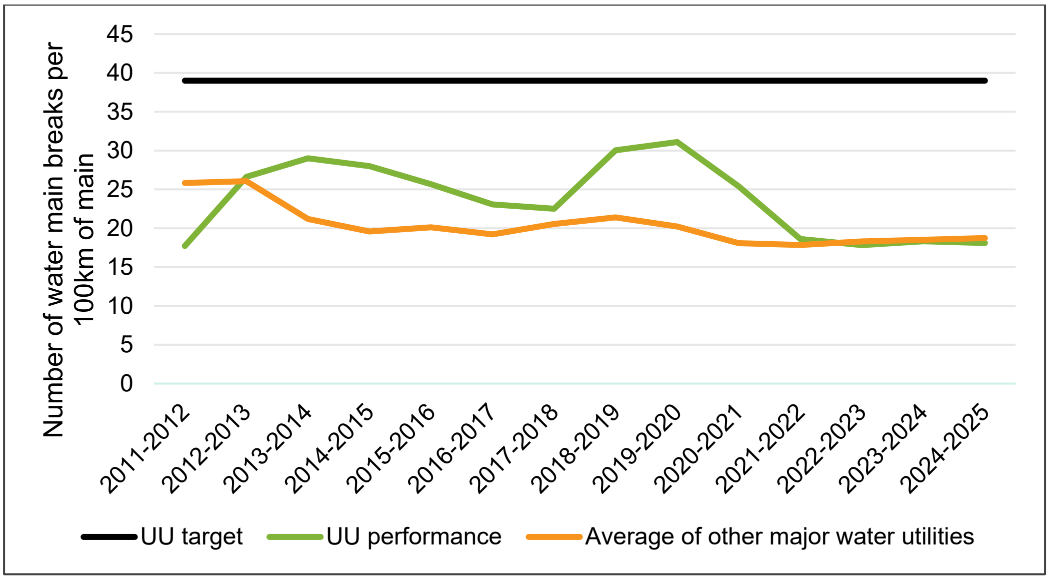


Figure 9 Water mains – Main breaks per 100km of main

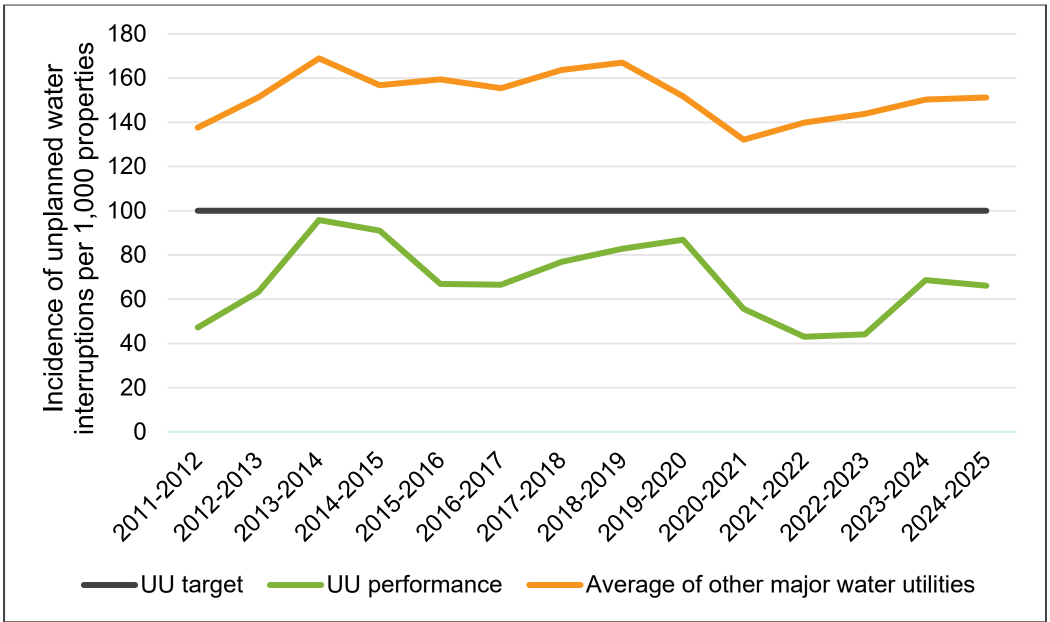


Figure 10 Water mains – Unplanned interruptions per 1,000 properties

Similarly, we perform strongly in restoring service following unplanned interruptions caused by failures within our linear networks. This performance data, together with information on failure trends, asset condition, criticality and the consequences of failure, informed the assessment of long-term management options and the selection of the preferred water mains strategy and associated investment profile.

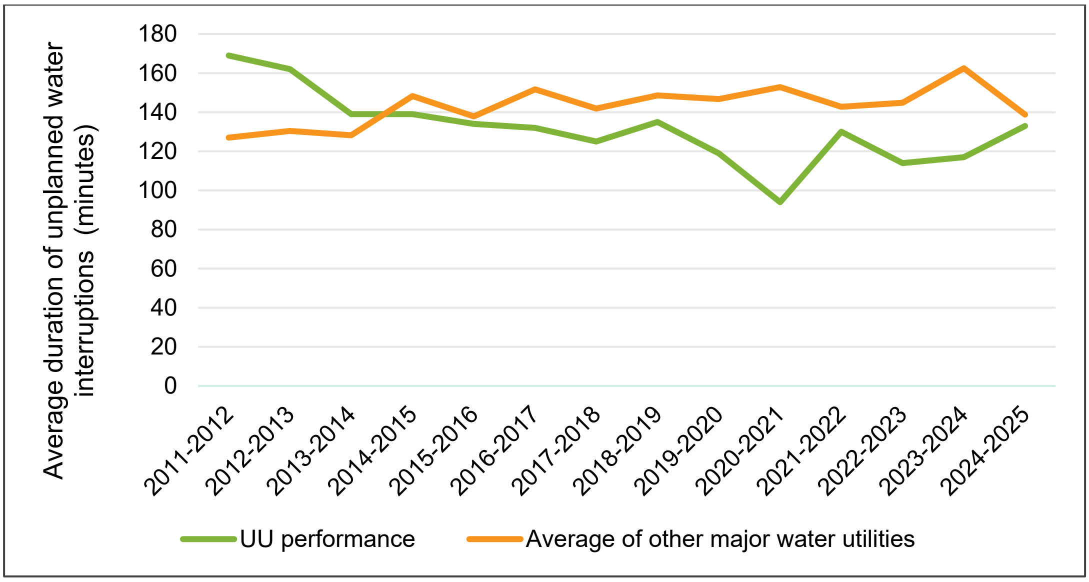


Figure 11 Water mains – Average duration of unplanned interruptions

The strategy we selected instead prioritises intervention by service risk, first addressing extreme-risk network length and then working systematically through the high-risk band. **This gears our investment towards the most critical trunk service assets and defers investment in non-critical assets enabling us to leverage our civil maintenance crews for targeted capital replacements while sustaining service at materially lower cost than replacement based on age alone would require.** It reflects the deliberate transition we made between 2015 and 2020, away from an age-based linear renewal model towards a condition and service risk-based approach that considers likelihood and consequence of failure, criticality, service performance and failure history.

This approach allows us to apply lower-cost interventions including relining, cathodic protection, pressure management and responsive repair of non-critical mains, where these are the most economic way to extend asset life. It also allows us to continue operating sound assets safely and economically beyond their nominal service life where it is prudent, while accelerating replacement where condition and risk justify it. The result is a more efficient, evidence-based program, lower overall renewal investment than an age-driven program would require, and corresponding downward pressure on customer bills.

This discipline is supported by an auditable assessment framework. Condition is assessed using Institute of Public Works Engineering Australasia (IPWEA) Technical Practice Note 7 and our Condition Assessment Manual, applying a 0 to 5 condition rating and remaining-useful-life methods that range from direct material measurement through to degradation-curve and age-based estimation. Higher-level assessments are led by Registered Professional Engineers of Queensland.

This condition data feeds a suite of four network risk models covering pressure mains, sewer gravity mains, valves and hydrants. These models use a semi-quantitative methodology aligned with the Water Services Association of Australia Risk Management Guidelines for Pressure Water Pipelines. Each asset is scored for likelihood of failure, drawing on factors such as material, diameter, age, soil loading, corrosivity, failure history and condition. It is also scored for consequence of failure, considering customer, health and safety, financial, compliance and environmental impacts. Likelihood and consequence are then combined using the corporate risk matrix.

Where field condition assessment data exists, it overrides the age-based desktop estimate of likelihood. Age is therefore used as a fallback where direct evidence of condition is not available, rather than as the primary driver of investment. These asset-level risk scores are consolidated through our Enterprise Decision Analytics platform into optimised 30-year renewal forecasts within our Strategic Asset Class Plans, which form the Gate 1 basis for long term renewal investment profiles and are governed by our corporate Risk Appetite Statement. These long-term investment profiles and preferred asset management strategy guides tactical renewal planning which thereafter further refines and prioritises the renewal investments at a detailed project level through Integrated Plans and Gate 2 business case documentation. Investment is therefore targeted at the right asset, at the right time and at an efficient scale.

The effect of this targeting is visible in the current state of the network. When network length is mapped across the risk matrix by criticality and likelihood of failure the overwhelming majority of our linear assets sit in the lower-criticality bands and within each band, in the lower likelihood of failure grades. Only a small proportion of network length is both high criticality and high likelihood, resulting in extreme risk rating. It is this cohort, rather than the age profile as a whole, that the renewal program is built to proactively address. **Older assets within the network continue to perform within acceptable risk settings well beyond their nominal design life, and as such our investment is prioritised towards the critical and most extreme risks, not the asset age. This risk-based approach presents opportunities for significant deferral of cost (approximately $380M) over the 10-year profile when comparing two extreme risk scenarios, one inclusive of reticulation mains and the other (preferred) excluding reticulation mains.**

Service performance provides further evidence that support this approach. In FY25, water main breaks were 18.1 per 100 kilometres of main, against a target of fewer than 39. Sewerage main breaks and chokes were 15.6 per 100 kilometres, against a Customer Charter standard of fewer than 30. This strong performance provides a sound foundation, while targeted investment remains necessary to sustain outcomes as asset and service risks increase. Maintaining service at these levels as the asset base continues to age is a key purpose of the forward renewal program.

The same Enterprise Decision Analytics platform also allows us to forecast how the risk profile of an asset class will evolve over time under different investment scenarios, and to select the scenario that best balances cost, risk and service performance. Extreme risk trunk mains are prioritised for investment while extreme risk reticulation main length steadily grows over the 30-year time horizon and are instead targeted through responsive renewals. The low risk band declines as ageing assets migrate into the medium and high-risk bands with the risk profile broadly stabilising thereafter. This upward migration is a deliberate and controlled outcome rather than a shortfall in the program as proactive renewal is concentrated on the highest-consequence mains, where the consequences of failure are greatest, while lower-consequence reticulation is managed through responsive repair where that remains the most economic response, consistent with historically strong water main performance. The same scenario-based optimisation approach is applied across our linear asset classes; it is how we test cost, risk and performance trade-offs and prioritise a finite renewal budget on the assets that matter most.

The scale of the renewal task is now stepping up. Current planning indicates that around 600 kilometres of linear assets are nearing end of life within the current planning horizon. Beyond this, the challenge becomes substantially larger, with around 10,000 kilometres of linear assets expected to approach design life from FY50 onwards. This represents a step change in the scale of renewal we must prepare for now, not only through targeted investment to manage current service risk, but by building the data, condition-assessment, planning and delivery capability required for a much larger future replacement task.

Renewing ageing assets in established urban corridors also adds cost and complexity beyond what condition data alone can show. Many older critical assets are located in dense, highly developed areas where road corridors, rail interfaces, other utilities, traffic management requirements and limited access constrain how works can be undertaken. Renewal is frequently not a like-for-like replacement in open ground. It may require deeper excavation, trenchless methods, temporary service arrangements, customer and traffic disruption management, and complex construction sequencing to maintain service continuity. Our $209 million Bulimba–Hamilton Siphon renewal, which replaces a critical 70-year-old wastewater crossing serving the Luggage Point catchment, illustrates the scale and engineering complexity that renewal of legacy critical assets can require.

The renewal task is further shaped by our origins of five separate council-operated systems. At formation, we inherited infrastructure with different ages, materials, design standards, records and operating histories. As a result, assets within a single catchment or zone can have materially different condition profiles and risk profiles. This reinforces why renewal planning must be granular and evidence-led, rather than driven by age alone.

Ageing assets also influence operating expenditure. Older assets typically require more intensive inspection, maintenance and response to sustain service. Where assets deteriorate, they can increase exposure to unplanned failures, customer interruptions, water loss, infiltration and inflow, environmental incidents or emergency works. Prudent well-timed renewals manages these risks by intervening before assets fail, where replacement or rehabilitation represents the lowest sustainable whole-of-life cost for customers.

Our forward capital profile is therefore not being driven by any single factor. It reflects the combined effect of asset age, observed condition, service risk, growth, compliance and the practical realities of working in mature urban environments. Our approach is to renew assets at the right time, in the right location and at the right scale, using evidence-based prioritisation to balance cost, risk and service performance. This supports safe and reliable services today while preparing for the larger renewal wave that will emerge over coming decades.

3.3 Population growth and demand-led investment

South East Queensland is among Australia’s fastest growing regions, and our service area sits at the centre of that growth. The population across the five local government areas we serve is forecast to increase by around 30% over the next 20 years, equivalent to more than 512,700 additional residents[3]. ShapingSEQ 2023 also plans for a 50% net increase across the region between 2021 and 2046. Servicing this growth requires us to extend water and wastewater infrastructure to new communities and to add capacity where existing networks, treatment plants and supporting assets are approaching their capacity and planning limits. Growth is a central contributor to the increase in forecast capital expenditure, although renewals remains the largest investment category overall.

[3] Queensland Government Statisticians Office, 2025 population projections, medium series 2026-2046 indicate a total increase in population of 512,744 persons across the Brisbane, Ipswich, Lockyer Valley, Somerset and Scenic Rim LGAs over the 20-year period.

This growth is already visible in our connection base. As shown in Figure 12 and Figure 13, both water and wastewater connections have increased steadily over the period FY11 to FY25, with the majority of growth coming from residential connections. This reflects the continuing expansion of our customer base and the increasing load placed on our water supply and wastewater systems.

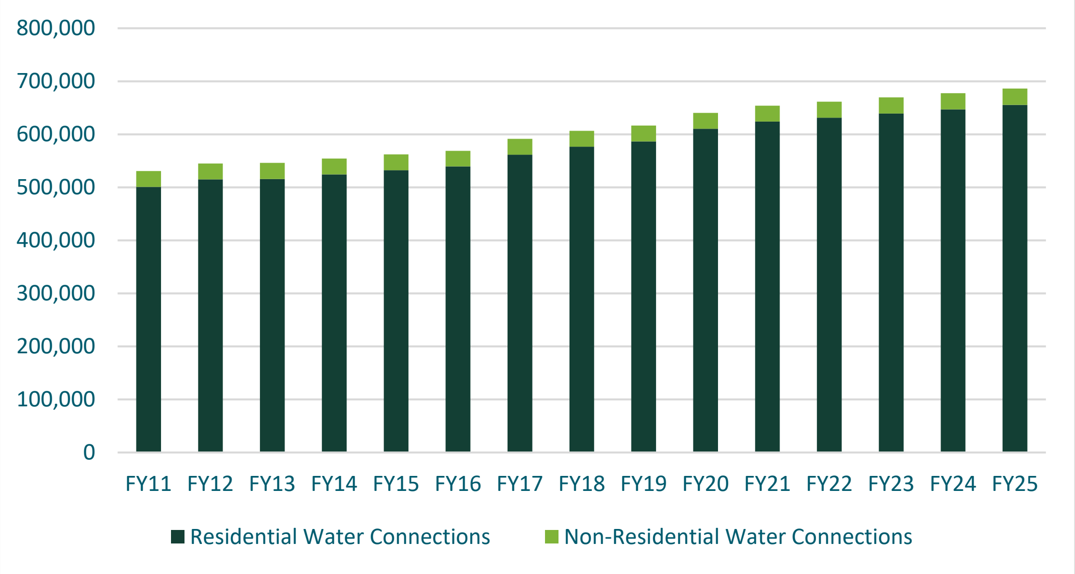


Figure 12 Water connection growth (Source: Urban Utilities, Annexure 3- Demand Forecast Fig 6-2)

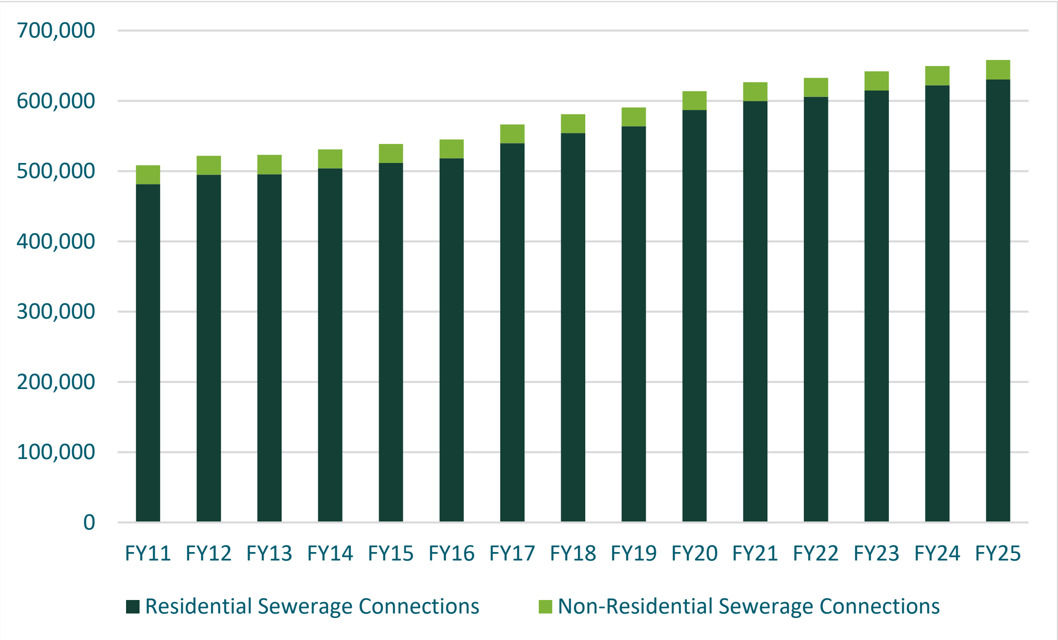


Figure 13 Wastewater connection growth (Source: Urban Utilities, Annexure 3- Demand Forecast Fig 6-3)

Connection growth translates directly to higher service demand. For water supply, forecast average daily demand is expected to increase from around 430 million litres per day in 2023-

24 to around 470 million litres per day by 2029-30 (Table 2). Most of this increase is driven by residential demand, although non-residential demand and non-revenue water also rise over the period.

Table 2 Forecast total water supply demand by component, 2023-24 to 2029-30

Demand component	Average Daily Demand (Million Litres per Day)						
	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30
Residential demand	278	284	290	295	299	304	308
Non-residential demand	115	116	117	119	120	121	122
Non-revenue water	37	38	38	39	39	39	40
Total water supply demand	**430**	**438**	**445**	**452**	**458**	**464**	**470**

Source: Urban Utilities, Annexure 3 - Demand Forecast, Table 4-3

The wastewater impact is best understood through forecast sewer equivalent persons, which show both the scale and location of future loading on the wastewater system. As shown in Table 3, total residential sewer equivalent persons are forecast to increase from around 1.66 million in 2025-26 to around 2.20 million by 2045-46. Brisbane remains the largest system in absolute terms, but the rate of growth is materially higher in Ipswich, Lockyer Valley, Scenic Rim and Somerset. Ipswich alone is forecast to increase from around 268,000 equivalent persons in 2025-26 to around 486,000 by 2045-46.

Table 3 Forecast residential sewer equivalent persons by council area, 2025-26 to 2045-46

Region	2025-26	2030-31	2035-36	2040-41	2045-46
Brisbane	1,347,387	1,408,042	1,476,848	1,564,652	1,644,819
Ipswich	268,130	332,891	384,597	440,032	486,412
Lockyer Valley	13,918	15,795	17,840	19,966	22,046
Scenic Rim	15,201	18,119	20,884	23,464	26,167
Somerset	10,516	12,812	14,716	16,282	17,452
Total	**1,655,152**	**1,787,659**	**1,914,885**	**2,064,396**	**2,196,896**

Source: Urban Utilities, Annexure 3 Demand Forecast, Table 5-2

This localisation matters. Water and wastewater systems are planned and operated at network, catchment and treatment plant level. Capacity available in one part of the region cannot be used to service growth in another. As a result, growth investment cannot be assessed only by reference to average population growth across the service area. It must be assessed by where development is occurring, when additional connections are expected, and whether the relevant local network, trunk infrastructure and treatment assets have capacity to serve that growth.

This pressure is concentrated in specific catchments, particularly in our western and southwestern growth corridors. Ipswich City, one of Australia's fastest growing local government areas[4], recorded compound annual growth of around 3.0% in residential water connections and 3.2% in wastewater connections between FY13 and FY25, adding close to 28,000 wastewater connections over the period. Growth is also occurring across the Scenic Rim, Lockyer Valley and Somerset, while established Brisbane catchments are generally growing more slowly.

Much of this growth is also occurring in areas that are more expensive to service. Greenfield development corridors require new trunk water and wastewater networks to be built ahead of, and in step with, development. Regional catchments across the Lockyer Valley, Scenic Rim and Somerset have more dispersed development patterns and limited economies of scale. In some locations, the cost of providing trunk infrastructure is estimated to be up to five times the revenue recovered from the customers it serves. These structural costs are compounded by our origins. We were formed in 2010 from five separate council water and wastewater systems, each with different historical standards, configurations and asset bases. Growth infrastructure must therefore be integrated into networks that were not originally planned as a single, uniform system, which can add interface costs, engineering complexity and delivery risk.

[4] Ipswich City Council (2026), Ipswich claims title of Queensland's fastest growing city, citing Australian Bureau of Statistics population data.

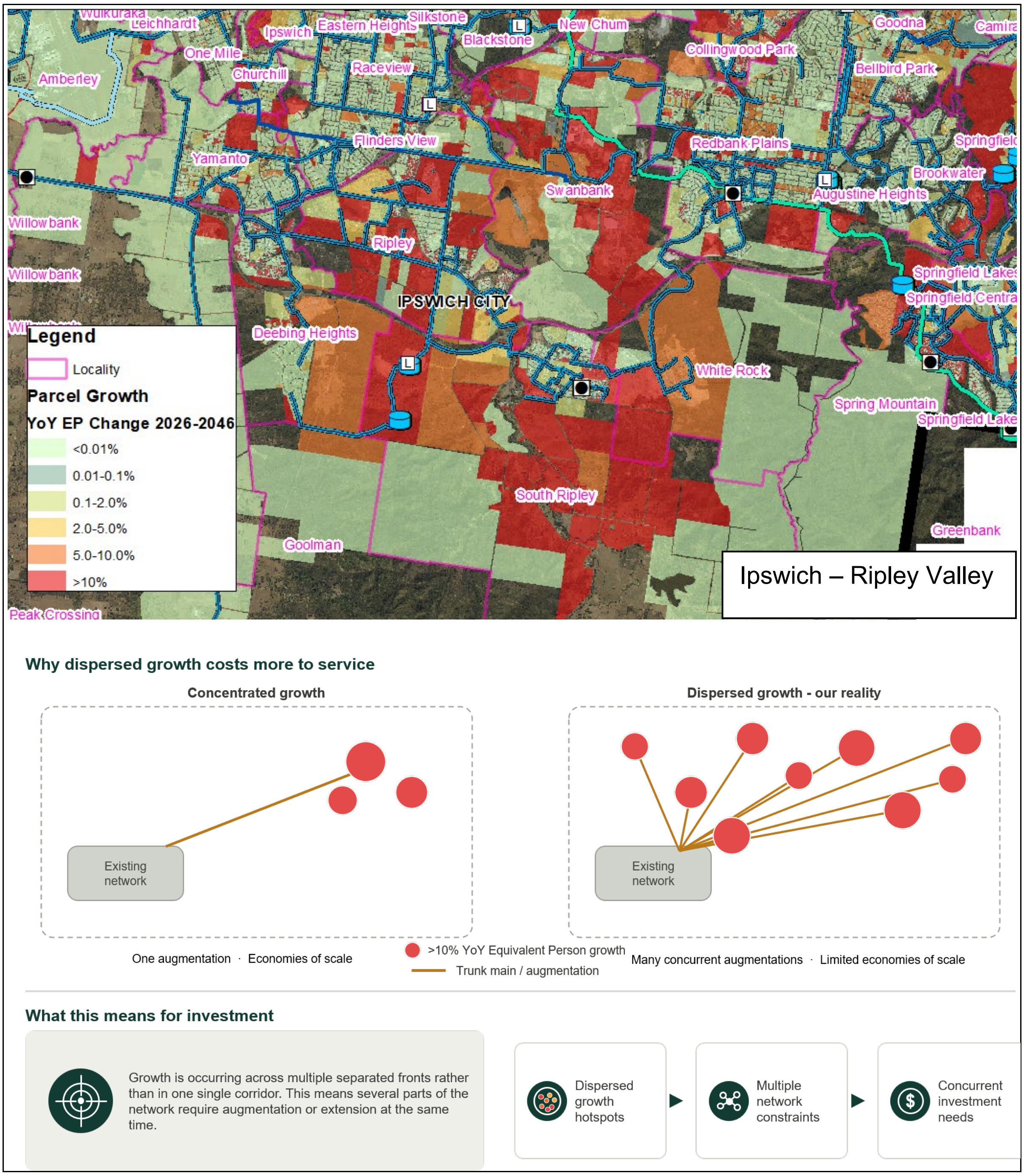


Figure 14 Forecast dispersed growth across the Ipswich – Ripley Valley and its impact on investment

The most acute and least flexible pressure is wastewater treatment capacity. Our 10-year planning identifies that 11 of our 26 wastewater treatment plants are, or are forecast to become, capacity constrained within the 10 year planning horizon, including immediate constraints with facilities at Bundamba, Goodna, Rosewood and Beaudesert. Treatment plants have physical, hydraulic and biological process limits, as well as approved operating limits under environmental authorities. Once a plant approaches those limits, additional growth cannot simply be absorbed by the existing asset without increasing service, compliance and environmental risk.

Augmentation also typically requires long lead times for planning, approvals, land, design, procurement and delivery. Addressing these constraints is expected to require more than 250,000 equivalent persons of additional treatment capacity over the coming decade, concentrated in a small number of major programs, with the largest pressures in the Ipswich catchment.

Treatment capacity cannot be considered separately from environmental compliance and other regulatory requirements. This interaction is an important driver of both the scope and cost of growth investment. Our treatment plants operate under environmental authorities issued by the Queensland Government, which set site specific approved capacities, wastewater quality requirements and operating conditions. As population growth pushes treatment volumes towards approved limits, we must seek amendments to operate at higher capacity. In practice, approval for additional capacity is often accompanied by more stringent wastewater quality or operating requirements.

The effect is that an augmentation project is not simply a matter of adding hydraulic capacity. It may also require higher order treatment processes, additional monitoring, changes to discharge arrangements or other measures to meet the environmental standard that applies at the higher load. This is particularly important for regional plants in the Scenic Rim, Ipswich, Lockyer Valley and Somerset, where receiving environments can be more sensitive and where some discharges are connected to tributaries of drinking water supply catchments.

Growth and increased environmental compliance therefore combine to create a compounding capital requirement that is not always visible when each driver is considered in isolation. In these circumstances, growth investment is not discretionary service enhancement. It is the prudent and necessary response to maintain compliant, reliable services as approved development occurs.

We do not commit growth capital simply because growth is forecast. Investment is staged and sequenced to align with demonstrated demand, development timing, available hydraulic and treatment process capacity and service risk. Hydraulic network models, process models, development activity, connection trends and planning assumptions are used to identify when and where augmentation is required against defined planning and design criteria. The timing, scope and sequencing of major programs are then tested through our integrated planning and capital gateway assurance framework. The discipline is to follow demonstrated demand and service need, rather than to build speculatively.

This approach also recognises the practical limits of deferral. Major wastewater treatment, trunk network and associated enabling works can take many years to plan, approve and deliver. Several of our most constrained catchments are forecast to reach binding capacity or licence limits within similar timeframes. Decisions taken in FY28 to FY30 therefore affect our ability to service approved development well beyond this regulatory period. Committing to the right investment, in the right catchment, at the right time is central to maintaining safe, reliable and compliant services as the region grows through the 2030s.

3.4 Brownfield complexity and urban density

Renewal and augmentation works in established urban areas are increasingly delivered within constrained corridors where road and rail infrastructure, existing services, building footprints and limited site access affect construction methodology, extend delivery timeframes and increase cost. Much of the network was originally laid by open-cut trenching through open or lightly developed land. Those same corridors are now often occupied by arterial roads, rail and busway alignments, dense building frontages and a congested underground environment shared with electricity, gas, telecommunications and other utilities. This change largely reflects decades of urban consolidation around our existing network. As a result, the setting in which an asset sits can increasingly determine how, when and at what cost renewal or augmentation can be delivered.

Several factors compound this challenge. Open-trench construction is often not feasible or would cause unacceptable disruption, so works may rely on trenchless methods, including microtunnelling, or on deeper excavation to pass beneath roads, rail corridors and existing services. These methods are typically more complex and higher cost than a simple open-trench installation. Critical assets also generally cannot be taken out of service, so renewal often requires complex temporary works including bypasses or diversions to keep water flowing or wastewater conveyed throughout construction. Surrounding services must be located and protected, higher safety controls are required, and lane closures or road occupancy conditions can push activity into night and weekend shifts. Once works are complete, surfaces must also be reinstated to road authority and council standards.

Ground conditions and approval requirements add further cost and risk before construction begins. Deep works can encounter groundwater, variable or contaminated ground, and flood-liable sites. Many projects also require interface agreements and approvals from third parties, including state road authorities, rail operators, port authorities, transport tunnel owners and Priority Development Area authorities. Easements, leases or land acquisition may also be required. These requirements are a necessary part of delivering work safely and lawfully in established urban corridors, but they can extend program duration and add cost before physical construction can commence.

The complexity of brownfield works is also compounded by the legacy of five separate council-operated water businesses consolidated at Urban Utilities' formation in 2010. The inherited network spans more than a century of development, with assets built under different design standards, pipe material preferences, construction practices and record-keeping systems. Within a single supply zone or catchment, adjacent assets may reflect different predecessor council standards or construction eras. This can increase uncertainty during planning and delivery, particularly where as-constructed records vary in completeness or format, or where the precise depth, material, diameter, alignment or connection details of existing assets must be confirmed in the field. In constrained urban corridors, this uncertainty can directly affect construction methodology, staging, service protection, approvals, safety controls and cost.

Recent major projects illustrate the scale of this challenge. The $46 million Breakfast Creek Trunk Sewer Upgrade was delivered by tunnelling around four storeys below ground for approximately 1km length, beneath Brisbane's Airport Link Tunnel and 26 railway tracks at Queensland Rail's Mayne Rail Complex, reflecting the constraints of installing new conveyance through a heavily built-up corridor.

Our largest single project to date, the $209 million Bulimba-Hamilton Siphon Renewal, is renewing a critical wastewater crossing beneath the Brisbane River that is more than 70 years old. The renewal must be undertaken through existing shafts on either side of the river that extend more than 20 storeys below ground and provide the sole access to the siphon tunnel. This makes the work highly complex, requiring specialised construction techniques and careful management to maintain uninterrupted wastewater services through a temporary bypass system. The project illustrates the significant cost and engineering challenges associated with renewing critical assets that cannot be switched off, and demonstrates how replacement of ageing infrastructure often becomes increasingly complex, costly and difficult over time.

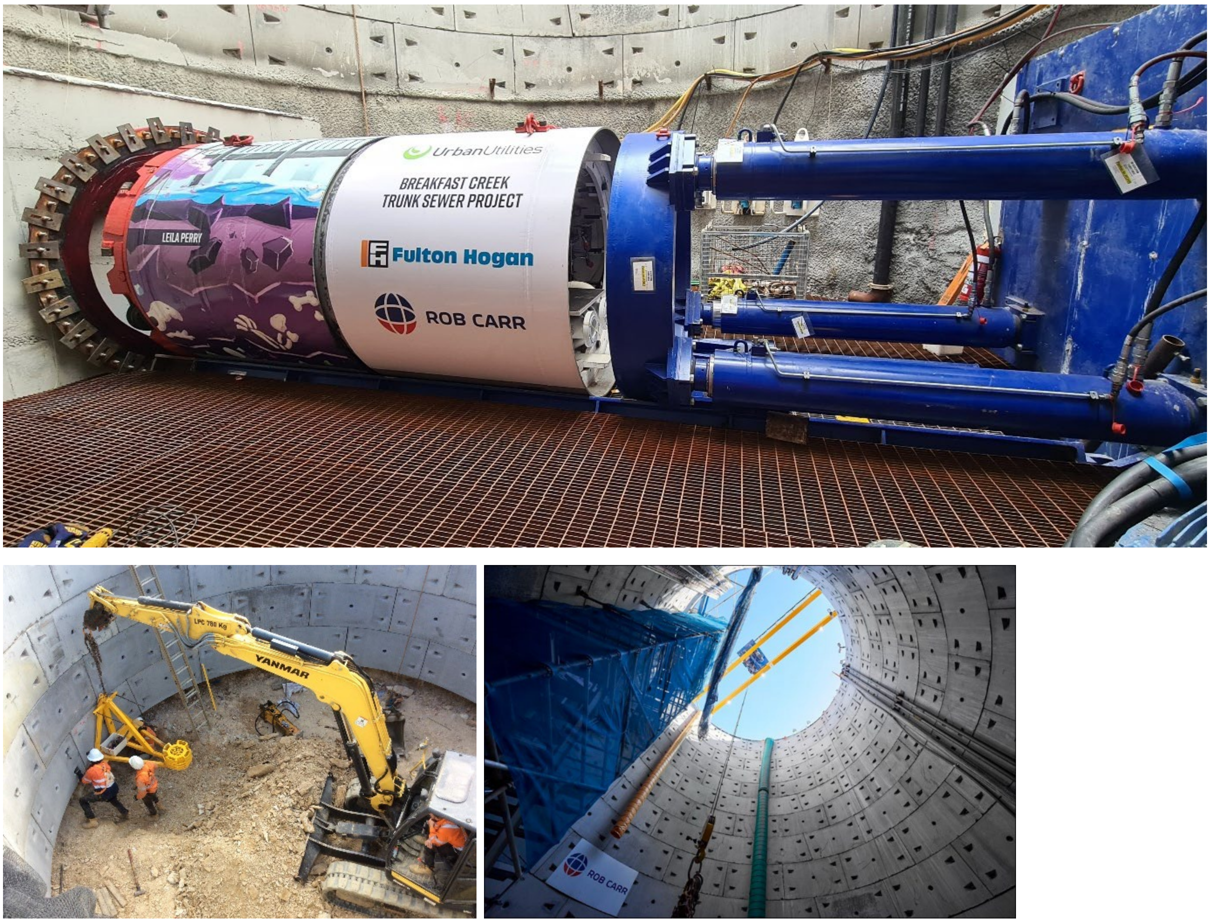


Figure 15 Breakfast Creek Trunk Sewer project

These conditions also shape how we respond to growth. High-density residential and transit-oriented development in established catchments is increasing demand on networks that were not designed for current occupation densities. Much of the inherited hydraulic and treatment capacity that once absorbed growth has now been consumed. As a growth-driven need, accommodating infill development increasingly requires augmentation, such as upsizing mains and upgrading pump stations and treatment capacity, within the same constrained corridors rather than through lower-cost greenfield extensions. Preparations for major events, including the Brisbane 2032 Olympic and Paralympic Games, add further pressure on inner-city networks.

Taken together, these factors mean brownfield works are often materially more complex and costly than the original installation of the same assets. The additional cost is not simply a function of pipe length or asset type, but of the urban setting, inherited network variability and approval environment in which the work must now be planned and delivered. We manage these pressures through the way works are scoped, sequenced and delivered, so the additional cost of working in a built-up network is incurred only where the risk and service case justifies it.

3.5 Regulatory and compliance environment

Figure 16 Helidon Wastewater Treatment Plant, Lockyer Valley Regional Council

We operate as a statutory authority under the *South-East Queensland Water (Distribution and Retail Restructuring) Act 2009* (Qld), within a substantial framework of State and Commonwealth legislation that directly shapes our service obligations and capital investment requirements.

The instruments with the most direct bearing on capital investment fall into several categories. Drinking water quality and public health obligations are governed by the *Water Supply (Safety and Reliability) Act 2008* (Qld) and the *Public Health Act 2005* (Qld). Environmental obligations are governed by the *Environmental Protection Act 1994* (Qld), including the conditions attached to the Environmental Authorities under which our wastewater treatment plants and relevant network facilities operate. Workplace safety obligations arise under the *Work Health and Safety Act 2011* (Qld). Critical infrastructure security and resilience obligations arise under the *Security of Critical Infrastructure Act 2018* (Cth), including requirements to manage and uplift physical security, cyber and information security, supply chain and personnel security risks. Customer service obligations are established through the SEQ Customer Water and Wastewater Code.

Our infrastructure must also be planned, designed and built in accordance with relevant planning and technical requirements, including the SEQ Design and Construction Code, the Queensland Planning Guidelines for Water Supply and Sewerage, our Water NetServ Plan and our Drinking Water Quality Management Plan. These instruments translate statutory, customer and service obligations into practical investment requirements for network capacity, water quality management, wastewater treatment performance, monitoring, resilience and service reliability.

In addition to water quality, environmental and customer service requirements, our operating assets must meet a range of safety, asset integrity and technical compliance requirements. These include obligations under legislation such as the *Work Health and Safety (WHS) Act*

2011 (Qld), the *Electrical Safety Act 2002* (Qld), the *Petroleum and Gas (Production and Safety) Act 2004* (Qld), and the *Security of Critical Infrastructure (SOCI) Act 2018 (Cth).* These regulatory requirements are particularly relevant for an asset-intensive utility with electrical systems, operational technology, pumping assets, treatment facilities, gas-related infrastructure and safety-critical plant and equipment. Meeting these requirements is essential to the safe and efficient delivery of our core services. It can also require material investment where legacy assets need to be renewed, replaced or modified to meet current or evolving statutory, technical and safety requirements.

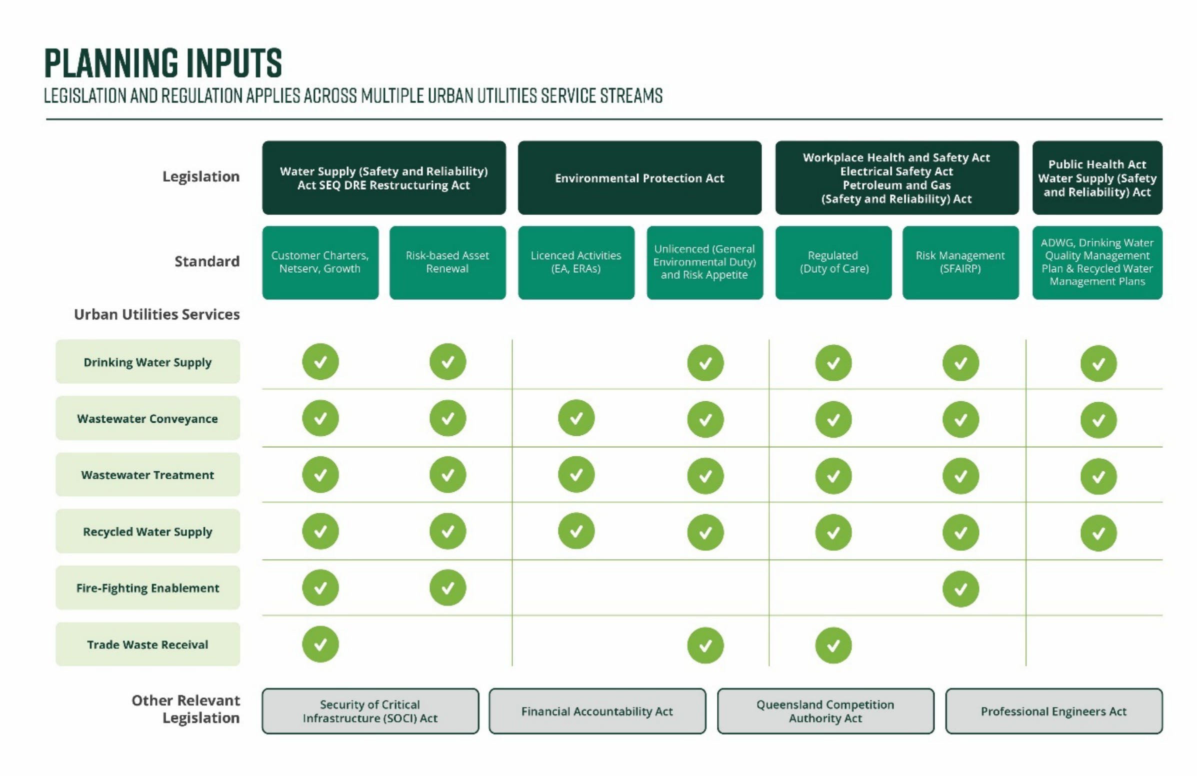


Figure 17 Legislative, regulatory and service standard inputs that inform investment need across drinking water, wastewater, recycled water, fire-fighting enablement and trade waste services

These regulatory requirements generate identifiable investment needs. Drinking water quality obligations require investment in treatment performance, disinfection, dosing systems, monitoring and network management. Environmental obligations require investment in treatment plant capability, overflow management, odour control, reuse and receiving environment protection. Critical infrastructure obligations require ongoing attention and investment in physical security, cyber resilience, operational technology and business resilience. Customer service obligations inform the investment required to maintain reliable supply, restore services within required timeframes and manage interruptions.

We manage these regulatory requirements through our corporate compliance, risk management, asset management and integrated planning processes. This ensures that regulatory and legislative requirements are identified, assessed and translated into capital and operational responses through a structured planning framework, rather than being treated as isolated project justifications.

This operating environment is also changing. Compliance requirements are evolving beyond traditional water quality and environmental requirements to include emerging contaminants, PFAS management, cyber security, critical infrastructure resilience, data governance, privacy and strengthened safety obligations. Where compliance requirements create investment need, our planning processes are designed to identify the obligation, test the available responses and incorporate the prudent and efficient solution into the forward program.

3.6 Public health, environmental and safety responsibilities

Where regulatory requirements protect public health, the environment and the safety of our people, they establish minimum outcomes that we must maintain. These requirements are not discretionary. We are required to provide safe drinking water, protect the environment and keep our people, customers and assets safe.

This does not mean that every proposed capital response is automatically accepted. While the underlying need may be non-discretionary, proposed responses remain subject to rigorous options analysis and challenge through integrated planning, portfolio optimisation and the capital gateway process to confirm the most efficient, prudent and cost-effective solution, timing and delivery pathway for achieving the required outcomes.

For drinking water quality, our Drinking Water Quality Management Plan provides a documented, risk-based foundation for identifying and managing public health risks. For environmental requirements, our Environmental Authorities and associated licence conditions inform investment in treatment capability, discharge quality, odour management, overflow mitigation and receiving environment protection. For safety requirements, assets with elevated safety risk due to their operational characteristics, failure consequences or hazardous operating environments are systematically assessed and prioritised through enterprise risk and asset management frameworks. This includes assets associated with high pressure systems, hazardous chemicals, confined spaces, electrical infrastructure and other critical operational risks.

The practical effect is that affordability options are considered around this core set of obligations, while keeping public health, environmental and safety risks managed. Lower priority investments may be deferred, re-scoped or re-staged where that can be done prudently. By contrast, investment required to maintain minimum public health, environmental and safety outcomes is retained in the program, while still being subject to the same discipline of options analysis, risk assessment, timing review and delivery efficiency as other capital expenditure.

This is the balance we seek to demonstrate in the capital program. The program is not simply a list of regulatory responses. It is the result of a structured process that identifies mandatory service and compliance outcomes, tests the efficient means of achieving them, and then prioritises investment within the broader constraints of customer affordability and long-term financial sustainability.

3.7 Climate resilience

South East Queensland has experienced elevated and variable wet-weather conditions in recent years. Brisbane's 2022 rainfall was 191% of the long-term average, and 2024 rainfall was 161% of the long-term average, with elevated conditions continuing into 2025[5]. This

[5] Bureau of Meteorology, Greater Brisbane in 2022: Annual Climate Summary; Greater Brisbane in 2024: Annual Climate Summary; Greater Brisbane in 2025: Annual Climate Summary; and Severe Tropical Cyclone Alfred (2025).

follows major flood events in 2011, 2013 and 2022, and Ex-Tropical Cyclone Alfred in March 2025.

This exposure is particularly relevant to our service area. The Brisbane River floodplain is one of Australia's most flood impacted floodplains and, due to the scale and density of population and infrastructure within the catchment, has among the highest potential flood damages in Australia. Queensland Reconstruction Authority modelling projects average annual flood damages to increase from approximately $289 million per year today up to $430 million per year by 2090[6] even without allowing for future development growth (Queensland Reconstruction Authority, 2019). This reinforces the case for proactive, risk-based and prudent investment in the climate resilience of essential water and wastewater assets.

These events are not isolated operational shocks. They are evidence of the conditions we need to plan for as an essential service provider. Climate change is expected to increase the intensity and variability of weather events, including more severe wet weather, flooding, heat, bushfire, storm tide, sea level rise, wind and drought hazards. For water and wastewater services, these hazards can affect service continuity, asset condition, environmental compliance, site access, power supply, workforce safety and recovery costs.

Our climate response follows the three themes Urban Utilities endorsed in 2018: understand, mitigate and adapt. We seek to understand the science and impacts of climate change and what matters to our customers and communities; to mitigate our own emissions where prudent and efficient; and to adapt our assets and operating approaches so services remain reliable and resilient in a changing climate. This section focuses on adaptation.

The Climate Change Adaptation Manual provides the practical framework for applying this adaptation approach through planning and investment decisions. It guides the integration of climate risks and adaptation measures into our planning processes, including how climate hazards are identified, how asset exposure and vulnerability are assessed, and how adaptation responses are considered through integrated planning and business case development. For capital planning, this means we no longer rely only on historical weather patterns to assess future service risk. We use historical events to understand current vulnerabilities, but we also consider plausible future climate scenarios, asset life, customer outcomes, compliance obligations and the cost of both intervention and non-intervention.

Climate resilience is not a discretionary overlay on our capital planning. It is embedded in the framework that governs how we make investment decisions. Our Risk Appetite Statement establishes that decisions which do not consider climate, where climate is relevant to the decision, fall outside our risk appetite. Consideration of climate, including climate change, is therefore a required input to applicable planning and investment decisions, rather than an optional addition. Climate change is also recognised in our Strategic Risk Register as both a strategic and operational risk, owned at executive level. In practice, climate risk is assessed within our integrated planning and gateway business case process, with the level of detail increasing as projects progress from early planning through to more detailed business case development.

A persistent operational consequence of more intense wet weather is inflow and infiltration, where stormwater enters the wastewater network through defects including legacy property connections, cracked pipes and deteriorated maintenance holes. Much of the network was

[6] Queensland Reconstruction Authority (2019). *Brisbane River Strategic Floodplain Management Plan*, Version 1.0, February 2019, pp. 8, 25, 28-29 and 33. A joint initiative of the Australian Government, Queensland Government, Brisbane City Council, Ipswich City Council, Lockyer Valley Regional Council, Somerset Regional Council and Seqwater.

designed to accommodate around five times average dry weather flow under historical rainfall patterns. Increasing rainfall intensity and frequency places those legacy designs under hydraulic stress, creating capacity constraints across conveyance networks and treatment plants and driving higher operational costs. Non-compliant private plumbing connections outside our direct control compound the inflow and infiltration burden. In response, our planning has matured from a broad five-times dry weather flow capacity design model towards a more efficient and cost-effective effects-based discharge modelling approach. This provides a better understanding of where discharges may occur, their likely magnitude and duration, and the risks they present. As a result, capacity investment can be targeted more directly to the locations and discharge risks that matter most, supporting more efficient allocation of capital while maintaining required service and environmental outcomes.

The customer and community impact is practical and direct. During major wet weather events, excess flows can increase the risk of wastewater overflows, require tankering or other temporary operating responses, constrain treatment processes, damage electrical and mechanical equipment and divert resources into clean up and recovery. Where assets are located in flood exposed areas, the consequences can extend beyond the asset itself, affecting environmental outcomes, local amenity, public health risk and the speed with which services can be restored after an event.

Climate risk is considered through a structured exposure, vulnerability and risk assessment that is built into our integrated planning process rather than undertaken as a separate exercise. Exposure identifies assets located in areas that may be affected by a climate hazard. Vulnerability then considers whether the asset is susceptible to damage or service failure, considering factors such as asset type, height, materials, protection, criticality, remaining life and ability to recover. Risk assessment then considers the likelihood and consequence of failure, including service, environmental, safety and cost impacts.

This process supports proportionate decision making. We do not seek to fully protect every asset against every possible future climate scenario. Instead, we prioritise interventions where the risk is material, the service consequence is high, the asset is critical, the investment can be efficiently timed with renewal or growth works, or the avoided recovery and operating costs justify earlier action. For new assets and assets reaching end of life, future climate conditions are considered as part of the design and options assessment. For existing assets not yet due for renewal, adaptation is generally considered where the current risk is intolerable, where a low regret intervention can materially reduce risk, or where an efficient opportunity arises through related works.

This approach is particularly important for affordability. Climate resilience investment must be targeted and justified. In line with the QCA’s focus on prudency and efficiency, our business cases for climate related expenditure consider the need for investment, the options available, timing, deliverability, customer and stakeholder considerations, whole of life cost, risk weighted avoided costs and the burden on customers over the period in which the service will be used. In many cases, the most efficient solution is to integrate climate resilience into an existing renewal, compliance or growth project rather than return later to retrofit a separate solution at a higher cost.

The relationship between resilience investment and recovery outcomes is quantifiable from our own operational record. Recovery of the Oxley Creek Resource Recovery Centre following the 2011 flood required around $30 million in rectification works and took over eight months to return the facility to service. Following targeted flood resilience investment in the intervening period, the same facility was returned to service materially quicker following the 2022 flood event. Our assessment indicates that the avoided recovery costs and reduced service disruption from this single event materially offset the resilience investment made between 2011 and 2022. While every event is different, this experience demonstrates the value of well targeted resilience investment in reducing service disruption, recovery cost and operational risk.

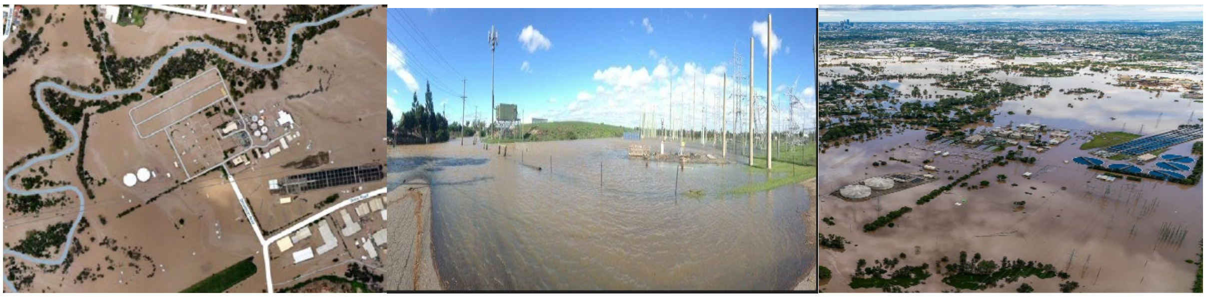


Figure 18 Oxley Creek Resource Recovery Centre - 2011, 2017, 2022

Our integrated planning approach also allows climate resilience decisions to be adaptive. Where future conditions remain uncertain, we identify decision points and triggers so that investment can be reviewed as new climate data, asset condition information, growth forecasts, regulatory requirements and customer expectations evolve. This allows us to act where action is needed now, while avoiding premature or excessive investment, including the risk of stranded assets or regret expenditure, where a staged response provides better long-term value.

Case Study: Tantivy Street Wastewater Pumping Station upgrade

Against the elevated and variable wet weather conditions described above, the $26 million Tantivy Street Wastewater Pumping Station upgrade at Tivoli, near Ipswich, delivered between 2023 and 2025, demonstrates how we have incorporated climate resilience into the renewal of a critical wastewater asset.

The original station was constructed in 1941 and had reached the end of its serviceable life after more than 80 years in operation. It transfers wastewater to the Bundamba Wastewater Treatment Plant on behalf of around 33,000 people, in a catchment expected to grow to approximately 60,000 equivalent persons by 2046. The station was also located in one of the more flood exposed parts of our network, adjacent to the Bremer River floodplain. This meant that an end-of-life asset, providing an essential wastewater transfer function for a growing community, was exposed to a foreseeable and increasing service resilience risk.

Tivoli was significantly affected by the 2011, 2013 and February 2022 flood events. The modelled 1% Annual Exceedance Probability flood level reached around the level of the original station's above ground structure, leaving the electrical switchboard and control equipment exposed to potential inundation. These are the components most likely to disable the station during a flood event. The system also had limited emergency storage, reducing its ability to absorb the high inflows that occur during intense and prolonged wet weather, when inflow and infiltration place additional hydraulic stress on the wastewater network.

A flood driven failure of the station would have had significant consequences. It could have interrupted an essential service to the Tivoli community, increased the risk of uncontrolled wastewater overflows to the Bremer River and surrounding sensitive habitat, and placed pressure on our ability to maintain environmental compliance during major wet weather events. It would also have increased recovery costs and created additional operational demands at the same time as other parts of the network were likely to be under wet weather stress.

Our response was to renew the station in a way that addressed current asset condition, future growth and flood resilience within a single integrated project. The new station's switchboard and control equipment were mounted on a 4.6 meter elevated platform, above the modelled 1% Annual Exceedance Probability flood level. This provides additional freeboard against flood events that may exceed current modelled levels as rainfall intensity and flood risk change over time. At the same time, the emergency overflow level was raised and six upstream maintenance holes were lifted, increasing in system emergency storage and reducing the risk of overflows during high inflow conditions.

The investment was prudent because it addressed an end-of-life critical asset in a high consequence location before failure occurred. It also reduced a foreseeable flood resilience risk, supported continued wastewater service reliability for a growing catchment, and strengthened our ability to manage wet weather impacts on the network.

The investment was efficient because renewal, compliance, climate resilience and growth needs were coordinated through a single project rather than being addressed through separate interventions. The existing station remained operational during construction, avoiding the need for a costly temporary bypass, and additional emergency storage was created within the existing network rather than through new dedicated storage. The project therefore reflects our broader planning approach that where climate risk is material, we seek to incorporate resilience at the right time in the asset lifecycle, using the least cost practical solution that protects service outcomes over the long term.

The renewed Tantivy Street Wastewater Pumping Station now provides a more reliable and resilient wastewater service for the Tivoli community, with capacity and flood protection designed for the future conditions we need to plan for across South East Queensland.

3.8 Service obligations, customer outcomes and affordability

The capital program exists to enable the delivery of safe, reliable and affordable water and wastewater services to 1.6 million customers across South East Queensland. Every investment decision is justified by reference to the service outcomes it protects or enables, and every dollar spent is required to be traceable to a defined need. This section sets out how we connect our corporate strategy to capital investment, how service standards and regulatory requirements shape investment priorities, and how public health, environmental, safety and customer considerations are embedded throughout the investment planning process.

Our corporate strategy for FY25 to FY29 is framed by our purpose to *Enrich Quality of Life*, led by three mutually reinforcing strategic priorities (Safe and Efficient Water Services Every Day, Build Trust, and Shape and Grow Our Future) and measured against five Critical Outcomes: Safety, Public Health, Environment, Experience, and Value. Asset management objectives, service level targets, investment priorities and capital program composition are each derived from this strategic framework.

The linkage between corporate strategy and asset management decision-making is documented in the Asset Management Framework (AMF). Table 8-1 of the AMF maps each Asset Management Objective directly to the *Critical Few* strategic priorities and their focus areas; Safety to managing asset risks within risk appetite and maintaining safe and compliant assets; Build Trust to minimising service disruptions and ensuring total cost of ownership considerations inform all lifecycle decisions; and Shape and Grow Our Future to robust lifecycle planning, decommissioning, continuous improvement and ESG integration[7]. This mapping means that every asset management decision can be tested for alignment with corporate strategy at the point it is made.

The strategic objectives of the business are cascaded from the Board-endorsed Statement of Strategic Intent (SOSI) through to Annual Operating Plans, departmental group plans and individual performance plans[8]. This cascade ensures that the people making capital planning decisions at every level of the organisation are working to targets that connect back to the same strategic outcomes. The Board exercises its reserved powers to approve the SOSI, the Annual Operating Plan and the annual Capital Investment Plan, meaning the overall shape and direction of the capital program is confirmed by the Board against strategic outcomes each year[9].

At the investment level, every business case must demonstrate linkage to the Critical Few priorities and address all five Critical Outcomes (Safety, Public Health, Environment, Experience and Value) as a mandatory requirement of the business case template[10]. The QCA's investment driver categories (Growth, Renewal, Compliance, Efficiency and Service) are embedded in the same template, with the explicit statement that if an investment does not relate to one or more of these drivers it is not prudent. Together, these requirements mean that every capital investment entering the program has been evaluated against both our own strategic priorities and the QCA's prudency test before it is approved.

3.9 Customer expectations and service standards

We serve 1.6 million customers across five local government areas, ranging from dense metropolitan communities to dispersed regional customers with different service needs and cost sensitivities. Our capital investment decisions take account of customer expectations alongside technical performance requirements, regulatory obligations, asset risk and long-term affordability Customer insights help us frame service outcomes, test investment trade-offs, and explain the value our investment decisions deliver, including their effect on service risk and customer bills over time.

3.10 Voice of Customer and service standards

Our Voice of Customer (VoC) program provides structured insight into customer expectations and service priorities. Customers have consistently identified reliable water and wastewater services, proactive communication during disruptions, and affordable bills as their primary expectations. These expectations are reflected in the way we assess investment need and in the affordability weighting embedded in our asset management multi-criteria assessments and portfolio optimisation scenarios.

Customer service standards are formally established in the Customer Charter, the SEQ Customer Water and Wastewater Code and the service level objectives in the NetServ Plan. These instruments set measurable performance expectations, including interruption durations,

---

[7] Urban Utilities, Asset Management Framework (AMF), Section 8.1, Table 8-1
[8] Urban Utilities, Asset Management Framework (AMF), Section 3.2
[9] Urban Utilities, Delegation of Authority Manual (MAN3), Corporate Strategy and Capital Investment Plan reserved powers.
[10] Urban Utilities, Gate 2 Solution Identification and Gate 3 Delivery Business Case Template (TEM705); Urban Utilities, Gate 3 Delivery Business Case for Framework Contracts (TEM665).

restoration times, and water quality complaint targets, against which service performance and capital investment outcomes can be assessed. Performance is also tracked through defined KPIs in the Statement of Strategic Intent and Annual Operating Plan[11].

Current performance against these standards provides an important baseline for the capital program. Water main breaks are within corporate targets, unplanned interruptions per 1,000 properties comparing favourably against peer utilities and water quality complaints remain among the lowest of major Australian water utilities. Trust reached 65% in FY25, its highest recorded level, and value for money perceptions have improved despite ongoing cost-of-living pressures. These outcomes show that the existing asset base and investment program have supported strong customer outcomes to date, while also underlying the need to continue investing to maintain performance as the network grows, ages and faces more complex environmental and climate pressures.

For the FY28 to FY30 pricing submission, we supplemented these ongoing customer insights with targeted engagement on the capital program itself. Through the Customer and Community Reference Group's Pricing Submission Working Group, customer representatives were asked to test the investment approach, including the portfolio prioritisation scenarios and the trade-offs between affordability, service, risk and timing. This engagement provided an additional customer perspective on the balance of the proposed program and has informed both our consideration of investment trade-offs and how the program is explained in this submission. This engagement, the challenges raised by customer representatives and how we responded are discussed further in Section 4.6.

4 Part 3 - How we plan, prioritise, govern and assure investment

This Part explains how we convert identified service needs into a prudent and efficient capital program. It demonstrates that:

1. Investment needs are derived from long-term, evidence-based asset and integrated planning architecture
2. competing needs are prioritised within an affordability-constrained envelope using consistent cost, risk and performance logic; and
3. individual investments are progressively tested through business cases, capital challenge, gateway governance and independent assurance.

4.1 Asset Management system and long-term planning architecture

Our capital program is the structured output of a long-term planning architecture that connects strategic intent to near-term investment decisions through a defined hierarchy of plans, each operating at an appropriate time horizon. This architecture ensures that every planned investment can be traced to an identified service need, that investment timing reflects both risk and affordability, and that the program as a whole is optimised across competing priorities.

[11] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Appendix G

Our capital planning is governed through a formal Asset Management System (AMS) structured in alignment with the principles of ISO 55001:2014 *Asset Management System – Requirements*, and guidance published by the Institute of Asset Management (IAM)[12] (Figure 19). We have not pursued formal certification against the standard. The AMS has instead been structured to be fit for purpose for our specific operating context, reflecting an outcome-focused and proportionate approach to adopting good industry practice. The AMS has also been subject to independent third-party asset management practitioner review, which confirmed its alignment with good industry practice and the principles of SIO 55001:2014.

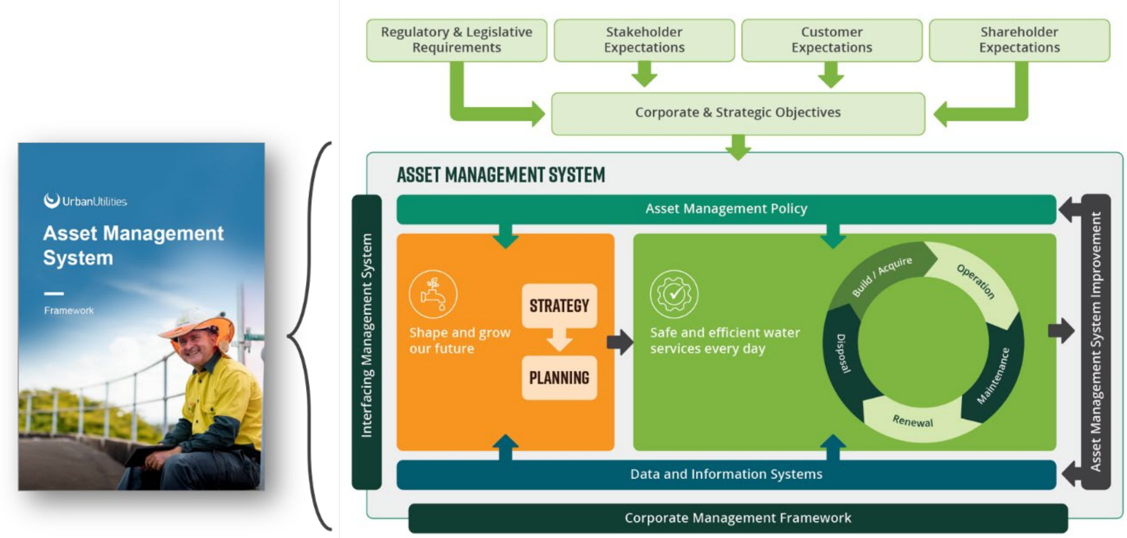


Figure 19 Asset management approach

The AMS is implemented through the Asset Management Framework (AMF), which translates the Board-approved Asset Management Policy into operational practice through a document hierarchy: Policy, Standards, Manuals, Standard Operating Procedures and Work Instructions, and Forms and Templates, with data and information underpinning every level (Figure 20)[13]. The AMF spans eight functional domains that together cover the full capital planning and asset lifecycle: Budget Planning and Financial Management; Servicing Planning; Integrated Planning; Capital Delivery; Asset Operations; Maintenance Integrity and Execution; Data and Information Management; and Resourcing and Technical Competency.

[12] Urban Utilities, Asset Management Framework (AMF), Section 1.4
[13] Urban Utilities, Asset Management Framework (AMF), Section 5

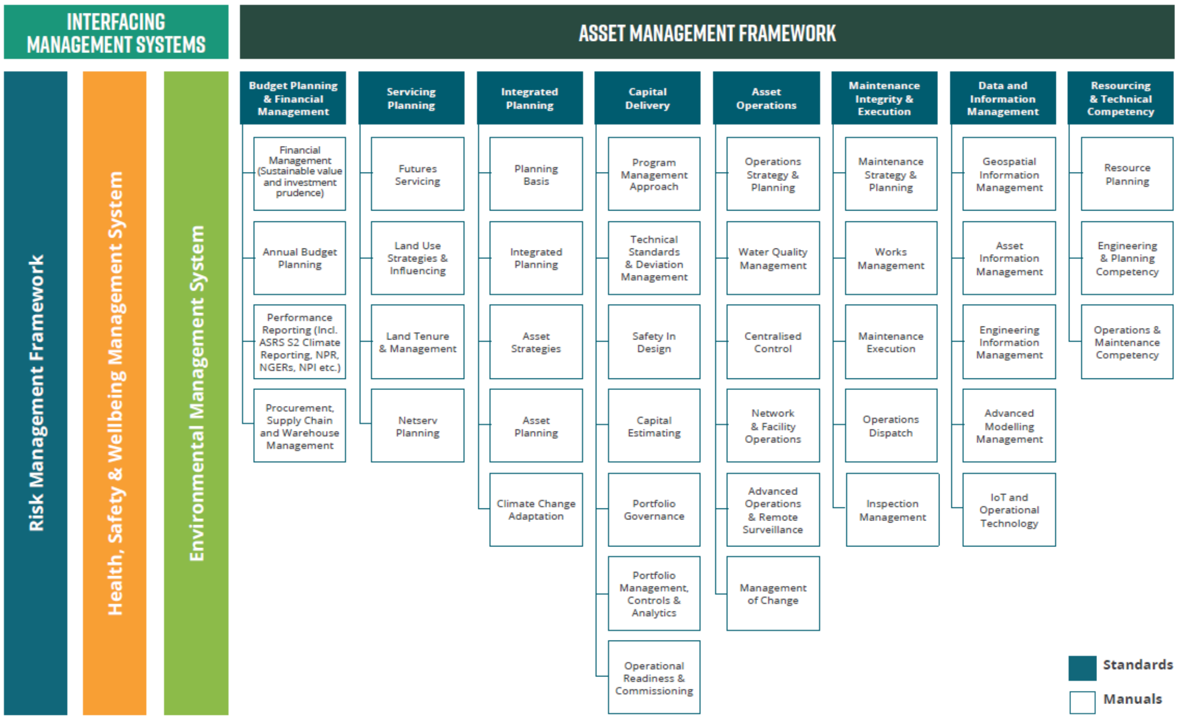


Figure 20 Asset Management Framework

The objectives of the AMS are established in the AMF and are explicitly mapped to our corporate strategy through the organisation's three *Critical Few* strategic priorities[14]. The asset management objectives aligned to each priority are set out below:

Safe and efficient water services every day- focused on delivering safe, reliable and compliant services:

- asset related safety risks are managed within our risk appetite;
- assets are designed, constructed, operated and maintained in a safe and compliant manner; and
- assets are reliable and robust to deliver required service standards.

Build trust – focused on customer experience, engagement and affordability:

- service disruption events are minimised and repeat disruptions mitigated;
- customers and stakeholders are engaged to integrate their feedback and insights into asset management decision making; and
- total cost of ownership is known for existing assets and considered in all lifecycle decisions, supporting long-term affordability.

Shape and grow our future- focused on long-term planning, capability and sustainability:

- decision-making criteria for the asset lifecycle reflect Our Water Way pillars

[14] Urban Utilities, Asset Management Framework (AMF), Section 8.1, Table 8-1

- asset lifecycle planning is robust and current to support informed decision making;
- a decommissioning strategy is in place to manage asset liabilities at end of useful life;
- We partner with stakeholders to identify and deliver water cycle and system-level solutions to address problems in its catchments and zones;
- asset management processes are continuously improved and matured;
- staff and contractors have the capability to undertake their asset management roles; and
- Environment, Social and Governance (ESG) reporting drivers are integrated into asset management processes.

Each objective is measurable and tracked with targets established through the Strategic Asset Class Planning and Integrated Planning processes and cascaded into asset lifecycle delivery[15].

4.2 Planning horizons

We structure our planning across three interconnected horizons, each serving a distinct purpose in the overall investment planning process[16].

Long-term horizon: Strategic Asset Class Plans (SACPs) set the long-term renewals investment strategy for each major asset class across the service area, typically spanning 30years and incorporating total cost of ownership analysis, demand forecasts, regulatory drivers, climate resilience considerations and interdependencies with local government land-use planning[17]. Using the Enterprise Decision Analytics (EDA) platform, SACPs develop optimised 30-year renewal forecasts based on asset register data, condition ratings, assumed useful lives and replacement costs, with modelling logic applied to balance risk, cost and performance outcomes[18]. SACPs provide the strategic direction and Gate 1 input for funding decisions and form the technical and economic evidence base for long-term investment profiles.

Intermediate horizon: Integrated Catchment Plans (ICPs), Integrated Zone Plans (IZPs) and One Water Plans (OWPs) translate long-range planning into 20-year pathways for meeting future demand, compliance obligations, risk and resilience requirements. Facility Management Plans (FMPs) operate at the individual site or facility level with a 10-year focus, profiling the asset composition, condition and performance history of critical facilities such as treatment plants and pump stations and developing targeted investment and maintenance priorities. Asset Class Plans (ACPs) take the high-level SACP direction and translate it into a 10-year view of renewal and upgrade needs for specific asset classes, aligning directly with the Capital Investment Plan (CIP)[19].

Near-term horizon: The Capital Investment Plan (CIP) is a rolling 30-year plan that documents and prioritises investment requirements across the full portfolio. Its primary

[15] Urban Utilities, Asset Management Framework (AMF), Section 12.2, Table 12-1
[16] AMF Integrated Planning Manual (MP-DOC-0002082-01), Section 6.10
[17] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Sections 6.1 and 6.5.
[18] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Section 6.10
[19] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Section 6.10

operational use is for annual budget approvals, five-year forecasts, this regulatory submission, and long-term financial planning[20].

SACPs define what needs to happen and why over the long term. ACPs, FMPs, ICPs and IZPs determine how and when those needs will be met in the near to medium term.

Demand forecasting

Demand forecasting informs both the need for growth-related infrastructure and the timing of capacity augmentation across the network. Our approach to demand forecasting is addressed in detail in Annexure 3 – Demand Forecast. Population growth and demand forecasting datasets inform future network and treatment capacity requirements across a range of growth scenarios and are incorporated into integrated planning through Hydraulic Network Models, Process Models and Water Balance Models that assess system performance against planning design criteria[21].

Lifecycle modelling

Our asset management decision-making is structured around whole-of-life cost optimisation[22]. The AMF defines asset management decision-making parameters that include lowest lifecycle cost (capital and operating cost), best customer value (service performance and affordability), multi-criteria analysis across safety, operability, reliability, maintainability, environment, public health, service and cost, and CAPEX versus OPEX trade-off analysis. Investment decisions therefore consider the full cost trade-offs of different intervention strategies, including where accepting higher maintenance costs to defer capital investment is preferable to earlier capital expenditure, and where capital investment reduces long-term operating costs.

At the asset class level, lifecycle modelling is undertaken using the Enterprise Decision Analytics (EDA) platform, which conducts scenario optimisation runs across various investment options to identify cost-effective strategies that manage risk and ensure service reliability. The EDA model projects total expenditure (TOTEX) cost profiles across scenarios, enabling comparison of capital and operating cost trade-offs over a 30-year horizon. Asset deterioration modelling (incorporating historical failure data, condition ratings, material type, age and location) underpins the likelihood-of-failure estimates used in the risk models and investment prioritisation tools[23]. Strategic Asset Class Plans serve to provide the technical and economic basis for the long-term investment placeholders maintained within the Capital Investment Plan (CIP) and define the preferred strategic renewal investment scenario for cascade of renewals investment priorities into Integrated Planning and Asset plans.

The preferred asset management strategy and optimised long term investment profile for a given asset class is then provide the evidence base for renewal investments within Integrated Plans, Facility Management Plans and Asset Class Plans[24].

Considering capital and operating expenditure together

This whole-of-life approach means capital and operating expenditure are considered together when determining the most prudent and efficient way to achieve a required service outcome. The appropriate balance depends on the nature of the need and becomes progressively more

---

[20] Urban Utilities, Gateway Decision Process for Infrastructure Capital Works (PRO370), Section 2.3
[21] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Table 13-1.
[22] Urban Utilities, Asset Management Framework (AMF), Section 8.3
[23] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Section 6.10
[24] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Integrated Planning Functions diagram.

detailed as an investment moves from long-term asset and system planning through options assessment, design and delivery.

At the strategic level, asset planning considers the long-term balance between renewal, maintenance, condition assessment and other interventions. Strategic Asset Class Plans establish the long-term direction for managing major asset classes, which is translated through Asset Class Plans and Facility Management Plans into more detailed investment and maintenance priorities. These processes seek to balance cost, risk and performance across the asset lifecycle rather than defaulting to capital replacement.

As described in Section 3.2, lower-risk network assets are not renewed solely because they have reached a particular age. Where service and asset risk remain acceptable, continued monitoring, condition assessment, maintenance or responsive repair may provide the lower sustainable lifecycle cost and allow capital renewal to be deferred. As condition deteriorates or the likelihood or consequence of failure increases, capital renewal may become the more prudent response. This allows the timing of investment to reflect the lowest sustainable whole-of-life cost rather than minimising either capital or operating expenditure in isolation.

Integrated planning applies the same principle at a system, catchment or zone level. Infrastructure and non-infrastructure responses to growth, compliance, renewal, service and resilience requirements are considered in developing the preferred investment pathway, having regard to total cost, performance, risk and uncertainty.

These considerations continue as individual investments are developed. At Gate 2, feasible options are assessed, including operational, non-infrastructure, staged and interim responses where applicable, with lifecycle costs considered alongside service, risk and other relevant criteria. At Gate 3, the preferred solution is developed in greater detail and its capital and operating cost implications are refined. Gate 4 provides further cost assurance and validation of the price to deliver the approved solution. The gateway process and options assessment are described further in section 4.7.

Consequential operating expenditure associated with capital investment, such as changes in energy, chemicals, maintenance, labour or other operating requirements, is identified and progressively refined as the solution develops. These impacts are incorporated into Urban Utilities' business planning and operating expenditure forecasting processes. The process for identifying and incorporating consequential operating expenditure arising from capital projects into budgeting and forecasting is described further in section 4.7 and Figure 24.

We continue to improve the consistency and integration of total cost of ownership information across our asset planning, capital investment and business planning processes, strengthening the connection between long-term asset strategies and consequential operating expenditure.

4.3 Data inputs to asset management decisions

Effective asset management planning requires a current and reliable understanding of the condition, performance and failure history of the asset base. We collect and maintain this evidence base through structured programs and systems that provide the foundation for risk-based investment decisions.

Condition data is gathered through the Enhanced Condition Assessment Program (ECAP), which provides structured, risk-based inspection of critical assets in accordance with our

Condition Assessment Manual and IPWEA Practice Note 7[25]. Condition assessments are prioritised based on asset risk rating, age, criticality, location and the cost-benefit of inspection, ensuring that inspection resources are directed where they will have the greatest impact on risk reduction. Condition assessment outputs are recorded in the Enterprise Asset Management System (Ellipse 9), providing a traceable record of structural condition, remaining life estimates and recommended intervention[26]. Condition ratings inform asset likelihood of failure assessments and underpin our semi-quantitative risk models, which are used to prioritise asset renewal investment. Field based condition data is also used to refine the deterioration curves that inform long-term renewal forecasting, supporting evidence-based decisions about when assets should be renewed and helping to maximise useful asset life.

Performance data is captured continuously through operational monitoring and maintenance management. All maintenance activities, both preventive and responsive, are documented in Ellipse, including failure, cause and remedy codes that enable systematic analysis of asset performance over time[27]. SCADA systems and IoT devices provide real-time operational monitoring across the network, supporting early identification of performance deterioration and enabling targeted maintenance responses. We track key performance metrics across key asset classes, including water main breaks per 100 kilometres and unplanned interruptions per 1,000 properties for the water network, measured against defined corporate targets, providing a consistent, time-series evidence base for assessing network performance trends.

Failure trend data feeds directly into deterioration modelling and renewal prioritisation. Historical work order data from Ellipse, including failure frequency, failure mode and asset characteristics such as material, age, diameter and location, is used to develop the statistical likelihood models that underpin the semi-quantitative risk models and the EDA platform[28]. This supports a data-driven approach that predicts where and when failures are most likely and prioritises investment accordingly. The Water Pressure Mains SACP illustrates this approach with EDA modelling using historical failure data across 9,750 km of mains being used to identify extreme-risk assets warranting proactive renewal and to quantify the cost and risk consequences of alternative investment strategies over a 30-year horizon[29].

These condition, performance and failure trend inputs connect the observed state of our infrastructure to forward-looking investment decisions, ensuring that capital expenditure is directed where it is needed, and that renewal decisions are proportionate to risk.

Sustaining the quality of asset management decision-making depends on continued investment in the underlying digital systems and platforms, including EAMS, SCADA infrastructure, IoT networks, risk modelling tools and the EDA platform, that are maintained and developed by our Digital & Information function. The role of digital infrastructure in enabling effective capital planning and delivery is addressed further in Annexure 6 - Digital and information investment.

4.4 Working with stakeholders to optimise investment decisions

We incorporate stakeholder input into investment planning through structured engagement with regulators, local government, state government agencies, bulk water providers and other

[25] Urban Utilities, Asset Management Framework (AMF), Section 9.3; AMF Standard-Maintenance Integrity and Execution.
[26] Urban Utilities, Asset Management Framework (AMF), Section 9.3
[27] Asset Management Framework (AMF), Section 9.3
[28] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Table 13-1
[29] Urban Utilities, Water Pressure Mains Strategic Asset Class Plan (D/25/830340), Sections 3.1, 5.2–5.5

relevant parties. This engagement helps identify constraints, test assumptions and evaluate the wider impacts of potential investments. Stakeholder input informs our analysis, while investment decisions remain subject to our planning, assurance and governance processes.

Stakeholder objectives are not always aligned. Environmental protection, growth servicing, waterway health, climate resilience, land-use planning, affordability and customer bill impacts can each point towards different investment pathways. Our planning processes and engagement with stakeholders make these tensions explicit and use technical, environmental and economic analysis to assess the costs, benefits, risks and trade-offs associated with alternative options.

The Ipswich Integrated Water Management (IWM) program provides a recent example. The program was established in response to rapid population growth, environmental constraints within the Bremer River catchment, climate resilience requirements and the need to maintain long-term affordability. Over a twelve-month period, we worked with [redacted] and technical specialists through a series of workshops supported by multiple technical studies.

Engagement to date has focused on the government, agency and technical stakeholders needed to establish the strategic servicing options and understand the key planning, environmental and infrastructure constraints. Direct customer engagement has not yet been undertaken because the program is not at the stage where the implications of the alternative pathways can be meaningfully tested with customers. As the program progresses through subsequent planning and development stages, customer engagement will form part of the process., including testing relevant customer outcome considerations.

The process enabled stakeholders to identify key constraints and opportunities, and examine alternative approaches to servicing options. Stakeholder input informed the assessment of potential treatment plant locations, discharge strategies, recycled water opportunities, infrastructure staging and long-term environmental outcomes. This established a clearer understanding of the feasible servicing pathways and the consequences of each.

The assessment showed that some options offered stronger environmental and recycled water outcomes but involved materially higher infrastructure and operating costs, with corresponding affordability implications. Other options were less costly but provided fewer environmental, resilience or long-term flexibility benefits. These alternatives were assessed against their expected service outcomes, environmental benefits, costs, implementation risks and impacts on customers.

The preferred pathway was identified as the option that achieved an appropriate balance between these competing objectives. It improves effluent quality, strengthens system and flood resilience, reduces environmental impacts and preserves opportunities for future recycled water use, while maintaining a more affordable outcome than higher-cost alternatives. Investments associated with the preferred pathway are reflected in the forward capital program, including the Walloon to Wulkuraka sewer, Bundamba WWTP intensification and land purchase and early works for expanded WWTP capacity in Ipswich. The Ipswich program demonstrates how stakeholder input is combined with technical and economic evidence to inform balanced, transparent and prudent investment decisions.

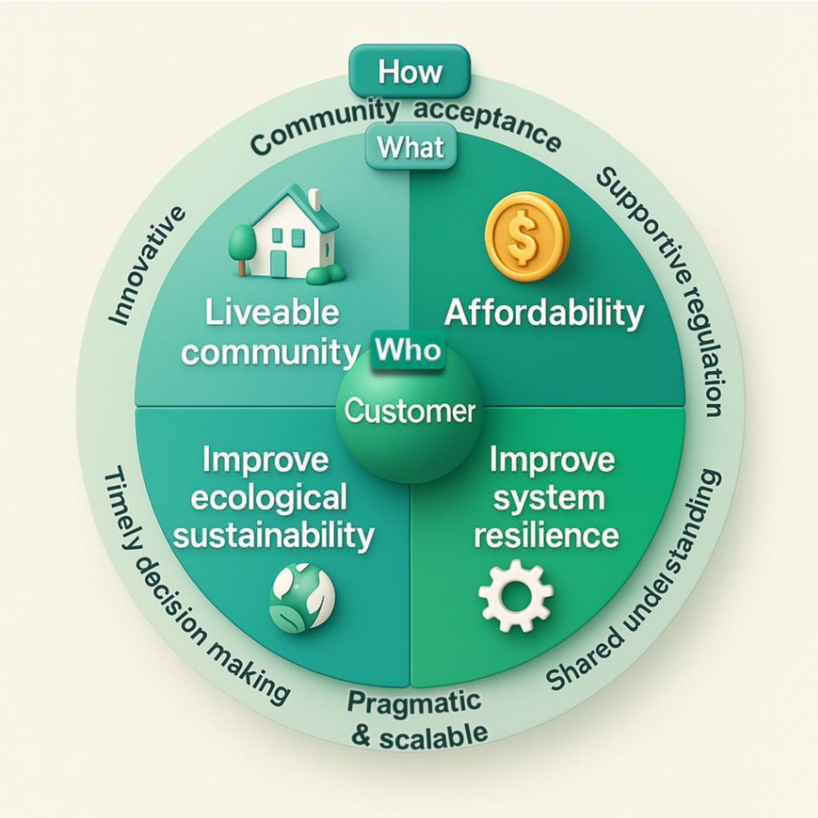


Figure 21 Collaboratively Agreed Shared Outcomes to Achieve for Ipswich

4.5 Risk -based prioritisation and portfolio optimisation

We plan our capital program within an affordability-constrained, Board-approved investment envelope. The key prioritisation question is therefore not whether every identified need has merit, but which investments should proceed now, which should be deferred or resequenced, and what risk is accepted by doing so. We answer that question through a consistent cost-risk-performance decision framework. Each intervention is categorised by investment driver, service-risk severity, critical outcome, maturity and deliverability. The logic is applied at two levels. First, it is applied within each integrated plan, asset class and project pathway to determine the scope, timing and sequencing of individual interventions proposed for the portfolio. Second it is applied across the full portfolio to test the overall program against the available investment envelope and to determine the optimal mix of investments within that constraint.

4.5.1 A decision logic: a consistent order of precedence

Not all investment is equally discretionary. We classify each intervention by its primary investment driver using the QCA's drivers of growth, compliance, renewal, efficiency and service, and prioritise in a consistent order of preference that reflects how much discretion we have over the need, timing and scope of investment. That order of precedence does not mean that any category is automatically funded. It means that the non-discretionary nature of the underlying need is recognised first, and the capital response is then tested for prudency, efficiency and value for money.

1. **Compliance and growth: prioritised first, then scoped and timed prudently**

Compliance and growth needs are prioritised first because they relate to regulatory, licence and servicing requirements. For compliance, the discretion is not whether the obligation must be met, but how it is met and what scope represents the prudent and efficient response. Compliance investment may be required to discharge obligations such as environmental authority conditions, wastewater discharge limits, drinking water quality requirements and other emerging regulatory standards. This aligns with the Board-approved Risk Appetite Statement (PRO665), which records a low appetite for environmental non-compliance and no appetite for risks to safety and public health.

For growth, our role is to enable development and service new customers through a combination of Urban Utilities delivered infrastructure and assets delivered by the development industry and donated into our asset base. Developer-delivered assets are managed through our standards, review and acceptance processes, while we remain responsible for planning and delivering trunk infrastructure and capacity upgrades to the existing network where growth triggers the need for broader system augmentation.

The main investment discretion for growth is therefore one of timing, staging and coordination. Capacity is added when demand, development sequencing and network triggers justify it, avoiding both premature investment in idle capacity and late investment that creates service, development or operating risk. This requires alignment between developer-delivered infrastructure and our own trunk augmentation program.

That alignment is supported by the Water Netserv Plan, which sets out the staging of growth-related water and wastewater infrastructure over a 20-year planning horizon and is a key compliance and servicing planning instrument. The Water Netserv Plan underpins water approvals and infrastructure agreements and helps guide how developer-delivered assets connect to, and are integrated with, our existing asset base. Timing is also informed by customer demand and the development priorities reflected in State and local government planning instruments, which are required to be considered in the Water Netserv Plan.

2. **Efficiency: value for money enablers**

Efficiency investment is prioritised where it demonstrates a clear value-for-money case and supports lower long-term costs, better asset decisions or improved delivery performance. It is not treated as automatically higher priority than obligation-led expenditure, and must compete for funding based on the strength, certainty and timing of its benefits.

Within the infrastructure capital program, stand-alone efficiency investments are comparatively limited because most investment is driven by growth, compliance and renewal needs. Efficiency capital expenditure is directed primarily towards digital and information related investments, delivered through the Digital and Information program and described in the Digital and Information investment annexure (*Annexure 6*). Infrastructure efficiency opportunities, such as energy optimisation, resource recovery or co-generation, are considered where they can deliver reliable benefits. However, they are subject to careful scrutiny because they can involve technical complexity, operational integration requirements, long payback periods and benefits that may be more marginal or uncertain than the underlying service obligation.

Efficiency investments are therefore prioritised where they achieve a positive value proposition, reduce whole of life cost, improve asset intelligence, enable more targeted renewals, support real time monitoring and control, or materially improve deliverability of the broader capital program. This includes relevant Digital and Information data, monitoring and analytics capability where it strengthens condition and performance data and improves investment decisions. This aligns with the Risk Appetite Statement, which records a high appetite for technologies that improve operational efficiency and no appetite for expenditure that does not demonstrate value for money.

3. **Renewals and service: the primary optimisation levers, prioritised by risk and performance**

Renewal and service driven investments are the primary optimisation levers within the Board-approved investment envelope. They are sequenced carefully, rather than deferred as a broad category, because poorly targeted deferral can increase service, safety, environmental and customer risk.

Renewal investment is prioritised by asset and system risk, with the strongest priority given to assets and systems where condition, performance, consequence of failure and likelihood of failure indicate an extreme or high service risk. For the current portfolio, this means focusing renewal investment on residual service risks with a rating of 21 or greater on our enterprise risk matrix, assessed over a rolling ten-year horizon and revisited at asset class level as new condition, performance and risk information becomes available.

Service driven investments are also prioritised using evidence of risk and performance need. For example, investments required to sustain fire-fighting flow and pressure requirements in line with Queensland Government guidelines are hydraulically modelled, field verified and optimised before they are prioritised for delivery. These investments are also tested against alternative or complementary responses, including ongoing maintenance, field testing and targeted rectification programs, to confirm the most prudent and efficient intervention.

Lower-rated renewal and service investment may be deferred, resequenced or managed through operating and maintenance responses where this remains consistent with the Risk Appetite Statement. The residual risk is documented, monitored and revisited through annual and adaptive portfolio management processes. This approach balances customer affordability with our low tolerance for risk on critical service outcomes.

HOW WE DECIDE WHAT TO FUND WITHIN THE AFFORDABLE ENVELOPE

THE SAME COST–RISK–PERFORMANCE LOGIC IS APPLIED AT THE PORTFOLIO LEVEL AND WITHIN EACH INTEGRATED PLAN

Inputs that set the target and the envelope

Strategic alignment
Screens what projects and programs enter the process

Level of service
The benchmark risk is measured against

Customer and community
Value and affordability

Identified investment need exceeds the affordable, Board-approved envelope
A structured trade-off is required — what proceeds now, what is deferred, and what risk is accepted

Every intervention is categorised across multiple lenses
- Investment driver (growth · compliance · renewal · efficiency · service)
- Level of Service and Service-risk severity (Extreme / High ≥21 / Medium / Low)
- Critical outcome (safety · public health · environment · experience · value)
- Maturity and deliverability

A consistent decision framework

what is obligation-driven, what enables, and what is optimised

1. PRIORITISED FIRST

Compliance and Growth
Regulatory Requirements driven: legal, licence and servicing needs. The need is non-discretionary, but scope, timing, standard and pathway are still tested for prudency and efficiency

2. THE ENABLER

Efficiency (incl. D&I)
Not automatically prior to other spend. Funded on value for money where it lowers whole-of-life cost, sharpens the targeting of renewals or improves deliverability of the broader program

3. PRIMARY OPTIMISATION LEVER

Renewals and Service — by risk
Strongest priority where condition, performance, consequence and likelihood indicate Extreme or High risk (≥21). Lower risk deferred or resequenced within appetite; revisited at asset-class level

Bracket the cost–risk trade-off with three scenarios

Scenario 1, All Investment
- Highest cost
- Beyond appetite/value

Scenario 2, Balanced (preferred)
- Most affordable that resolves Extreme and High risk

Scenario 3, Minimise Renewal
- Cheapest now
- Risk beyond appetite

Selected through governance: IC → SAMC → AFRC → Board
Board adopted Scenario 2, Balanced Investment on 26 May 2025

Constraint cascades to integrated planning — ICP · IZP · SACP
Each plan develops its recommendation within the Scenario 2 envelope, using a Do-Nothing / Optimised / Full-scope test that mirrors the scenarios

Prioritisation does not stop at planning
Each intervention progresses through the Capital Gateway Process and the Capital Project Challenge Process — scope, cost, timing and benefits are retested as information improves and the project moves through the gate stages

Figure 22 Capital prioritisation process

4.5.2 Determining the investment envelope

At the whole of portfolio level, we applied a structured optimisation process to determine the appropriate ten-year investment envelope. The portfolio was rebuilt and validated, each investment was categorised, scenarios were grouped and analysed, the capital forecast was optimised under each scenario, and a preferred portfolio was selected. Investments were categories across several lenses simultaneously: investment driver; service-risk severity (extreme, high≥21, medium and low); critical outcome (including public health, environment, safety and customer and experience); and maturity and deliverability. This allowed cost, risk and service trade-offs to be tested wherever total identified need exceeded the affordable funding envelope.

Each intervention is built from the bottom up. Its service need, benefit, timing and driver are defined through Investment Logic Mapping, and a consequence and likelihood rating is applied under our Risk Management Procedure (PRO84). The interventions are then aggregated into three scenarios. We use three scenarios deliberately to bracket the realistic decision space and make the cost risk trade off explicit to decision makers, rather than presenting a single point estimate. The three scenarios span from maintaining service fully in line with current risk appetite, through resolving only the extreme and high service risks, to adopting a more aggressive residual risk position on critical outcomes. To avoid ambiguity, we refer to both the scenario number and title used in the Integrated Planning Manual

Table 4 Infrastructure capital investment scenarios and deferral outcomes

Scenario	Risk position	Customer affordability impact
Scenario 1 – all investment	Maintain service performance fully in line with current risk appetite; addresses service risks across all drivers, including those rated below the extreme/high threshold	Highest bill impact. Funds lower-priority (medium and low) risks alongside extreme and high risks, committing additional capital without a commensurate reduction in critical service risk. Least affordable of the three.
Scenario 2 – Balanced Investment (preferred)	Resolve extreme and high (≥21) service risks; compliance and growth needs prioritised; high-risk renewal prioritised, lower-rated renewal and service investment deferred or resequenced where consistent with risk appetite.	Manages the extreme and high risks that sit at or beyond risk appetite while maintaining affordability. Delivers the required risk reduction at the lowest cost consistent with the Board's risk appetite, balancing customer bills against critical service outcomes.
Scenario 3 – Minimise Renewal Investment	Minimise renewal investment and adopt a more aggressive residual service-risk position on critical outcomes, while protecting growth, public health, safety and compliance obligations. This scenario sits well outside the Board’s accepted risk appetite.	Lowest near-term bill impact, but accepts higher residual risk on critical outcomes (public health, safety, environment and reliability). Deferring renewal risks higher whole-of-life cost and increased customer and compliance risk in future periods.

4.5.3 Why Scenario 2, Balanced Investment was selected

Scenario 2, Balanced Investment, was selected because it is the most affordable scenario that resolves the extreme and high service risks that sit outside, or at the edge of our risk appetite, while avoiding expenditure on lower-priority risks that do not require immediate funding within an affordability-constrained envelope. Scenario 1, All Investment, was not adopted because it would commit additional capital to lower-consequence risks below the extreme and high threshold, increasing customer bills while delivering little additional risk reduction. Scenario 3, Minimise Renewal Investment, was not adopted because it would reduce near-term capital expenditure by accepting a higher residual risk position on critical outcomes, including public health, safety, environmental compliance and service reliability. Scenario 2 is therefore the option that best balances affordability, risk appetite and long-term customer value.

Customer affordability and pricing impacts were modelled for each scenario and presented to the Audit Finance Risk Committee, ensuring affordability constraints directly informed the choice. Portfolio optimisation and reprioritisation were considered across a sequence of governance forms including the Investment Committee and the Strategic Asset Management Committee before the Board adopted Scenario 2, Balanced Investment, as the basis for long-term capital planning.

Following its selection, Scenario 2, Balanced Investment, became the planning envelope for further optimisation. This produced the adopted hybrid position over the five and ten year planning horizons, which protects priority compliance and growth investment while focusing renewal and service improvement investment on extreme and high (≥21) risks only. Lower priority expenditure has been deferred or resequenced where this can be done without moving service risks outside our risk appetite.

Although this submission presents planned investment for the 2028-2030 price monitoring period, the capital program was not developed around that three-year period. It represents the near-term tranche of a risk-based ten-year investment portfolio. We plan to service needs and asset lifecycles, rather than to the boundaries of price monitoring periods. This is consistent with our Asset Management Policy, which requires a long-term, holistic and whole of life approach that balances cost, risk, performance, customer expectations and uncertainty and delivers services at the lowest sustainable cost. Our integrated planning framework similarly assesses preferred pathways across a longer time horizon by balancing cost, risk and performance, with portfolio optimisation used to allocate limited funding to the investments that provide the greatest service value.

The longer-term perspective is also how we keep bills as low as they prudently and sustainably can be, both during FY28 to FY30 and over the longer term. Considering the complete portfolio allows investment to be sequenced when it is needed, operational and delivery dependencies to be managed, and unnecessary early expenditure to be avoided. It also prevents short-term deferral from simply transferring greater costs or unacceptable risks to future customers. The FY28 to FY30 program therefore contains the highest-priority work that must proceed now, while lower-priority investment is deliberately deferred or resequenced to contain near-term bill impacts.

This approach is consistent with the feedback received through the CCRG (Section 4.6). Customer representatives challenged the necessity and scale of the program, sought confidence that lower-priority work could be deferred or stopped, and emphasised the importance of managing the bill trajectory the longer term. They also recognised that there is no zero-cost option if services are to remain safe and reliable. The adopted hybrid position within Scenario 2 responds to that feedback: it is aa disciplined, constrained investment pathway that balances the highest risks and obligations with affordability for current and future customers.

4.5.4 Applying the same logic within the program: worked examples

Following the Board's adoption of Scenario 2, Balanced Investment, our integrated planning and delivery teams were required to develop their recommendations within that constraint. Each plan tests its options using the same cost-risk-performance logic that operates at the portfolio level: a Do Nothing option, which has the lowest initial cost but carries a service risk that is not tolerable; an Optimised option which balances cost and risk by eliminating or materially reducing extreme and high risks over the planning horizon; and a Full Scope option, which renews or augments more broadly than the risk position requires and therefore may not demonstrate value for money. The Optimised option, the catchment-level equivalent of portfolio Scenario 2, is the option carried into the plan. The following examples, in response to URA's Part 1 findings (Theme 4.1 and 4.2) demonstrate this in practice.

4.5.4.1 Integrated Catchment Plan: Wynnum

The Wynnum sewer catchment serves approximately 43,000 equivalent persons (EP) and faces wet-weather performance challenges driven by inflow and infiltration, resulting in elevated uncontrolled overflows, emergency relief structure discharges to receiving environments and treatment regulatory challenges. These pressures reflect a mix of compliance, environmental and renewal drivers. The catchment's renewal options were tested against their resulting service-risk position. An optimised renewal forecast of approximately [redacted] in capital was preferred to both a Do Nothing option, which would leave intolerable service risks untreated, and a Full Scope option of approximately [redacted], which would renew assets based primarily on age regardless of risk and did not demonstrate value for money. The optimised option selected addresses the identified extreme and high risks and maintains that position over the 20 year planning horizon at a lower whole of life cost. This detailed catchment-level assessment was undertaken within the top-down direction established through Scenario 2, Balanced Investment. The Integrated Catchment Plan tested the need, scope, timing and risk reduction delivered by the proposed investment and confirmed that the preferred pathway aligned with the Scenario 2 prioritisation principles and affordability envelope. The approved investment was therefore incorporated into the Capital Investment Plan on that basis.

4.5.4.2 Integrated Catchment Plan: Goodna and Carole Park

The Goodna and Carole Park catchments together serve approximately 150,000 EP, forecast to grow to 250,000 EP by 2050. Growth is therefore a significant driver alongside renewal need. Consistent with PRO84, extreme and high risks are generally not tolerable while medium and low risks may be acceptable where appropriate. The planning analysis assessed the service risk consequences of different investment levels, allowing governance forums to select pathways consistent with the Board's risk appetite and the portfolio-level constraint established through Scenario 2, Balanced Investment. Renewal options for the Goodna Resource Recovery Centre (RRC) were assessed as Do Nothing [redacted], Optimised (approximately [redacted]) and Full Scope (approximately [redacted]). The equivalent options for the Carole Park RRC were Do Nothing [redacted], Optimised (approximately [redacted]) and Full Scope (approximately [redacted]). The Optimised pathways were preferred because they addressed the priority risks without incurring the substantially higher cost of the Full Scope options. The detailed catchment-level assessment tested the need, scope, timing and risk reduction delivered by the proposed investment and confirmed that the Optimised pathways aligned with the priorities and affordability constraint established through Scenario 2. The resulting investment was therefore reflected in the Capital Investment Plan on that basis.

4.5.5 Affordability in prioritisation and investment timing

Affordability is a formally embedded consideration in our capital planning processes. The AMF asset management decision-making parameters include "best customer value - service performance and affordability" as a primary decision criterion alongside risk and lifecycle cost[30]. The asset management objective of ensuring that total cost of ownership is known and considered in all lifecycle decisions is directly linked to the "Affordability" focus area under our *Build Trust* strategic priority[31].

At the portfolio level, we apply investment within defined capital expenditure envelopes, with the portfolio optimisation scenarios designed to test trade-offs between risk management and customer affordability under different investment pathways. At the asset class level, the SACP methodology incorporates financial sustainability and customer affordability as a weighted criterion in the multi-criteria assessment of investment scenarios. This is demonstrated in the Water Pressure Mains SACP where the affordability and financial sustainability criterion carried a 65% weighting in the evaluation of alternative renewals strategies[32].

Integrated plans also reflect affordability in investment timing. Each plan produces a 10 to 20 year TOTEX cost plan for the preferred adaptive servicing pathway with five-year CIP certainty. Investments typically beyond the five-year horizon are dependant upon performance triggers and are subject to periodic review, allowing investment timing to be adjusted as the financial position and risk environment evolve while the strategic intent of the long-term plan is maintained. The adaptive management process, involving annual review of catchment and zone performance against preferred pathway interventions, enables the business to re-sequence or defer investment in response to affordability pressures while maintaining visibility of the risk consequences of doing so[33].

Our affordability lens extends beyond the Urban Utilities component of the customer bill to the whole-of-bill outcome. As a distributor-retailer, we purchase treated bulk water from Seqwater and pass Seqwater's bulk water charges through to customers without mark-up. These charges are set by the Queensland Government, are subject to Ministerial discretion, and are outside our direct control. However, they represent around one third of a typical residential customer bill and are the largest external cost component recovered through our bills. While we do not determine the bulk water price path, our planning and demand management activities can influence some of the inputs that shape the timing and scale of future bulk water investment. We therefore treat the Seqwater interface as a relevant affordability consideration in prioritisation and investment timing.

The first interface is demand forecasting. We develop bottom-up demand forecasts on a bi-annual basis and provide these to Seqwater, which independently reviews and refines them for water resource, treatment and bulk transportation infrastructure planning. Because these forecasts help inform the timing and scale of Seqwater's water security investments, accurate and timely demand signals help reduce the risk of premature or oversized bulk water investment being recovered through future bulk water charges.

The second interface is integrated system planning. Our integrated planning framework is designed to consider the broader water cycle, rather than only the assets we own and operate.

---

[30] Urban Utilities, Asset Management Framework (AMF), Section 8.3.
[31] Urban Utilities, Asset Management Framework (AMF), Section 8.1, Table 8-1.
[32] Urban Utilities, Water Pressure Mains Strategic Asset Class Plan (D/25/830340), Section 5.6, Table 12
[33] Urban Utilities, AMF Integrated Planning Manual (MP-DOC-0002082-01), Section 6.12; Integrated Planning Process for Adaptive Management of Integrated Plans (V1).

Through planning alignment with Seqwater, we can identify where the most efficient intervention point sits across the water supply chain. In some cases, this may mean that a Seqwater-side intervention, a distributor-retailer network intervention, or a coordinated package of measures provides the lowest total water cycle cost. This helps avoid duplication, supports system-level service outcomes and places downward pressure on the long-term cost to customers.

The third interface is demand management. Investments such as pressure management, active leak detection, smart networks, metering improvements and water efficiency education reduce network losses and per-property consumption. These initiatives put downward pressure on our component of the bill and can also reduce or defer the need for future bulk water investment by lowering demand on the regional water supply system. Because these demand-side interventions are assessed within the same best-customer-value and affordability framework as other investments, prioritisation and timing decisions consider their whole-of-bill affordability benefit, including their potential to moderate long-term pressure on bulk water charges.

4.6 Customer engagement on the investment scenarios

We recognise that the linkage between specific customer inputs and individual investment decisions is still maturing. In direct response to the matters raised in URA's Phase 1 review, we have accelerated our customer engagement program. As an early step, we brought our planned capital program, and the prioritisation scenarios that underpin it, to the Customer and Community Reference Group (CCRG) for structured testing. This testing was undertaken with the CCRG through a dedicated Pricing Submission Working Group (PSWG), a five-member challenge group whose members bring experience across customer engagement, economic regulation, legislation and the needs of vulnerable customers. Established specifically to test and scrutinise our approach rather than to endorse it, the group was asked a deliberately direct question, aligned to the QCA's own test: *Is Urban Utilities' approach to FY28 to FY30 pricing prudent and efficient from a customer perspective?*

The engagement was structured, sustained and evidenced in that we worked through the program with the group across more than 45 hours and in excess of ten workshops, using a repeated cycle of educating, engaging, challenging, feeding back and demonstrating influence, with challenges and information requests logged and answered and group sentiment tracked through surveys and polls.

This section describes that engagement, what the group told us, and how it has influenced both the program and the way we explain it.

What we tested

For the FY28 to FY30 pricing submission, we worked through the questions that sit behind the capital program: what is in the plan, why is it needed, how choices have been made, how risk is managed, the role of the Brisbane 2032 Olympic and Paralympic Games, and what customers receive in return.

Central to this engagement, we tested the portfolio optimisation scenarios that underpin our capital prioritisation as outlined in Section 4.5.2:

- **Scenario 1 – All investment:** delivering all identified investment need, including lower-priority (medium and low) risks alongside extreme and high risks. This carries the highest bill impact of the three scenarios and commits additional capital without a commensurate reduction in critical service risk.

- **Scenario 2 – Balanced investment:** prioritising growth, compliance and renewal programs that address extreme and high risks, while deferring or resequencing lower-priority work where consistent with our risk appetite. This manages the risks that sit at or beyond appetite at the lowest cost consistent with that appetite, balancing customer bills against critical service outcomes.
- **Scenario 3 – Minimise renewal investment:** prioritising growth, public health, compliance, safety and extreme and high-risk projects, with renewal investment constrained. This has the lowest near-term bill impact, but accepts higher residual risk on critical outcomes and risks higher whole-of-life cost and increased customer and compliance risk in future periods.

Working through each scenario connected the engagement directly to the framework used to build the program, rather than discussing trade-offs in the abstract. Each scenario presented a different balance of risk, service, affordability and timing, allowing customer representatives to consider which risks were unacceptable, which investments could reasonably be delayed, and how affordability should be weighed against reliability, resilience, environmental protection and growth. We also tested how these priorities might shift under greater cost-of-living pressure, and where additional growth-related environmental investment became necessary.

What customers told us

Customer representatives engaged closely and did not simply endorse the program. Their feedback can be grouped around what they told us they need to see before they will support investment: that it is necessary, that it delivers visible value, that it is fair, that costs are controlled, and that it can be understood.

Necessity and scale. Representatives tested whether the program is proportionate, asking why it could not be smaller, whether every project is essential, and what happens if we do not invest. They wanted clear evidence of the consequences of deferral or failure, and of the projects and scope we have chosen not to pursue.

Value and service. Customers were clear that trust is already being affected by current performance, not only by future risk. Wastewater overflows into streets, parks and homes, together with odour and environmental incidents, were raised as issues eroding confidence today. Representatives expect investment to translate into fewer failures, better performance and tangible improvement, and to be explained in those terms rather than as a technical asset-management exercise.

Fairness and who pays. Equity was a prominent theme. Representatives questioned why existing customers should fund infrastructure required to service growth, particularly in high-growth areas such as Ipswich and the western corridor, and raised developer-contribution shortfalls and infrastructure funding gaps. They were concerned that water bills could become a political and media issue alongside energy prices, and emphasised the bill trajectory over time, not only the total cost of the program. Representatives also pressed us on protections for those least able to absorb increases, seeking stronger support for vulnerable and hardship customers, and asking whether the position of tenants, who bear bill costs but are not always direct customers, is adequately considered.

Control and value for money. Representatives looked for confidence that spending is disciplined: that strong governance and prioritisation exist, that lower-priority work can be deferred or stopped, and that productivity and efficiency gains, for example through digital investment, automation and better use of data, help offset cost increases.

Clarity. A consistent message was that the investment story is too complex. Representatives asked for plain-English explanations and a clear line from investment, to outcome, to bill impact. The most frequently repeated request was to translate the program into what it means for a customer's quarterly bill, the question customers most want answered.

The discussion also surfaced the central trade-off directly, with representatives asking whether we are over-investing to avoid risk, and whether more risk could reasonably be accepted to keep bills down. One representative, weighing this balance, observed:

[redacted]

This reflected a recognition, expressed across the group, that there is no zero-cost option. It sat alongside genuine challenge on scale, fairness and affordability, however, rather than uniform endorsement of the program as planned (as would be expected with a genuine customer consultation process of this nature).

4.6.1 How this engagement has shaped the program and its presentation

At this stage, customer input has influenced the program in two main ways, and we are candid that this linkage will continue to develop.

First, it has tested the balance of the program at a portfolio level. Working through the scenarios allowed customer representatives to weigh affordability, service reliability, resilience, environmental protection and growth against one another. In response to their challenge on cost-of-living pressure and growth-related environmental need, we tested additional scenarios to understand how the balance would shift, demonstrating that the engagement informed our thinking rather than simply confirming it. Where we did not adopt a view put to us, we have been transparent about why. The resulting program prioritises the investment required to manage the highest service, compliance, growth and renewal risks, while deferring or resequencing lower-risk expenditure where this can be done without unacceptable customer or community impact.

Second, it has changed how we explain the program. In direct response to the feedback above, this annexure places stronger emphasis on investment drivers, customer-facing benefits, risk-based prioritisation, fairness and who pays, affordability and bill impact, the discipline applied to spending, and the consequences of deferral. We have also prioritised clearer, plainer-English explanation, including beneficiary-pays information material on growth and developer contributions, and case-study evidence such as the S1 trunk sewer.

We recognise that we have not yet demonstrated a direct line from individual customer comments to individual project decisions. Consistent with the QCA Phase 1 findings, we are treating this as a work in progress are continuing to mature our approach and this discussed further in Annexure 2 Service Standards.

4.6.2 Continuing to mature our approach

The engagement described here is an early step in a deliberately accelerated program. Building on the matters the QCA identified, work underway includes redeveloping our risk consequence categories so service and risk outcomes are expressed in terms that are meaningful to customers, and integrating our capital forecasts with our financial models to assess bill impacts under different investment pathways. Together these will allow more structured engagement with customers on the trade-offs between service levels, risk and cost, including the bill-impact translation that customers most want to see.

The capital forecast has been developed to maintain safe and reliable services for current and future customers, meet compliance obligations, support growth and manage risk in a financially responsible way. Customer insight supports a balanced program that protects service outcomes while recognising current cost-of-living pressures.

4.7 Investment governance and decision rights

4.7.1 Gateway process

All capital investments progress through a formal six-stage gateway process, documented in the Gateway Decision Process for Infrastructure Capital Works (PRO370)[34]. Each stage culminates in a defined decision gate at which the investment must be endorsed and approved before proceeding. The six stages are (Figure 23):

- **Stage 1 - Integrated planning and services planning**: establishes the need for capital intervention and achieves Gate 1 approval which is permission for the project to be created and enter the Capital Investment Plan (CIP).
- **Stage 2 - Solution optioneering and options business case**: identifies and evaluates options and achieves Gate 2 approval which is permission to proceed with a preferred option, having demonstrated a prudent and efficient investment decision based on project benefits and option selection.
- **Stage 3 - Project delivery planning and delivery business case:** develops the Market Ready Design and confirms the preferred Delivery Business Case, culminating in Gate 3 approval.
- **Stage 4 - Project and RAMP development:** develops and approves the Risk Adjusted Maximum Price (RAMP) (the competitively validated maximum delivery price including risk contingency), validating the price to deliver the investment and achieve the project's benefits.
- **Stage 5 - Project delivery and implementation:** manages construction and commissioning.
- **Stage 6 - Benefits realisation and project closure:** measures actual outcomes against committed benefits, feeds lessons learned back into future planning and formally closes the project.

[34] Gateway Decision Process for Infrastructure Capital Works (PRO370), Version 13, Section 3.

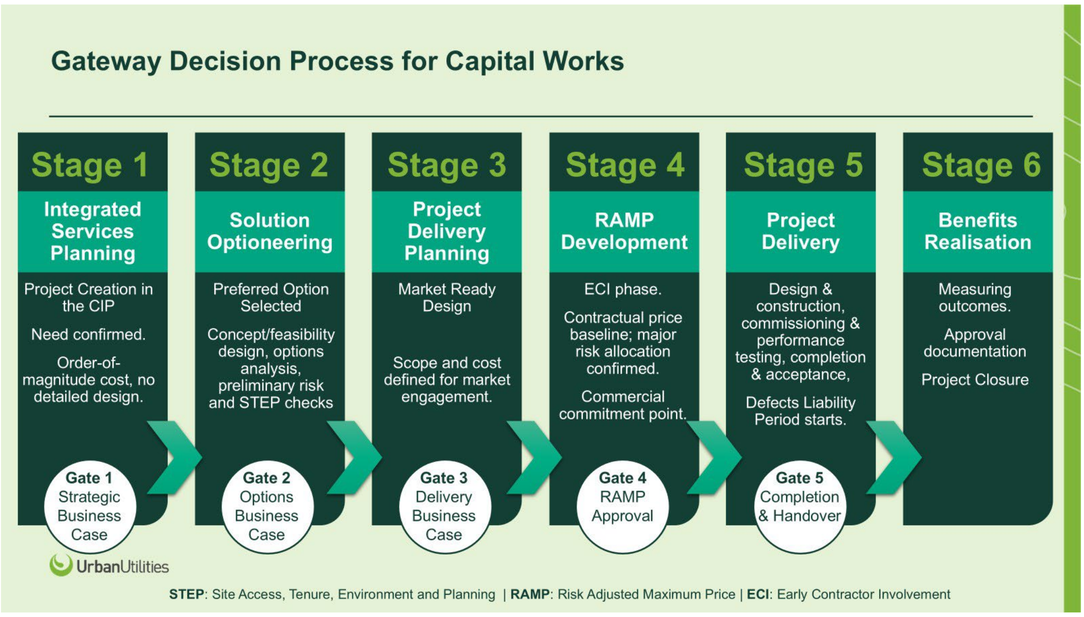


Figure 23 Gateway process for capital planning and delivery

At each stage, cross-functional teams assess the project to ensure that capital expenditure is prudent, efficient and represents best value for money. The gateway process has been refined through three separate third-party reviews in recent years, with each review informing iterative improvements to the process.

The gateway process applies three project complexity pathways (high, medium and low) reflecting the principle that the level of scrutiny applied to an investment should be proportionate to its scale, risk and complexity[35]. Higher-value and higher-risk investments require more rigorous analysis and documentation. Lower-value and lower-complexity investments follow streamlined processes that avoid unnecessary administrative overhead without compromising the fundamental requirements of prudency and efficiency.

In practice, high complexity projects require a full Options Report providing a comprehensive options evaluation before solution selection, followed by separate Gate 2 and Gate 3 business cases, each subject to Investment Assurance Group (IAG) endorsement and approval by the CEO or Board depending on value. Medium complexity projects may combine Gate 2 and Gate 3 documentation, where solution identification and delivery planning can be efficiently managed together. Low complexity or rolling programs follow further streamlined pathways, including Minor Capital Project Submissions and Rehabilitation Submissions, appropriate to their scale while still requiring formal endorsement and approval. At all levels, the requirements for benefit confirmation, options consideration and risk assessment remain. What scales is the depth and formality of the analysis, not the underlying discipline.

4.7.2 Business Case development and options assessment

The business case for each capital investment is developed progressively across the gateway stages, with the level of detail and cost accuracy increasing at each gate as the investment is

[35] Urban Utilities, Gateway Decision Process for Infrastructure Capital Works (PRO370), Sections 3.6–3.8

better defined[36]. At Stage 1, an integrated plan such as an Integrated Catchment Plan (ICP), Integrated Zone Plan (IZP) or One Water Plan (OWP), or, for renewals and enhancements not captured by these plans, a Gate 1 Project Creation Application, establishes the need for investment at an order-of-magnitude cost estimate, sufficient for entry into the CIP. At Stage 2, an Options Report or equivalent document presents the options analysis, preferred option, financial assessment, risk assessment and benefits definition, with costs at a Class 4 or 5 accuracy level. At Stage 3, the Delivery Business Case provides a Market Ready Design with costs at a Class 3 accuracy level, confirmed CAPEX and OPEX forecasts, an updated risk assessment and a final benefits table signed off by the benefit owner[37].

Consequential operating expenditure arising from capital investment is also identified and progressively refined as the project develops. This includes increases or reductions in operating costs associated with the selected solution, such as maintenance, energy, chemicals and other operating requirements. These impacts are incorporated into budget and forecast processes as the investment progresses and continue to be monitored following commissioning. Figure 24 shows how operating expenditure impacts arising from capital projects are incorporated into our budgeting and monitoring processes.

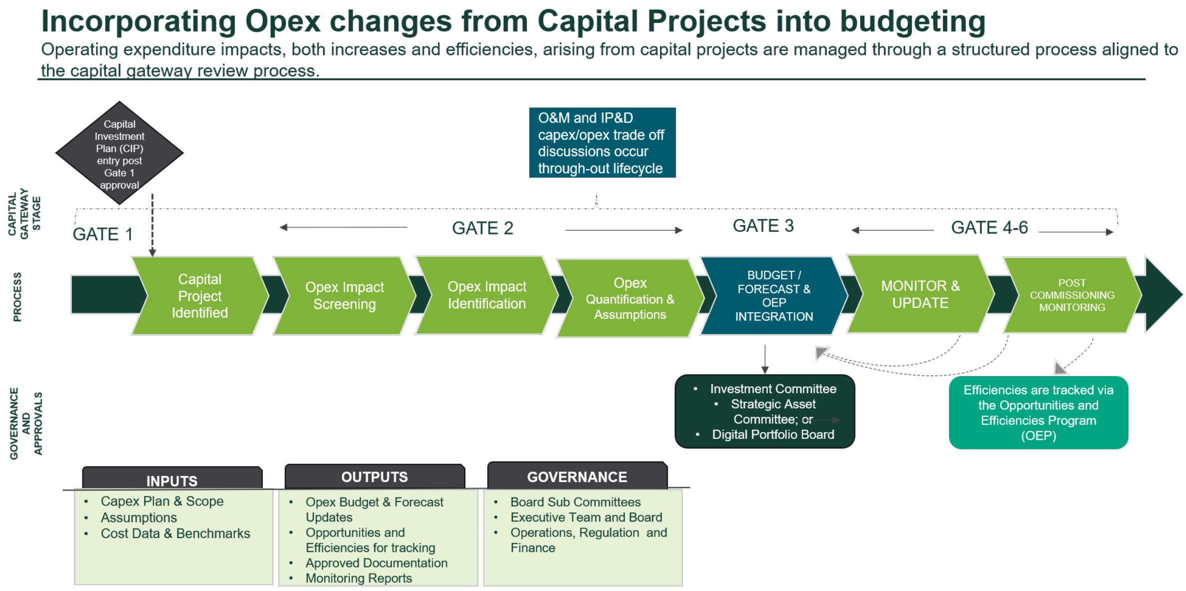


Figure 24 Incorporating operating expenditure impacts from capital projects into budgeting

The integrated plans that underpin Gate 1 are more comprehensive than a typical early-stage project need statement. Each ICP, IZP or OWP is developed through a structured, evidence-based process that assesses current and forecast system performance for the relevant catchment or zone, identifies the root causes of service gaps, and defines the capital and operational interventions required to achieve the target service outcomes. This means that Gate 1 is not limited to confirming that an individual project has merit. It considers the broader

[36] Urban Utilities, Gateway Decision Process for Infrastructure Capital Works (PRO370), Sections 3.2–3.9; Urban Utilities, Capital Estimating Guideline (PRO688)
[37] Urban Utilities, Gateway Decision Process for Infrastructure Capital Works (PRO370), Sections 3.9.3–3.9.4; Urban Utilities, Gate 3 Delivery Business Case Template (TEM665/TEM705)

system context, the interaction between interventions, and the investment pathway required to address service, public health, environmental, growth and compliance drivers over time.

Rather than scoping interventions in isolation, the integrated plan establishes the sequencing and dependencies between interventions along a preferred adaptation pathway. Decision points, adaptation tipping points and transfer points are used to determine when interventions should be triggered, deferred, brought forward or reconsidered as conditions change. The resulting Strategic Business Case sets out the performance trade-offs, intervention pathway and total investment required to deliver the target service outcomes, typically over a 10-to-20-year horizon, with the first five years translated into the near term CIP. Interventions that have satisfied the relevant decision points enter the CIP as defined Gate 1 projects, while interventions subject to future triggers are retained as adaptive Gate 1 interventions and only progress to Stage 2 when those triggers are reached.

This provides a higher level of confidence in the planned investment entering the CIP than would typically be available from a conventional project-by-project planning process. By the time an intervention enters the CIP at Gate 1, its need, timing, scope and indicative investment requirement have already been tested in the context of catchment or system performance, portfolio optimisation and the dependencies between related interventions.

Business case submissions must address both cost and non-cost drivers, including demonstration of prudency against the QCA's investment driver categories (Growth, Renewal, Compliance, Efficiency and Service), with the business case template explicitly stating that if the investment does not clearly relate to one or more of these drivers it is not prudent[38]. Submissions must also address all five of our Critical Outcomes (Safety, Public Health, Environment, Experience and Value), community and stakeholder impacts, environmental considerations, legal and compliance obligations, and safety[39]. The business case template carries a specific note that it may be provided to external parties including the QCA, reinforcing the expectation that documentation be clear, consistent and capable of withstanding external scrutiny[40].

A structured options assessment is required for all capital projects, with the depth of analysis proportionate to project complexity[41]. For high complexity projects, a full Options Report is mandatory and must evaluate all feasible options, including non-infrastructure and operational solutions, staged approaches and interim measures, before identifying a preferred option. The assessment framework requires both financial evaluation (Net Present Value analysis incorporating lifecycle costs) and multi-criteria options evaluation (MCOE), with the MCOE assessing options against safety, operability, reliability, maintainability, environment, public health, service and cost criteria[42].

---

[38] Urban Utilities, Gate 2 Solution Identification and Gate 3 Delivery Business Case Template (TEM705), Section 1.2

[39] Urban Utilities, Gate 2 Solution Identification and Gate 3 Delivery Business Case Template (TEM705), Prudency and Linkage to Enterprise Strategy sections; Urban Utilities, Gate 3 Delivery Business Case for Framework Contracts (TEM665), Cost Driver and Linkage to Enterprise Strategy sections

[40] Urban Utilities, Gate 2 Solution Identification and Gate 3 Delivery Business Case Template (TEM705), Report Availability section

[41] Urban Utilities, Gateway Decision Process for Infrastructure Capital Works (PRO370), Sections 3.8.3–3.8.5

[42] Urban Utilities, Gate 2 Solution Identification and Gate 3 Delivery Business Case Template (TEM705), Options Assessment section

Where the preferred option is not the lowest-cost option, the business case must explicitly justify that preference with reference to the MCOE criteria. Sensitivity analysis is also required to test whether option rankings are robust to cost uncertainty of plus or minus 30%. The options assessment also explicitly requires consideration of staged solutions and interim or non-asset solutions to minimise upfront capital costs[43].

4.7.3 Capital project challenge process

A dedicated Capital Project Challenge Process (CPCP) provides an additional layer of scrutiny to test whether a planned capital investment remains necessary, appropriately scoped and correctly timed before it proceeds[44]. The CPCP can be applied at any stage of the project lifecycle not only at project initiation, and is particularly recommended where a significant period of time has elapsed since the previous gate approval, or where project assumptions may have changed.

The challenge process examines three core questions: why the project is needed (benefit confirmation), when it needs to be delivered (timing and investment triggers), and what needs to be done (scope confirmation). Challenge criteria span benefit confirmation, timing and affordability, scope, risk, health and safety, regulatory compliance and environmental considerations, with each criterion assessed against a traffic-light criticality framework to focus scrutiny on the most material issues[45].

The four possible outcomes are to proceed, defer, revise scope, or delete. The CPCP can also be used to formally delete or defer projects at later stages of delivery if circumstances change and the immediate project need is no longer justified[46]. This gives us a documented mechanism to remove expenditure from the program that is no longer prudent, providing assurance that the capital program reflects current needs and conditions rather than historical commitments.

Our capital challenge process resulted in a downward revision of around $162 million in capital expenditure over the period FY21 to FY26.

Case study: Capital project challenge process

The Eton, Wood and Station Street Sewer Augmentation project illustrates how the Capital Project Challenge Process tests whether planned investment remains prudent before further expenditure is committed, and how the capital program is reprioritised when monitoring and updated evidence change the investment case. It responds to the QCA's Part 1 findings on demonstrating the challenge process in practice and the non-progression of projects where the evidence no longer supports them (Themes 2.4 and 2.5).

The project was originally identified through hydraulic modelling as a priority augmentation to address wet weather overflow performance in the Virginia Branch sub-catchment, one of the poorer performing parts of the S1 network. The planned solution was a short DN225 wastewater pipeline to divert flow into an adjacent catchment. At the time, the investment case assumed that the receiving catchment had sufficient downstream capacity to accommodate the additional load and that the diversion would reduce overflow risk in the original catchment.

---

[43] Urban Utilities, Gate 2 Solution Identification and Gate 3 Delivery Business Case Template (TEM705), Options Assessment section.
[44] Urban Utilities, Capital Project Challenge Process (PRO740), Version 03, Sections 1–3
[45] Urban Utilities, Capital Project Challenge Process (PRO740), Section 4
[46] Urban Utilities, Capital Project Challenge Process (PRO740), Sections 3.3.1 and 4.6.1; Gateway Decision Process for Infrastructure Capital Works (PRO370), Section 3.3

Consistent with the capital project challenge process, the assumptions supporting the original solution were retested as the project progressed, through additional flow monitoring, network instrumentation and review of observed network performance. The updated evidence showed that the receiving catchment also experienced wet weather capacity constraints. It also indicated that the hydraulic model did not fully reflect observed surcharging and overflow behaviour and that inflow and infiltration within the system was higher than previously assumed.

This changed the investment case. The updated evidence indicated that the planned diversion was unlikely to resolve the underlying service issue and could instead transfer or increase wet weather overflow risk downstream. Proceeding with the original scope would therefore have risked committing capital to a solution that did not deliver the intended benefits and may have required further augmentation or rework later.

On this basis, the project was reassessed through the capital challenge process and the decision was taken, through our investment governance process, to defer the augmentation. The Capital Investment Plan was updated to reflect this outcome, with the project rescheduled to FY2032 and the underlying service risk retained on the program and monitored rather than removed. The deferral was not a decision to set aside the service need. Rather, it reflected a more prudent sequence of investment: improve understanding of the network, reduce inflow and infiltration where practicable, recalibrate the hydraulic model using observed performance data, and then reassess the need, timing and scope of any future augmentation.

This outcome demonstrates how the challenge process supports prudent and efficient capital planning. It avoided committing expenditure to a solution that was no longer supported by current evidence, preserved the ability to target a more effective future intervention, and ensured the capital program was updated to reflect the best available information. It also demonstrates that our capital program is actively tested and refined as projects move through the lifecycle, and that monitoring outcomes feed directly back into prioritisation and sequencing decisions, rather than being treated as a fixed list of commitments once a need has first been identified.

4.7.4 Governance framework and decision rights

Our capital investment decisions are governed through a defined hierarchy of bodies, with review, assurance, endorsement, oversight and approval responsibilities proportionate to investment size and project stage[47].

At every gateway stage, the relevant approval authority receives a formal submission supported by the required documentation, endorsed through the IAG and, where applicable, the IC and SAMC, before a decision is made. Finance team endorsement is sought for decisions at Gates 3 and 4, providing a financial governance check separate from the technical and program management assessment[48].

- **The Board** sits at the apex of the governance structure. Its responsibilities in relation to asset management include approving the Asset Management Policy, providing strategic leadership in asset management, and holding final decision authority for

[47] Urban Utilities, Asset Management Framework (AMF), Sections 4.1–4.5; Investment Committee Charter (CHA6); Investment Assurance Group Terms of Reference (CHA48); Gateway Decision Process for Infrastructure Capital Works (PRO370), Section 2.2
[48] Urban Utilities, Investment Committee Charter (CHA6), Purpose.

major capital investments[49]. The Board exercises reserved powers to approve the annual Capital Investment Plan, with all rolling programs bundled and presented for Board endorsement before the CEO is delegated to deliver the endorsed program[50]. Board-level oversight therefore extends not only to individual investments above the financial thresholds but to the aggregate composition of the capital program each year.

- **The Strategic Asset Management Committee (SAMC)** is a standing committee of the Board that oversees our strategies, policies and systems for the management of assets[51]. For major investments, the SAMC reviews, challenges and endorses proposals before they are submitted to the Board for final approval[52].
- **The Audit, Finance and Risk Committee (AFRC)** is a standing committee of the Board that assists the Board in overseeing capital management, financial sustainability and reporting, regulation and pricing, enterprise risk, compliance and the internal controls environment. In relation to the capital program, it reviews the five-year financial forecasts, long-term financial sustainability, annual and multi-year capital and operating expenditure targets, and the assumptions underpinning the annual budget, and makes recommendations to the Board. It also oversees delivery of enterprise efficiency programs and the effectiveness of the enterprise risk management and internal control frameworks, including whether strategic, extreme and high operational risks are being managed within the risk appetite and tolerance determined by the Board.
- **The Executive Leadership Team (ELT)** approves strategic and operational planning objectives, endorses asset management objectives and monitors performance against them. Each member is accountable for the assets and enabling functions within their portfolio[53].
- **The Investment Committee (IC)** meets monthly to review the five-year-plus Capital Investment Plan, oversee capital program delivery, and endorse major project approvals at key gateway stages[54]. The IC is chaired by the Executive Leader Infrastructure Planning and Delivery. Voting members include the CEO, Executive Leader Corporate and Finance, Executive Leader Operations and Maintenance, and Executive Leader Customer and Innovation. An Independent Advisor to the CEO attends in an advisory capacity to provide an external perspective on investment decisions[55].
- **The Investment Assurance Group (IAG)** is a cross-functional body that provides structured challenge and endorsement at four stages of the investment lifecycle: strategic business case, options business case, delivery business case, and benefits realisation[56]. At each stage, the IAG evaluates proposals against criteria that include alignment with capital priorities, plans and servicing strategy; alignment with integrated

[49] Urban Utilities, Asset Management Framework (AMF), Section 4.1
[50] Urban Utilities, Delegation of Authority Manual (MAN3), Financial section- Capital Investment Plan and Financial Planning and Budgeting reserved powers
[51] Urban Utilities, Asset Management Framework (AMF), Section 4.2; Urban Utilities, SAMC Charter (CHA35).
[52] AMF Integrated Planning Manual (MP-DOC-0002082-01), Section 6.6; Gateway Decision Process for Infrastructure Capital Works (PRO370), Section 3.2.4
[53] Urban Utilities, Asset Management Framework (AMF), Section 4.3
[54] Investment Committee Charter (CHA6), Purpose and Scope
[55] Investment Committee Charter (CHA6), Purpose and Scope
[56] Investment Assurance Group Terms of Reference (CHA48).

catchment and zone plans; prudency and efficiency; investment benefit at both local and system levels; technical and governance assurance; alignment with service risk mitigation; and shareholder and community value. Unanimous endorsement by all IAG members is required before a proposal proceeds to the relevant decision-maker. IAG endorsement is a prerequisite before any proposal is brought to the IC.

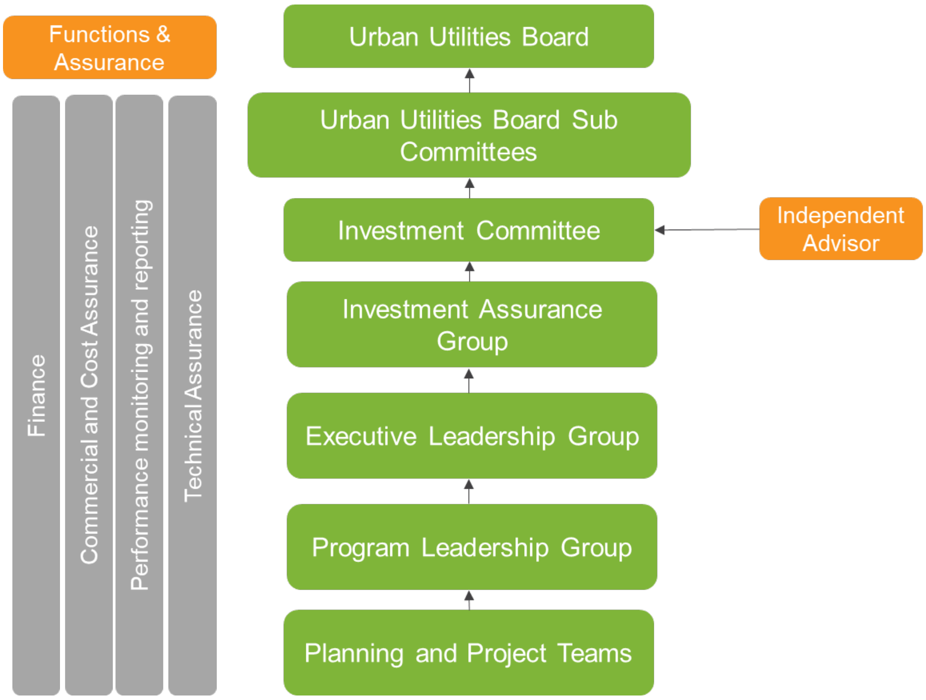


Figure 25 Capital planning and delivery governance framework

Decision authority for capital investments is scaled to investment size and project stage[57]. At project initiation, proposals below $5 million are approved by the Executive Leader for Infrastructure Planning and Delivery following IAG endorsement; proposals between $5 million and $15 million are approved by the CEO following IC endorsement; and proposals above $15 million require Board approval following SAMC endorsement[58]. At the project delivery stage, the Risk Adjusted Maximum Price (RAMP), being the approved project delivery budget established at Gate 4, is approved in accordance with Board-endorsed delegations and governance requirements[59].

The delegation framework explicitly prohibits the splitting of projects to avoid enlivening Board reserved powers[60]. This prevents circumvention of the Board approval thresholds through artificial disaggregation of projects.

4.7.5 Independent assurance

The capital lifecycle incorporates structured assurance checks at the planning, delivery, portfolio and closure stages. These assurance activities are designed to test whether planned

[57] Urban Utilities, Delegation of Authority Manual (MAN3); Gateway Decision Process for Infrastructure Capital Works (PRO370), Sections 3.2.4, 3.8.4, 3.9.4, 3.10.4
[58] Gateway Decision Process for Infrastructure Capital Works (PRO370), Section 3.2.4
[59] Gateway Decision Process for Infrastructure Capital Works (PRO370), Section 3.10.4
[60] Urban Utilities, Delegation of Authority Manual (MAN3), Note on project splitting

investments remain prudent, efficient, deliverable and aligned with the benefits identified through the planning and business case process. They are also applied through parties and forums that are organisationally separate from the project team and delivery partner, providing independent challenge before key decisions are made. This framework was assessed in Phase 1 of the QCA's price monitoring expenditure review,, which found our capital governance, policy and procedures consistent with good practice and identified no material gaps across the assessment criteria.

At the planning stage, major investment decisions are tested through the Investment Assurance Group (IAG) and Investment Committee gateway process. The Investment Assurance Group draws in cross-functional expertise from across the business and, where required, external advisors to review investment proposals before they are progressed for endorsement or approval[61]. The Investment Committee also includes an Independent Advisor to the CEO who provides an external perspective on major investment decisions at each gateway review.

At the project delivery stage, assurance is applied before a project proceeds to delivery. For projects delivered through the Risk Adjusted Maximum Price process, the final RAMP report is subject to internal cost and technical review before Gate 4 approval. Urban Utilities maintains an internal cost intelligence function that provides assurance of project cost estimates prepared by delivery partners. The function is separate from the project teams and delivery partners responsible for developing and delivering the projects, providing an internal challenge and assurance role including reviews of RAMP reports and provision of an Independent RAMP Certification Report to the Executive Leadership Group and Infrastructure Delivery. This provides a cost assurance check on the delivery price before the RAMP is approved[62]. Engineering Professional Services (EPS) separately reviews the technical aspects of the final RAMP report, with findings reported to the Executive Leadership Group[63].

Technical assurance by EPS extends beyond this final delivery-stage review. It is applied across the project lifecycle, from endorsement of the Basis of Design at the planning and business case stages, through design and RAMP development, to operational readiness and commissioning. This assurance is captured through documented Technical Assurance Records at relevant points in the lifecycle.

The level of technical assurance is scaled to project complexity, criticality and risk. This includes consideration of factors such as customer impact, single points of failure, capacity constraints and environmental exposure. This ensures that assurance effort is concentrated where it adds the most value, while maintaining proportionate oversight of routine and lower-risk works. The assurance process tests both sides of the investment decision. It guards against over-specification, while also challenging under-specification that could compromise asset performance, asset longevity or whole-of-life value. Any departure from our technical standards requires formal justification under the Deviation from Technical Standards Procedure.

EPS also works with Operations and Maintenance to confirm that planned solutions are operable and maintainable. Lessons from delivery, commissioning and post-handover performance are then fed back into future designs and planning processes.

---

[61] Urban Utilities, Investment Committee Charter (CHA6), Members; Investment Assurance Group Terms of Reference (CHA48)

[62] Urban Utilities, Program Management Approach (MAN87), Task T.4.23; Urban Utilities, Gateway Decision Process for Infrastructure Capital Works (PRO370), Section 3.10.

[63] Urban Utilities, Program Management Approach (MAN87), Task T.4.24.

At the portfolio level, the gateway process has been subject to three separate third-party reviews in recent years, with each review generating iterative improvements to the process. The 2024 refresh of the AMF was developed with the active involvement of external asset management specialists (Stantec and Ajile) and operational excellence practitioners (Synergistics). The Stantec memorandum dated 3 May 2024 confirmed that the resulting framework is consistent with good practice principles and aligned with ISO 55001[64].

At project closure, the Stage 6 Benefits Realisation process requires a formal Benefits Realisation Report. This report measures actual outcomes against the benefits defined through the earlier business case process, including relevant performance measures, performance differentials and lessons learned. The findings validate the original investment decision and are fed back into the relevant integrated and adaptive plans, where actual performance and lessons learned inform review of triggers, decision points and preferred pathways, and therefore the scope, timing and prioritisation of subsequent investments.[65]

[64] Urban Utilities, Asset Management Framework (AMF), Appendix B —Stantec memorandum dated 3 May 2024

[65] Urban Utilities, Gateway Decision Process for Infrastructure Capital Works (PRO370), Section 3.13, Table 5

5 Part 4 - The capital program

This Part sets out the resulting capital program and how it will be delivered. It demonstrates that:

1. expenditure is directed to the assets, regions and investment drivers where the service need is greatest;
2. major and rolling programs are packaged, procured and delivered through arrangements designed to improve certainty and efficiency; and
3. deliverability risks are actively managed through sequencing, market engagement, cost assurance, performance monitoring and adaptive review.

5.1 Total program overview

Unless otherwise stated, forecast capital expenditure in this annexure is presented in real FY27 dollars. The Capital Investment Program (CIP) is prepared in FY27 real dollars and forecast values have been converted to nominal dollars for the regulatory model, RAB roll-forward and MAR calculation using a composite capital expenditure escalator comprising 65% Wage Price Index and 35% Consumer Price Index. Further detail on the escalation approach is provided below.

Total infrastructure capital expenditure across FY28-FY30 is planned at around $1.75 billion against recent delivery of around $400 million per year. The preliminary profile is set out below.

Table 5 Forecast capital expenditure by category, FY28 to FY30, $m real FY27

Capital Category	FY28	FY29	FY30	Total FY28 to FY30
Infrastructure	535	604	612	1,751
Digital and Information	69	57	57	183
Property, Plant and Equipment	19	16	15	50
Games readiness infrastructure	78	154	59	291
TOTAL	**701**	**831**	**743**	**2,275**

Note: Totals may not add due to rounding. Values consider the impact of the efficiency target. Digital & Information capital expenditure is included in this table for transparency but is addressed in a separate annexure (Annexure 6 – Digital and Information Investment)

Renewals remains the largest expenditure category across FY28 to FY30. The increase above recent annual capital expenditure levels is principally associated with a cluster of wastewater treatment and conveyance investments in high-growth catchments. The forward profile also reflects tightening environmental obligations and an increasing renewal task, and is expected to remain elevated beyond FY30 as further assets reach capacity and end of life.

Basis of forecast escalation

Forecast capital expenditure in the CIP is prepared in FY27 real dollars. For the regulatory model, RAB roll-forward and MAR calculation, forecast capital expenditure has been converted to nominal dollars using a composite capital expenditure escalator comprising 65% Wage Price Index (WPI) and 35% Consumer Price Index (CPI).

This approach reflects an analysis of the cost composition of our infrastructure capital expenditure, which is materially influenced by construction labour, contracted delivery, professional and engineering services, plant, materials, equipment and freight. Internal cost assurance analysis and external market intelligence indicate that construction costs continue to be affected by labour shortages, skilled trade constraints, energy and freight costs, and supply chain pressures. This supports the use of a capital expenditure escalator more aligned to the actual change in construction costs rather than CPI alone.

The 65% WPI / 35% CPI approach is transparent, repeatable and consistent with the approach accepted by the QCA in the GAWB 2025–30 price monitoring investigation for establishing forecast capital expenditure. The QCA accepted that approach as reasonable for forecast capex, noting that precise forecasting of capex escalation is not required where actual prudent and efficient capex is subsequently rolled into the RAB at actual cost[66].

No additional construction market or labour market premium has been applied. While current market intelligence indicates elevated construction cost pressure, including in Brisbane, these risks are managed through project estimating, procurement strategy, contingency, risk allowances and ongoing cost assurance rather than through an unsupported escalation premium.

5.2 Historical capital expenditure and review of material investments

The opening regulatory asset base used in the maximum allowable revenue (MAR) calculation includes capital expenditure delivered and capitalised in earlier periods, adjusted for depreciation, disposals and inflation. The complete regulatory asset base roll-forward and the basis of these adjustments are set out in Annexure 7 - Regulatory Asset Base.

Between FY14 and FY26, $3.8 billion of capital expenditure was capitalised into the regulatory asset base before netting off capital contributions. Unless otherwise stated, historical expenditure in this section is presented in nominal dollars.

To provide a clear account of the major investments included in this amount, we reviewed the most material projects and programs completed since the previous price monitoring review. Consistent with the referral notice's focus on matters with a material impact, the review concentrated on the highest-value investments completed and capitalised between FY14 and FY26. It considered why each investment was required, the scope and options

[66] Queensland Competition Authority (QCA) (2025), Gladstone Area Water Board Price Monitoring Investigation 2025–30: Final Report, Queensland Competition Authority, Brisbane, April 2025.

considered, when and how it was delivered, the expenditure incurred and the outcomes achieved.

These reviewed investment projects are included in the historical capital expenditure that has been rolled into the RAB.

The investments span more than a decade of delivery and were planned, approved and delivered under the arrangements applying at the time. Over this period, our capital planning, governance, delivery and assurance arrangements continued to develop. Later investments were progressively subject to more formalised integrated planning, gateway review, capital challenge, cost assurance and benefits realisation processes. Parts 3 and 4 of this annexure describe how these arrangements have matured.

How we reviewed the investments

Our review drew on two sources of evidence.

First, we examined the available records created when each investment was planned, approved and delivered. These records vary according to the nature and timing of the investment but include business cases, needs assessments, options analysis, approval records, procurement documentation, cost and delivery reporting, commissioning records and project closure information.

Second, we reviewed each material investment using a consistent set of considerations:

- the service, growth, renewal, compliance or efficiency need addressed;
- whether the scope and timing responded to that need;
- the options and delivery approaches considered;
- actual expenditure and the reasons for material cost movements; and
- the assets, capacity, risk reduction or other outcomes delivered.

Taken together, this work shows that prudency and efficiency considerations were applied to the most material investments in preparing the historical capital expenditure roll-forward. It provides a consistent account of the need addressed, the scope and timing of the response, the options and delivery approach, the expenditure incurred and the outcomes achieved for each material investment.

This highlights the prudency and efficiency of the historical investments reviewed, but more broadly demonstrates the effectiveness of the capital governance and planning processes in place through this period in delivering prudent and efficient capital expenditure that underpins the value rolled into the RAB.

5.3 Expenditure by driver

The program is reported against the QCA investment drivers. Across the regulatory period, renewals is the largest category at around 47% of capital expenditure. The split over FY28-30 is approximately $623 million growth, $855 million renewals, $171 million compliance, $3 million efficiency and $151 million service improvements.

Although growth is the second-largest category in total expenditure, it accounts for the largest increase relative to recent annual levels. The distinction between total program composition and the source of the uplift is important: renewals remains the largest ongoing investment requirement, while growth is driving much of the near-term increase.

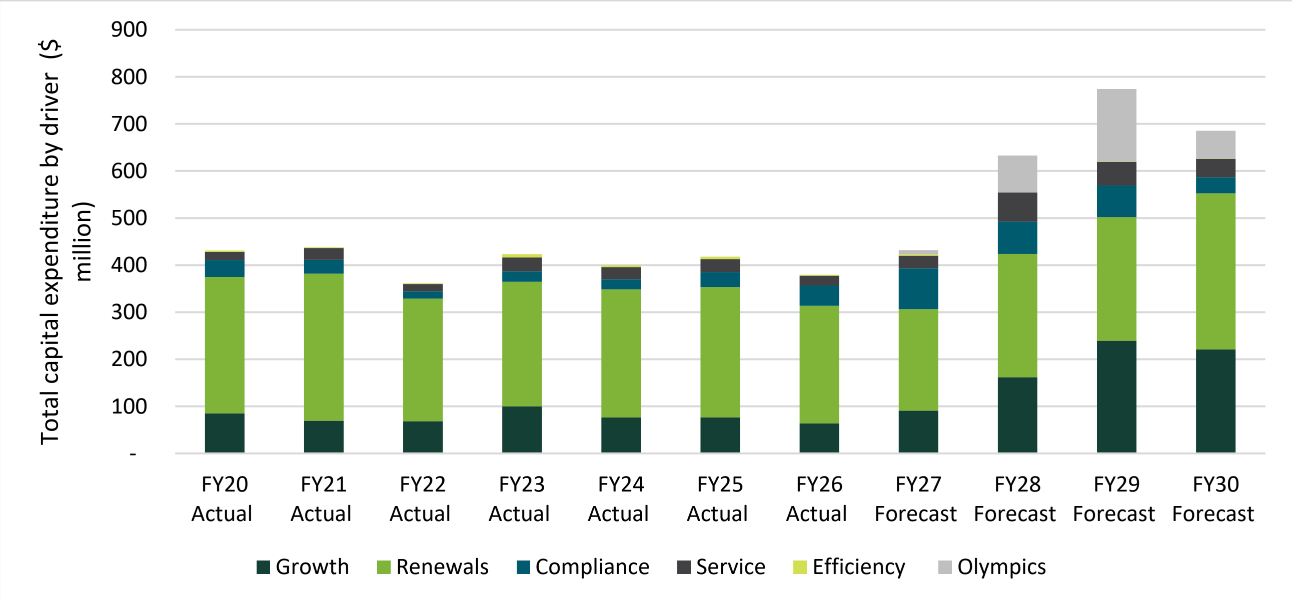


Figure 26 Forecast capital investment by driver FY20 to FY30 (real $FY27)

5.3.1 Renewals program

Renewals are identified through the systematic assessment of asset condition, performance, criticality, risk and whole-of-life cost. As our regulated asset base expands and matures, a greater proportion of assets will reach the point at which renewal is the prudent and efficient intervention. An increasing renewals program is therefore an expected consequence of managing a growing and ageing asset base.

The scale and timing of this investment are moderated through our risk-based management framework. Rather than replacing assets when they reach a nominal age or seeking to address the entire renewal need immediately, we prioritised assets with the highest likelihood and consequence of failure. This directs investment towards the risks that matter most for customer service, safety, environmental outcomes and regulatory compliance. Lower risk assets continue to be managed through monitoring, maintenance, optimisation and targeted interventions where these provide the lowest whole-of-life cost.

Enterprise Decision Analytics supports this prioritisation by integrating asset condition, performance, failure probability and consequence data. This helps identify where the risk and costs of continued operation justify proactive renewal and where an asset can prudently remain in service. Renewal expenditure is therefore directed to the investments that deliver the greatest reduction in service risk, while avoiding premature replacement of assets that continue to provide acceptable performance. The forecast below reflects the progressive movement of the asset base towards its risk-based intervention thresholds, as identified through the Strategic Asset Class Plans. This approach balances cost, risk and performance while maintaining the long-term sustainability of the asset base and affordability for customers.

Over the FY28-FY30, renewals capital expenditure is planned at $855 million, or approximately 47% of total capital expenditure.

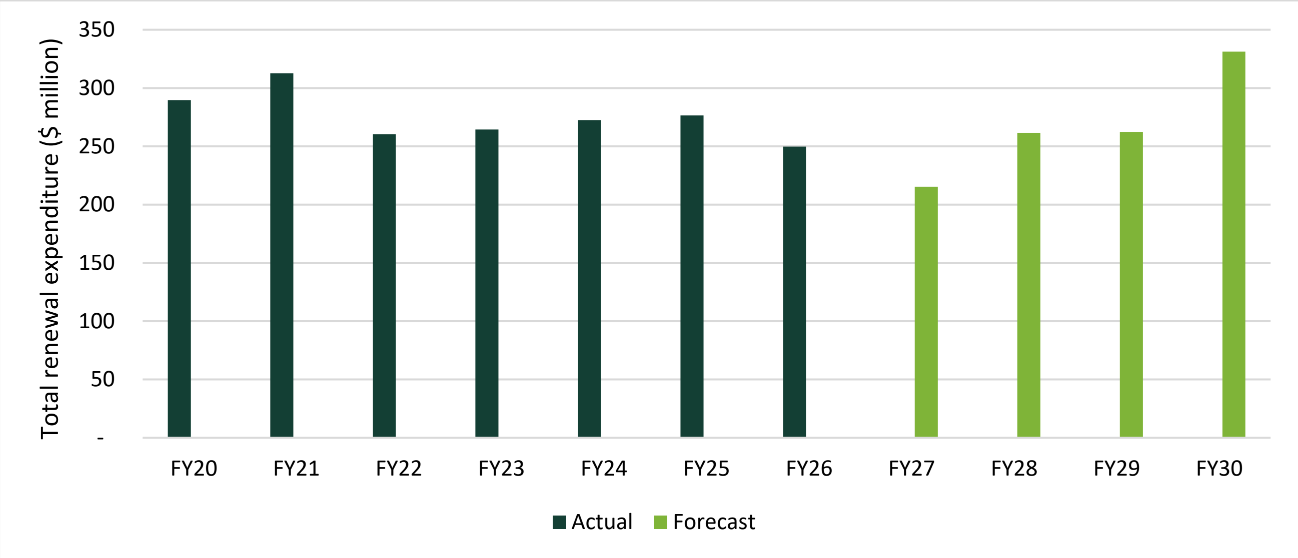


Figure 27 Historical and forecast renewal investment (real FY27)

Renewals case study – water mains renewal planning

Much of our water network was built during the twentieth-century expansion of Brisbane and the surrounding region. A substantial proportion of our distribution mains is now reaching an age where the risk of failure increases. The challenge is to renew the right mains at the right time: not too early which would bring forward costs for customers unnecessarily, and not too late, which could increase the risk of service interruptions, bursts and higher repair costs across a large and ageing asset base.

The environment around these assets has also changed profoundly since they were laid. Much of the network was originally installed in open verges, paddocks and quiet local roads on the fringe of a growing city, where trenches could be opened, pipe laid and ground reinstated quickly and at relatively low cost. Decades of urban growth and consolidation mean many of these same mains now run beneath busy roads, footpaths and built-up commercial and residential areas (see Figure 28).

Renewing a main in this brownfield setting is materially more complex and costly than the original installation. Works must contend with traffic management, lane closures and work-hour restrictions; deeper and more constrained excavation beneath sealed road pavements; congested underground corridors shared with electricity, gas, telecommunications and other services; and reinstatement to road authority and council standards once works are complete. These conditions also require higher safety controls and greater stakeholder and community management to minimise disruption to customers and the travelling public. Where disruption needs to be limited, trenchless and relining techniques may be used in preference to open-cut construction, often at a higher unit cost. In practice, the cost of renewing an ageing main today is driven as much by where it sits as by the length of pipe replaced.

Through the Water Pressure Mains Strategic Asset Class Plan, we developed a preferred 30-year renewal strategy using a renewal optimisation model that balances cost, risk and performance across the asset class. The model explicitly tests the trade-offs between proactive capital renewal and the operating costs associated with repairs and reactive maintenance. We also reviewed and challenged our risk appetite and consequence criteria and validated the strategy with our operations and maintenance teams to ensure it reflects practical network experience.

The preferred strategy will be developed through two complementary pathways over the regulatory period. Critical mains with a clear renewal need will be proactively renewed by our Infrastructure Delivery team through framework partners under the Next Generation 4D program. Other targeted renewals will be delivered through the Maintenance Services civil delivery team, where field condition, failure history or responsive maintenance activity indicates renewal is the prudent response.

By renewing mains where the risk and cost of continued operation exceed the cost of proactive renewal, the strategy avoids unnecessary early replacement while maintaining benchmarked network performance. This discipline is especially important given the elevated cost of working in established urban corridors. Deferring renewal until it is prudent avoids premature pipe replacement cost and the substantial traffic management, excavation, reinstatement and disruption costs that come with brownfield delivery. Compared with a more conservative replacement profile, this approach avoids approximately $380 million of water-main capital expenditure over ten years, allowing investment to be allocated to higher-priority needs while continuing to manage service reliability, customer impacts and whole-of-life cost.

Figure 28: Wynnum Road, Cannon Hill, in 1959 and today - much of the network was built to serve a very different city

5.3.2 Growth program

Growth capital expenditure covers investment required to increase the capacity of existing assets, or provide new assets, where the need is driven by growth in demand. This includes network, storage, pumping and treatment infrastructure required to service new development, support urban consolidation and maintain reliable water and wastewater services as customer connections, flows and loads increase across our service region.

Our growth investment is shaped by our statutory service provider obligations, our Water Netserv Plan, approved land use planning and development activity across the five local government areas we serve. It is also informed by Queensland Government population projections, local government planning, developer activity and our planning and development assessment functions. In this way, growth expenditure reflects externally driven demand for essential services, rather than discretionary expansion of the asset base.

Growth need is tested through Urban Utilities' integrated planning and capital governance processes. Population and demand forecasts, development activity, hydraulic network models, process models and site-specific capacity assessments are used to identify when and where augmentation is required against defined planning and design criteria. Proposed interventions are then staged through the capital governance process, with the need, timing, scope, benefits and cost of investment progressively tested as projects move from integrated planning into solution development and delivery.

This means growth investment is not assumed simply because population is increasing. Capacity is added where the evidence demonstrates that existing assets will no longer be able to meet required service, development or compliance outcomes. Investment is also sequenced as close as practicable to the timing of demand, recognising that major trunk, treatment, land, approvals and delivery requirements often involve long lead times and must be planned ahead of physical capacity constraints emerging in service.

Growth capital expenditure is planned at approximately $623 million over FY28 to FY30, representing around 35% of total capital expenditure and making it the second-largest investment category after renewals. Growth is nevertheless the largest contributor to the increase above recent annual expenditure levels, reflecting the concentration of major wastewater treatment and conveyance capacity investments reaching their required delivery points during the period. This pressure is not evenly distributed across the service region. It is concentrated in specific catchments, including Brisbane's inner-city renewal and densification precincts, the western and south-western growth corridors and in regional communities where greenfield and dispersed development is more costly to service. In many wastewater catchments, growth is driving the need for both trunk network augmentation and additional treatment capacity. These demands are often compounded by existing network constraints, treatment capacity limitations and environmental requirements, which means the investment needs to proceed on schedule to keep service, compliance and development-servicing risk within acceptable levels.

Over the FY28-FY30, growth capital expenditure is planned at $623 million, or approximately 35% of total capital expenditure. Growth investment is also forecast to remain significant beyond FY30, reflecting the continuing capacity requirements associated with forecast population and development growth. The scale and deliverability of the forward capital program, including how we are preparing for this sustained increase, is discussed further in Section 5.7.

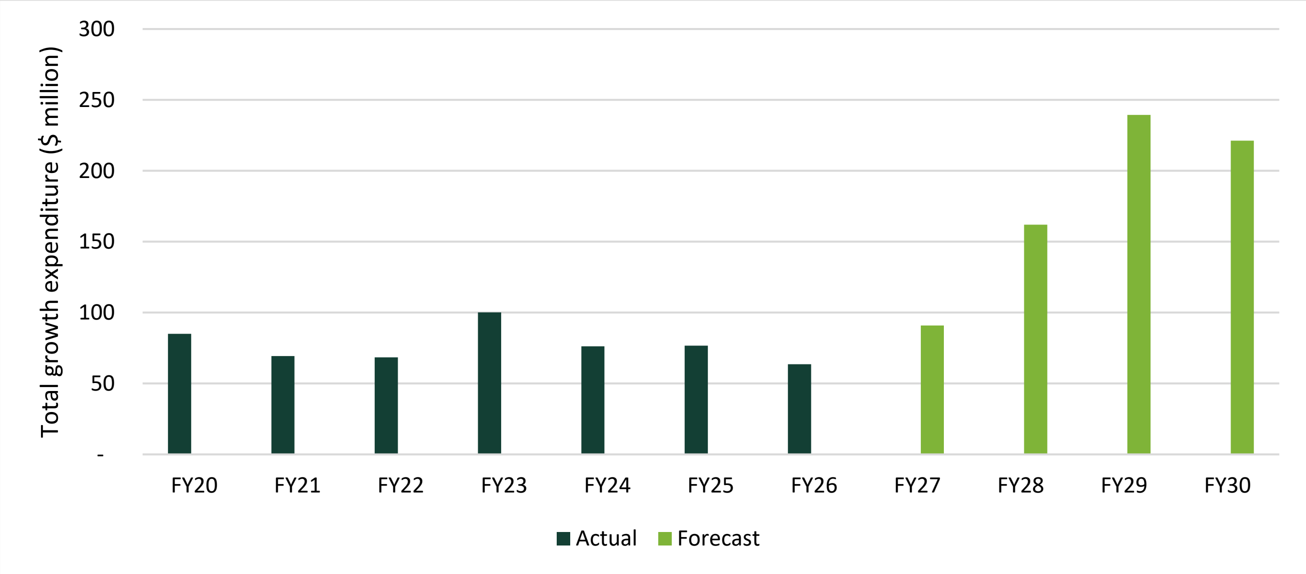


Figure 29 Historical and forecast growth investment (real FY27)

Case study – Caswell Street to Lytton Road

This case study is one of several worked examples in this annexure that serve a dual purpose, illustrating an investment and the service drivers behind it, while also demonstrating how our options assessment process operates in practice. Here the driver is growth, and the example shows the cost, risk and service trade-offs weighed in selecting and optimising the preferred solution, responding to the matters the QCA raised in its Part 1 review regarding evidence of decision-making in practice and the demonstration of scope refinement and optimisation (Themes 2.4 and 2.5).

In the Norman Creek catchment of inner Brisbane, the wastewater network around the SP11 Caswell Street system is under increasing pressure. Parts of the network were built for a smaller population and are now affected by stormwater inflow and infiltration during heavy rain. Combined with rapid urban growth, this can overload the system and contribute to wastewater overflows onto streets, parks and private properties. The catchment population is expected to almost double, which would increase the frequency of overflows and the associated public health, environmental and amenity risk if no action is taken.

Several broad approaches were assessed against cost, service performance and residual risk. This included constructing larger pipes to carry all wet weather flows downstream. While technically feasible, this option would cost more than [redacted] above alternatives and would largely transfer the problem further downstream rather than resolve it, committing significant capital without materially reducing system-wide risk. The preferred option, which is now subject to more detailed design, investigations and engagement, is a targeted wet weather management solution involving a new 1.7 kilometre pipeline, upgrades to existing wet weather infrastructure and additional pumping capacity between two pump stations.

The preferred option was selected because it addresses key public health, environmental and amenity risks, while doing so at materially lower cost than other options explored. Rather than over-investing to convey every wet weather flow, the scope was optimised to target the residual risk that matters most, being the frequency and impact of uncontrolled overflows. This reflects a deliberate cost, risk and service trade-off in which a lower-cost, more targeted intervention was preferred over a larger and more expensive solution that delivered less system-wide benefit.

Delivered during the regulatory period, the project is expected to reduce overflows at more than 30 locations and eliminate around 15 high-risk overflow points, lowering public health risk, improving neighbourhood amenity and supporting better waterway outcomes.. Further information about this project is described in Section 5.5.

Case study – S1 Trunk Sewer augmentation

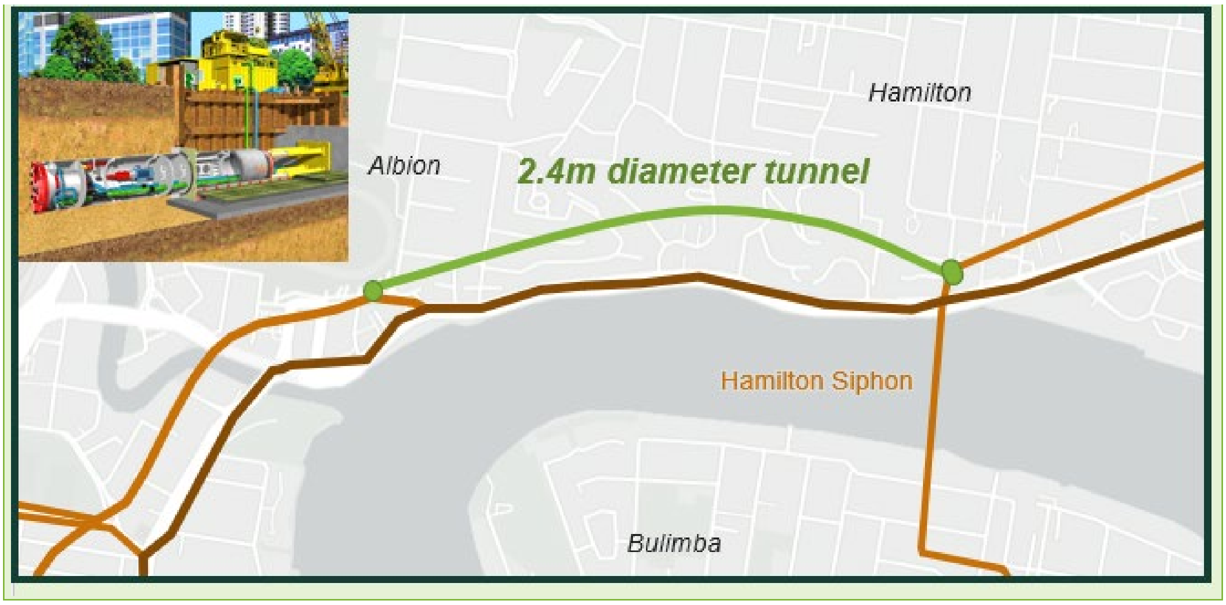
This case study illustrates a growth-driven investment in a critical inner-city asset, and how the options to address it were assessed to arrive at the most prudent and constructible solution.

[redacted]

[redacted] These risks will intensify as continued population growth increases base wastewater load and more frequent, severe wet weather adds to peak flows. Investment is required to restore service standards and establish a sustainable long-term operating position.

A range of options were assessed against cost, constructability, service risk and disruption. The preferred solution is a new 2.4 metre diameter tunnel of around 1.5 kilometres, constructed as a parallel flow path alongside the existing trunk, together with upgrades to key connection points at Albion and Hamilton and a new odour control unit at Hamilton, at a total investment of approximately [redacted]. By adding a parallel flow path, the augmentation increases system capacity, reduces surcharge risk and improves operational resilience in both dry and wet weather. A tunnelled alignment was preferred over surface-based construction because it minimises disruption within a densely developed inner-city corridor and represents the least-impact, most constructible option.

The works will be delivered over the regulatory period through our Infrastructure Delivery team and framework partners under the Next Generation 4D program. Once complete, the augmentation will reduce wastewater overflow risk, improve protection of public health and waterways, reduce odour impacts, restore reliable capacity across a large part of the inner-city network, and provide headroom to service forecast growth. Further information about this project is described in Section 5.5.



5.3.3 Compliance

Compliance capital expenditure addresses investment required to meet regulatory requirements. It is non-discretionary in that the timing and scope are set by external obligations rather than by Urban Utilities' discretion, and it is treated as a first-priority investment category in portfolio optimisation, addressed within Scenario 2 (balanced investment) ahead of lower-priority renewals.

The principal drivers for the FY28–FY30 period include:

- Drinking water quality compliance under the *Water Supply (Safety and Reliability) Act 2008* (Qld) and the *Public Health Act 2005* (Qld), including treatment upgrades, dosing systems and monitoring capability.
- Environmental authority conditions under the *Environmental Protection Act 1994* (Qld), including treatment plant upgrades, wastewater quality improvement, overflow management and protection of receiving environments.
- Critical infrastructure security and resilience requirements under the *Security of Critical Infrastructure Act 2018* (Cth), including measures associated with the physical security, resilience and operation of infrastructure assets. The broader cyber security and information technology investment supporting compliance with these obligations is addressed in the *Annexure 6* Digital and Information Investment
- Other targeted investments required to respond to site-specific licence conditions, safety obligations or changes in regulatory requirements.

Three factors are converging to bring forward compliance-driven investment, particularly across the Somerset, Lockyer Valley and Scenic Rim regional networks:

- **Legacy regional assets:** Many regional treatment plants were sized for small communities, where the cost of upgrades was historically difficult to justify against a limited customer base

- **Growth:** sustained population growth across these regions is pushing a number of ageing plants towards their capacity limits concurrently, compressing the window in which upgrades can be sequenced.
- **Climate and wet weather:** More frequent and intense wet weather is increasing the volume of treated wastewater that must be released to receiving environments. Where flows were previously directed substantially to recycled-water customers and land application, managed outside environmental discharge reporting, a growing proportion must now be discharged to the environment, bringing these schemes more fully within environmental authority obligations and narrowing compliance margins.

This convergence explains why obligations that were previously well within tolerance are now materialising as near-term investment needs.

These drivers above are external and enforceable in that the obligations exist regardless of investment timing. Deferral carries direct regulatory, public-health and environmental consequences, and is increasingly being met through less-efficient operational measures, including wastewater tankering and incremental plant interventions, which place upward pressure on operating costs without resolving the underlying obligation. This reflects the capex/opex trade-off identified in the operating expenditure approach in that deferring the capital solution converts a one-off investment into recurring, less-efficient operating cost.

Projects in this submission are presented grouped by their primary driver. The Capital Investment Plan, however, allows each project to carry multiple drivers, and it is this proportional driver allocation that flows through to the regulated asset base. Where a project is primarily triggered by capacity but also delivers compliance outcomes, its compliance proportion is captured in the asset base even though the project is shown under growth in the primary-driver grouping. Total compliance-driven investment across the program is therefore greater than the primary-driver grouping alone indicates, and several of the period's key projects are more accurately understood as multi-driver, combining growth and compliance.

A total of $171 million is planned to be invested in compliance driven projects over the FY28-FY30 period.

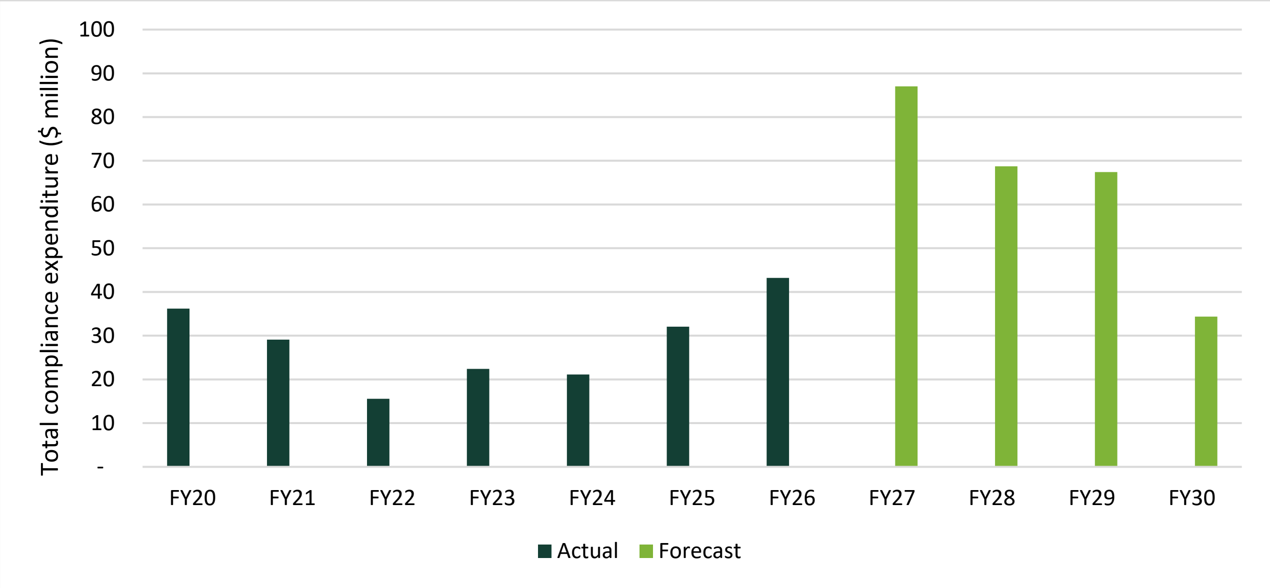


Figure 30 Historical and forecast compliance investment (real FY27)

The increase in compliance expenditure from around $43 million in FY26 to $87 million in FY27 reflects the timing of several material compliance investments, rather than the emergence of new compliance requirements in that year. Key contributors include the Kilcoy Resource Recovery Centre Compliance: Woolmar Recycled Water Pipeline, Storage and Reuse project, discussed in the case study below, and the Beaudesert Resource Recovery Centre Existing Reuse Scheme Upgrades. These projects bring forward capital responses to compliance pressures that have developed over time as existing operational and interim measures become less sustainable.

Case study – Kilcoy Resource Recovery Centre Compliance: Woolmar Recycled Water Pipeline, Storage and Reuse

The Kilcoy Resource Recovery Centre (RRC) compliance investment is one of the key compliance-driven projects in our FY28 to FY30 capital program, with around [redacted] of expenditure planned over the period. It responds to a regulatory requirement at a small regional wastewater treatment facility and demonstrates how we apply prudency and efficiency tests even where the underlying obligation is not discretionary. The case study shows the distinction we draw between compliance and the scope, timing and staging of the capital response, which are tested before major expenditure is committed. It also reflects the regional compliance pressures described earlier in this chapter, where legacy plants built for smaller communities, continued growth and increasingly variable wet and dry weather conditions are bringing long-standing schemes closer to their environmental limits

The Kilcoy RRC provides wastewater treatment for the Kilcoy community in the Somerset service area. It is a small regional facility within the legacy asset base we assumed at our formation in 2010, and it operates under an environmental authority issued under the *Environmental Protection Act 1994* (Qld). Like a number of small regional plants, it was originally sized for a smaller community and discharges to a receiving environment, [redacted]

These pressures are increasingly shaped by climate variability, and not only by wet weather. [redacted] he compliance challenge is therefore not simply a capacity issue. It is a wastewater management issue that requires the right balance between treatment, storage, reuse and authorised discharge.

To address these challenges, we have managed the risk through operational controls rather than allowing the risk to remain unmanaged, including tankering of wastewater during constrained periods, at a cost of approximately [redacted] between February and April 2026 alone[redacted]. Together with the variability and cost of these mitigations, this indicated that an enduring treatment and wastewater management solution was prudent rather than continued reliance on operational measures.

The need, and the preferred response to it, have been developed and refined over more than a decade. In 2014, planning investigations recommended augmenting the facility to around 3,500 equivalent persons (EP) and identified recycled water reuse, including supply to the Kilcoy Racecourse, as a way to reduce pressure on the treatment system and the receiving environment. Reuse commenced in 2018 under a new contractual arrangement and was an appropriate interim measure, but monthly reuse performance was variable and reuse alone could not provide a complete or enduring compliance solution.

In 2018, master planning recommended acquiring a new site, now known as Woolmar, for a new future greenfield wastewater treatment plant of around 5,000 EP to provide a long-term compliance pathway for the catchment, and the Woolmar land was acquired in 2020. An endorsed wastewater management strategy then recommended a staged approach: Stage 1, transferring dry-weather final wastewater from the existing facility to a storage lagoon and irrigation scheme at Woolmar; and Stage 2, a new Kilcoy treatment facility subject to future feasibility assessment.

The compliance need then remained subject to investment challenge. In 2022, a project review recommended that the preferred solution, estimated at around [redacted], should not proceed to Gate 3 at that time, and that the broader Kilcoy catchment pathway be reconsidered through the Somerset One Water Plan before further commitment. The review was supported by a treatment-plant performance review, a pipeline-route and irrigation-scheme assessment, a water-balance assessment, an aquatic ecological assessment and a net present value analysis. The net present value analysis did not show a clear cost benefit from delivering the irrigation scheme first and a new wastewater treatment plant later based on the information available at the time. The challenge therefore tested not only whether to invest, but how and when and could have resulted in a different scope, timing or staging.

This 2022 decision point is important. It shows that we did not treat the existence of a compliance issue as automatic justification for the first capital solution identified. The planned investment was paused, tested against broader catchment planning, and reconsidered before further commitment.

What changed between 2022 and 2025 is central to this case. The compliance obligation did not go away during this period; what was refined was the most prudent and efficient way to meet it. By 2025, the balance of evidence had changed. The site continued to face compliance pressure, dry-weather release constraints had become more acute, temporary operational mitigations were imposing material costs, and further planning confirmed that a staged reuse and storage solution could address the near-term compliance risk without bringing forward the full cost of a new treatment plant. In 2025, a Gate 1 was endorsed for the Kilcoy RRC Compliance Woolmar Recycled Water Pipeline, Storage and Reuse project.

The project is intended to provide a more durable compliance response by improving wastewater management and enabling greater beneficial reuse at Woolmar. Its scope comprises a recycled water transfer system, including a new transfer pump station at the RRC and a transfer pipeline of about 2.1 kilometres conveying recycled water to our irrigation scheme at Woolmar. The scheme also includes around 10 ML of new recycled water storage at Woolmar, an expanded irrigation area, and supporting monitoring and control systems.

The benefit is framed as protection of the receiving environment rather than as a simple volumetric discharge-reduction target. Water balance modelling indicates the scheme is expected to reduce the likelihood of non-compliant dry-weather releases and associated environmental harm at Sheep Station Creek. Performance will be assessed against the relevant environmental authority requirements and receiving environment water quality thresholds, including ammonia concentrations in Sheep Station Creek. [redacted]

Consistent with this staged pathway, the current investment delivers the near-term Stage 1 response, while the larger Stage 2 investment, a new treatment facility on the Woolmar site, currently anticipated around 2048 in line with the 2018 master plan, is deferred until it is required. The timing of Stage 2 will continue to be tested through future planning, demand, performance and regulatory triggers. This staging reflects the distinction maintained throughout this chapter between compliance, which is non-discretionary, and the scope, timing and staging of the capital response, which are deliberately matched to need so that customers are not asked to fund major treatment capacity earlier than necessary. Further information about this project is described in Section 5.5.

5.3.4 Service improvements

Service improvement capital expenditure enhances the reliability, resilience or quality of our services beyond expenditure required to meet a specific compliance obligation or renew an asset. It includes targeted risk reduction, climate resilience initiatives, and works that reduce impacts on customers and communities, such as wastewater overflow management and odour control.

A total of $151 million is planned to be invested in service improvement driven projects over the FY28-FY30 period.

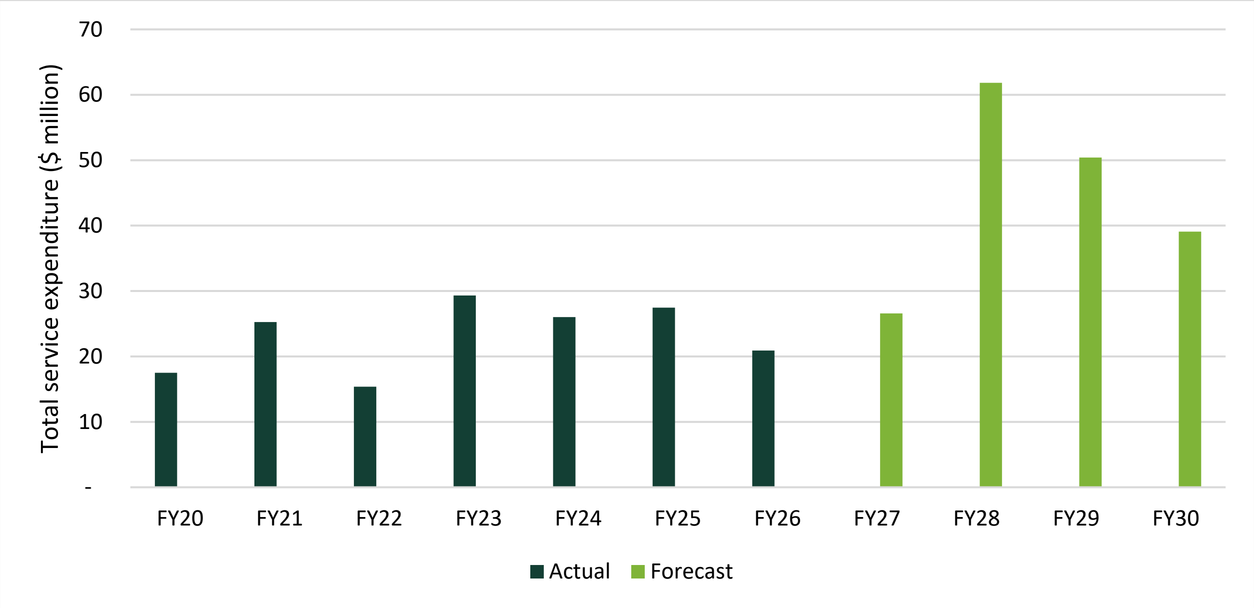


Figure 31 Historical and forecast service investment (real FY27)

Service improvement investment generally allows greater discretion over scope, timing and the level of improvement than compliance-driven expenditure. We therefore assess each proposal against the service risk being addressed, the expected customer and community benefit, available alternatives, whole-of-life cost and affordability. Funding is directed to investments that deliver the greatest improvement and risk reduction for the cost incurred.

The following case study demonstrates how this approach is applied to fire flow investment.

Case Study – Targeted fire flow investment in Zone 4

Fire hydrants connected to the water supply network provide an important community service by supporting emergency response, public safety and property protection. The Queensland State Government publishes planning guidelines which establish benchmarks for desired fire flow performance. These benchmarks are used to assess existing and future network capacity to satisfy the provision of water for firefighting purposes in addition to meeting the minimum standards of service related to customer water supply flow and pressure.

Achieving these benchmarks across an established network where demands are growing could require significant expenditure if all identified shortfalls were addressed through network augmentation. We therefore prioritise fire flow investment by considering the extent of the performance shortfall, the number and characteristics of properties affected, local fire risk, the condition of existing assets and the cost of available interventions. By applying this risk-based prioritisation methodology, investment is directed to locations where it delivers the greatest community benefit and risk reduction as per State Planning Guidelines.

[redacted] Hydraulic modelling identified 138 potential pipeline augmentation projects, with a total estimated cost of more than $150 million. Although delivering all 138 projects would have addressed the modelled shortfalls, it was not considered the most prudent use of customer funds.

Further assessment found that most shortfalls were associated with ageing hydrants whose performance had deteriorated over time, rather than insufficient capacity in the broader network. By prioritising hydrant testing, reconditioning and replacement through the existing renewal program, approximately 14,626 properties, or 72% of those initially identified, could achieve the desired performance without a major pipeline augmentation.

For the remaining properties, we applied a prioritisation framework that assessed each potential augmentation against:

- The severity of the modelled fire flow shortfall
- The number of properties expected to benefit
- The relative fire risk of the affected properties
- The condition and age of the relevant network assets
- The cost and expected service improvement of the proposed augmentation

The potential augmentation projects were then ranked according to the benefit they would deliver relative to their cost.

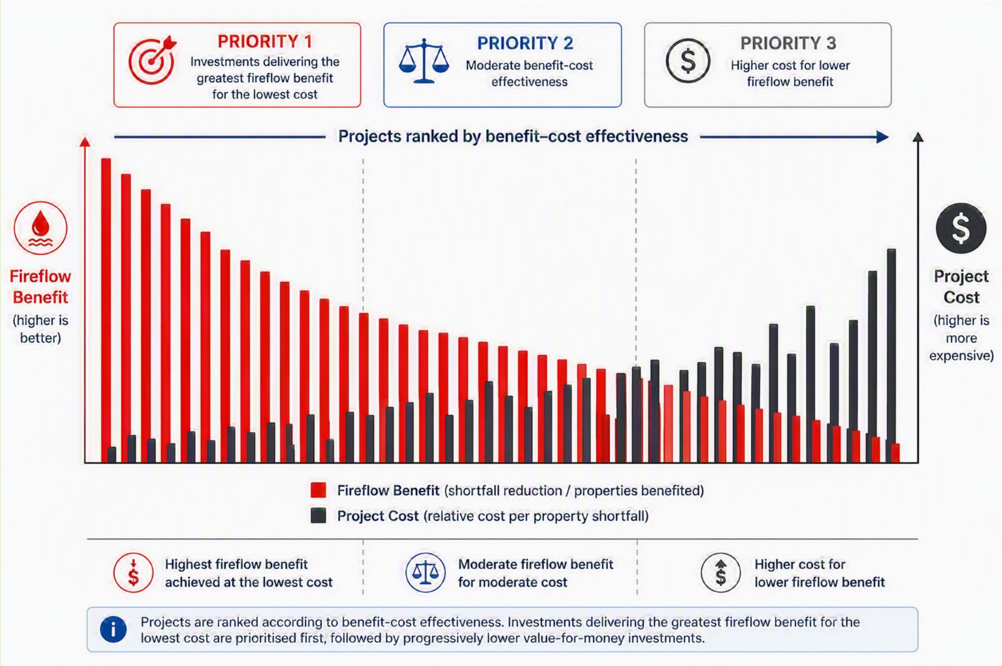


Figure 32 Fire Flow Investment Prioritisation Framework

The analysis demonstrated significant diminishing returns across the potential augmentation program. As shown in Figure 32:

- The highest-value interventions, representing approximately 20 percent of the potential expenditure, addressed around 60 percent of the weighted fire flow shortfall
- The next 60 per cent of expenditure addressed a further 36 per cent of the weighted shortfall
- The final 20 per cent of expenditure addressed only around 4 per cent of the weighted shortfall

Proceeding with every identified augmentation would therefore have required substantial additional expenditure to address a relatively small proportion of the remaining service shortfall. The cost per unit of improvement increased considerably for the lower-priority interventions, while the number of properties and level of risk reduction benefiting from that expenditure declined.

Rather than proceeding with all 138 potential projects, we included only the highest-priority augmentations in the capital program. These investments focus on locations with the most significant performance shortfalls, higher relative fire risk, older or more vulnerable assets and the greatest number of customers benefiting.

This approach demonstrates prudent and efficient expenditure in three ways. First, it addresses the underlying cause of most deficiencies through targeted testing, reconditioning and replacement of existing hydrants. Second, it coordinates service improvements with the existing renewal program rather than constructing separate infrastructure where this is not necessary. Third, it reserves major network augmentation for locations where the expected community benefit and risk reduction justify the cost.

The resulting prioritised 20-year program has an estimated cost of approximately $49 million, compared with more than $150 million to deliver all 138 identified augmentations, while directing investment to the locations where it is expected to deliver the greatest fire flow improvement and community benefit.

5.3.5 Efficiency

Efficiency capital expenditure covers investments whose primary purpose is to reduce the cost of planning, delivering, operating or maintaining our services. Under the primary-driver classification used in this annexure, efficiency is the smallest infrastructure investment category.

Over FY28–FY30, efficiency-driven infrastructure capital expenditure is planned at $3 million, or approximately 0.1% of total infrastructure capital expenditure (Figure 33).

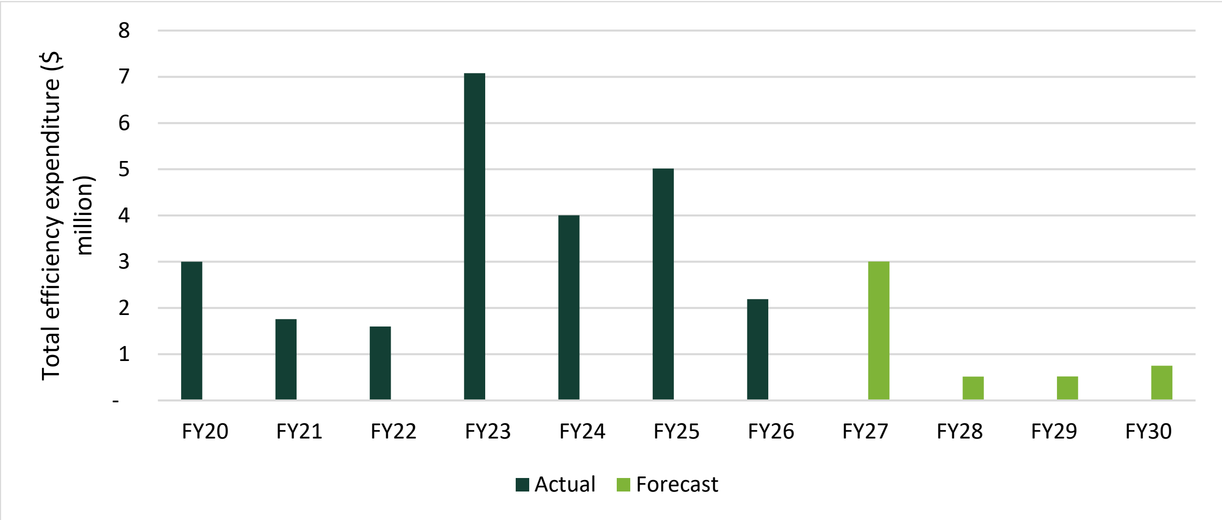


Figure 33 Historical and forecast efficiency investment (real FY27)

The relatively small value shown in Figure 33 does not represent the full extent of investment supporting infrastructure efficiency. Most investment whose primary purpose is to improve digital systems, data and information capability is reported separately in the Digital and Information annexure (refer to *Annexure 6*). These capabilities are an important enabler of the infrastructure capital program.

In infrastructure planning, digital systems and analytical tools improve the evidence used to identify investment need, assess risk and test the timing and scope of proposed interventions. They support asset condition and performance analysis, risk-based renewal forecasting, hydraulic and process modelling, demand forecasting and monitoring of network and environmental outcomes. This allows investment to be targeted more precisely, unnecessary or premature expenditure to be avoided, and options to be tested before significant capital is committed.

Digital capability also enables and supports more efficient delivery and operation through consistent project information, improved cost and schedule visibility, standardised designs, smart-network monitoring, automation and predictive maintenance. It underpins elements of our NG4D delivery model and helps translate asset and operational data into earlier, better-informed decisions across the asset lifecycle. Further information on these investments and their expected benefits is provided in the Digital and Information annexure (Annexure 6).

Efficiency is therefore not confined to expenditure reported under this driver. It is also embedded in how investments classified under renewals, growth, compliance and service improvement are identified, scoped, timed and delivered. The efficiency expenditure shown in Figure 33 should be read as investment for which efficiency is the primary driver and delivered in a different way to digital systems, data and information capability enhancement, rather than as the total investment or benefits associated with improving the efficiency of the infrastructure capital program.

5.4 Capital plan by asset class

This section presents our planned capital expenditure by asset class for the FY28 to FY30 regulatory period. The asset class view provides a practical bottom-up lens on the capital program, showing where investment is directed across the physical and enabling assets that support safe, reliable and efficient water and wastewater services.

The asset class view complements the expenditure driver views presented elsewhere in this annexure. It helps explain how the overall capital program translates into investment in network assets, treatment assets, storage assets, pumping assets, telemetry and supporting infrastructure. It also provides transparency on the asset groups where expenditure is concentrated, the service outcomes the investment is intended to support, and the extent to which the profile reflects growth, renewal, compliance, resilience, service improvement or efficiency requirements.

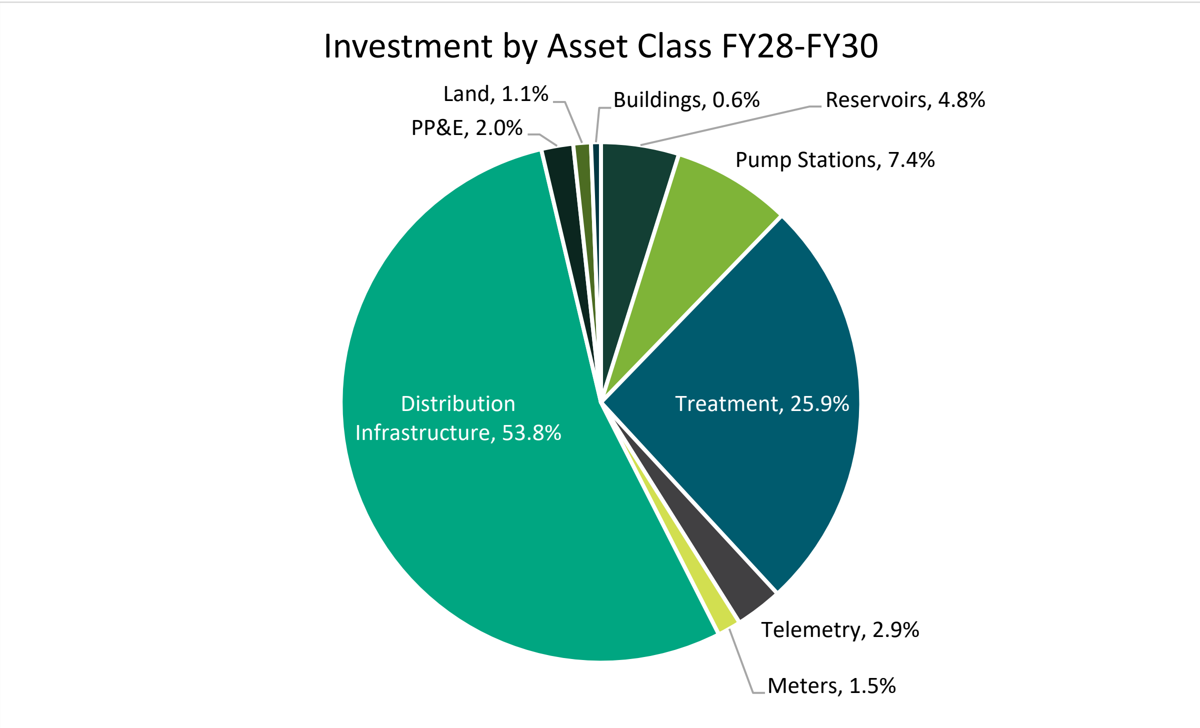


Figure 34 Investment by asset class FY28-FY30

The capital program is expected to be concentrated in distribution infrastructure and treatment which together account for around 80% of total forecast expenditure over FY28-FY30.

Further detail of planned expenditure per asset class is presented in the following sections.

5.4.1 Distribution infrastructure

Planned expenditure on distribution infrastructure is forecast at $969 million over FY28 to FY30, representing 54% of the total capital program. This asset class comprises trunk mains, reticulation mains and rising mains, in each case including their associated fittings.

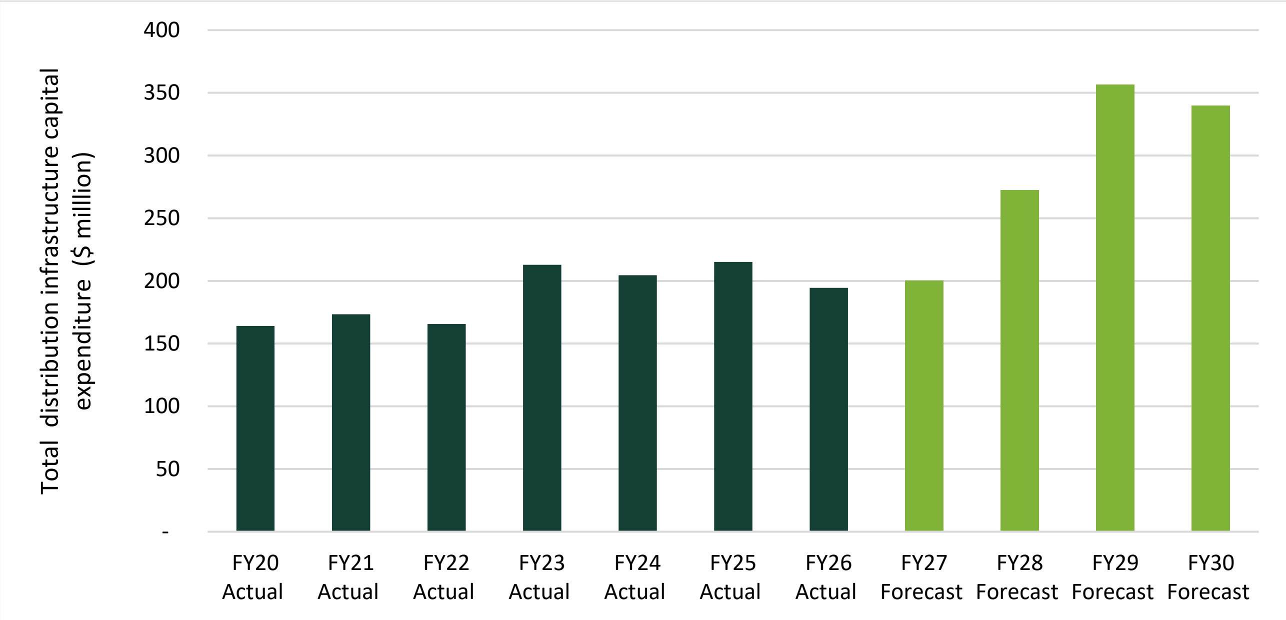


Figure 35 Distribution infrastructure investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

Distribution infrastructure covers the mains and fittings that convey flows across both the water supply and wastewater networks, ranging from large-diameter "backbone" mains down to the local pipes that connect to individual customer properties. Trunk mains are the larger-diameter mains that carry bulk flows across the network. Reticulation mains are the local, smaller-diameter networks that connect the trunk networks to individual properties: on the water supply side these are pressurised pipes with fittings such as valves and hydrants that distribute drinking water; on the wastewater side they are predominantly gravity pipelines with access structures such as maintenance holes that collect wastewater from properties. Rising mains are the pressurised sewer pipes that convey wastewater under pressure from pump stations to a discharge point, typically a treatment facility, where gravity flow alone cannot move the wastewater, and range from local rising mains to large-diameter critical mains serving our major treatment plants. Investment in this asset class is necessary because these mains deteriorate with age and use, leading to leaks, bursts, blockages and service interruptions; because trunk and rising mains carry bulk or pressurised flows with a high consequence of failure; because parts of the network require additional capacity to service population growth; and because parts of the network require improvement to continue meeting minimum service standards for pressure and fire flow.

Expenditure in this asset class spans more than one investment driver across both the water and wastewater networks. Renewal is the largest driver, comprising the condition assessment, replacement, relining, rehabilitation and responsive repair of ageing mains. Consistent with our risk-based approach, lower-risk reticulation mains are generally managed through a reactive, run-to-fail model supported by maintenance services, while higher-risk and critical mains, including trunk mains and pressurised rising mains, which carry a high consequence of failure, are renewed proactively rather than managed on a run-to-failure basis. Renewals are prioritised by asset condition, criticality and consequence of failure, and delivered through dedicated condition assessment and catchment-based renewals programs and individual projects. Growth is the next largest driver, increasing network capacity to service a growing population through capacity upgrades, augmentations and extensions, including major upgrades to large critical mains serving our largest and fastest-growing catchments. Smaller allocations relate to service-driven improvements that maintain minimum service standards for pressure and fire flow, and to compliance. Together, this expenditure is intended to provide capacity for growth while maintaining the integrity and reliability of these conveyance assets and reducing the risk of service interruptions and uncontrolled wastewater discharges.

5.4.2 Wastewater treatment plants

Planned expenditure on treatment plants is forecast at $467 million over FY28 to FY30, representing 26% of the total capital program.

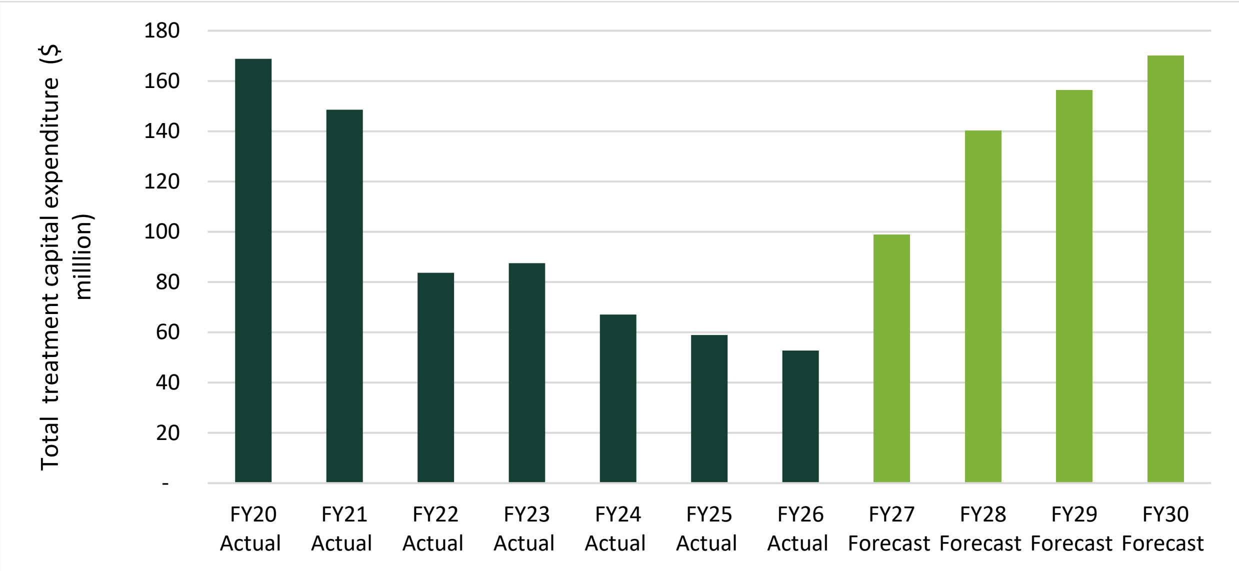


Figure 36 Wastewater treatment investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

The treatment plant expenditure profile reflects a shift in the nature and timing of investment. Higher expenditure in FY20 and FY21 followed a targeted five-year renewal program, with lower expenditure through the middle of the period as that program reduced. The forward increase is driven primarily by growth and compliance requirements, particularly at regional treatment plants. This includes major compliance investment at facilities such as Kilcoy and Beaudesert, together with new and expanded treatment capacity required to support growth in the Ipswich area.

5.4.3 Pump stations

Planned expenditure on pump stations is forecast at $133 million over FY28 to FY30, representing 7% of the total capital program. Expenditure across both relates to a combination of pump station renewals, capacity upgrades to service growth, and works to manage compliance and resilience risks.

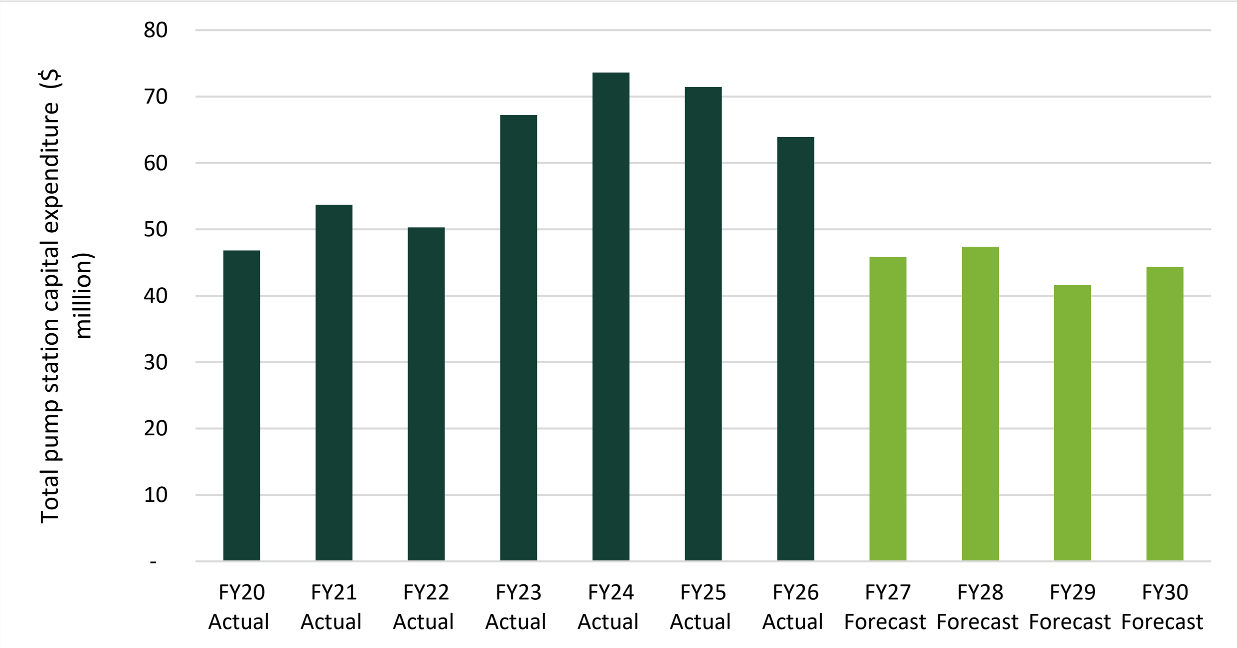


Figure 37 Pump stations investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

Pump stations move water and wastewater through the network where gravity flow alone is not sufficient. Wastewater pump stations lift flows through the wastewater network towards treatment, while water supply pump stations and booster stations maintain pressure and convey water through the supply and distribution system. Each station is typically made up of pumps, motors, variable speed drives, switchboards, generators and associated electrical, mechanical and control equipment, much of which has a shorter effective service life than the civil and structural elements of the station and so requires more frequent replacement. Investment in this asset class is necessary because this equipment deteriorates and reaches the end of its service life, because some stations require additional capacity to service a growing population, and because some sites require works to manage overflow, wet weather, flooding and safety risks.

Expenditure in this asset class spans more than one investment driver across both the water and wastewater networks. Renewal is the primary driver in each, comprising the recurring, condition- and risk-based replacement of ageing mechanical and electrical components (such as pumps, motors, variable speed drives, switchboards and generators) delivered through catchment-based pump station renewals programs and individual site projects. The wastewater program also includes capacity upgrades and augmentations to service population growth, alongside compliance works such as wet weather and dry weather overflow mitigation, inflow reduction, flood resilience and safety upgrades. The water supply program similarly includes booster station augmentations and electrical renewals that support pressure, reliability and water quality across a growing network. Together, this expenditure is intended to maintain safe, reliable and compliant pump station operation and to support the continued delivery of water and wastewater services to existing and growing communities.

5.4.4 Reservoirs

Planned expenditure on reservoirs is forecast at $87 million over FY28 to FY30, representing 5% of the total capital program.

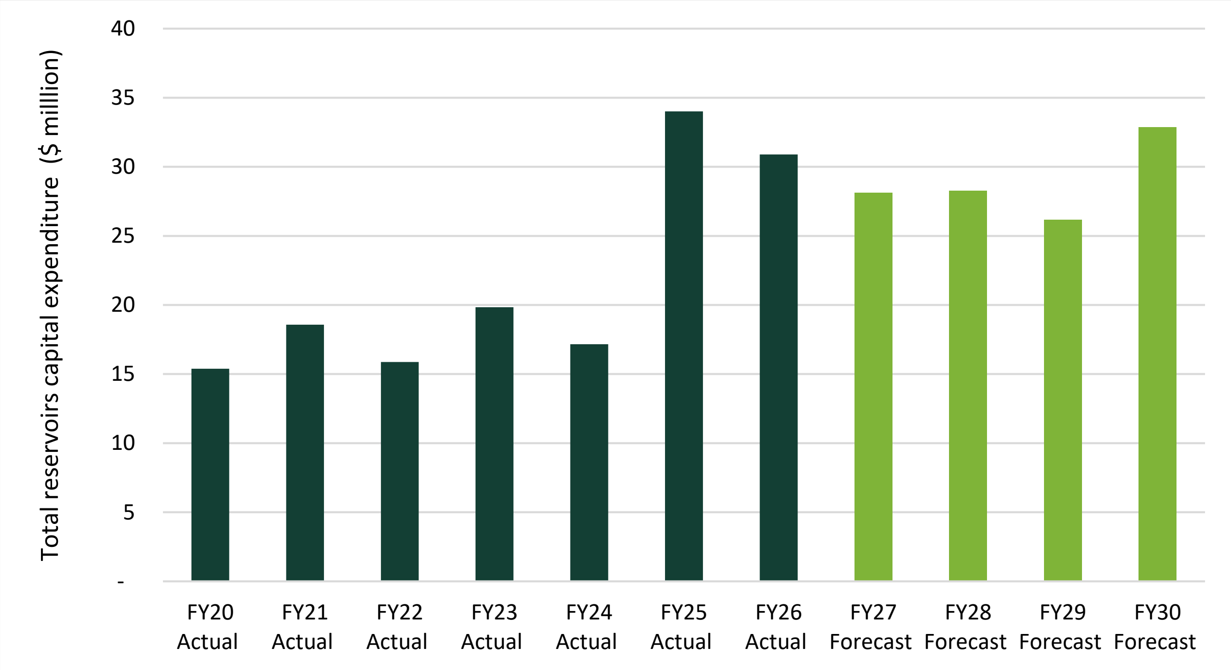


Figure 38 Reservoir investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

Reservoirs store treated drinking water within the water supply network, balancing supply and demand, providing operational and emergency storage, and helping maintain pressure and continuity of supply. They are typically large concrete tanks comprising roofs, walls, floors, columns and joints, together with inlet and outlet pipework, valves, overflow and scour lines, vents, ladders and associated access infrastructure. Investment in this asset class is necessary because the integrity of the roof, walls and joints directly protects stored drinking water from contamination, and because the concrete structures deteriorate with age, through cracking, joint failure and concrete spalling, which can compromise both water quality and structural integrity if not addressed.

Expenditure in this asset class spans more than one investment driver, with compliance the largest. Compliance-driven works protect drinking water quality and public health, in line with Urban Utilities' drinking water quality and public health obligations, and include reservoir roof and wall rehabilitation to prevent contamination ingress, joint and concrete sealing, and the renewal of disinfection (chlorination) equipment. Renewal is the next largest driver, comprising the structural rehabilitation, and in some cases the replacement or decommissioning, of ageing reservoirs, delivered through catchment-based reservoir renewals programs and individual site projects.

5.4.5 Telemetry

Planned expenditure on telemetry is forecast at $53 million over FY28 to FY30, representing 3% of the total capital program. Expenditure is primarily directed to service improvements that expand and enhance monitoring and control across our water and wastewater networks and to the renewal of ageing or obsolete telemetry equipment. Investment is driven by both the need to improve network visibility and control, and the progressive replacement of equipment reaching vendor end of support. When vendor support ceases, access to security updates, technical support and replacement components becomes increasingly limited, increasing cyber security, reliability and operational continuity risks. The program therefore includes a combination of service improvement and renewal expenditure that supports safe, reliable and efficient service delivery.

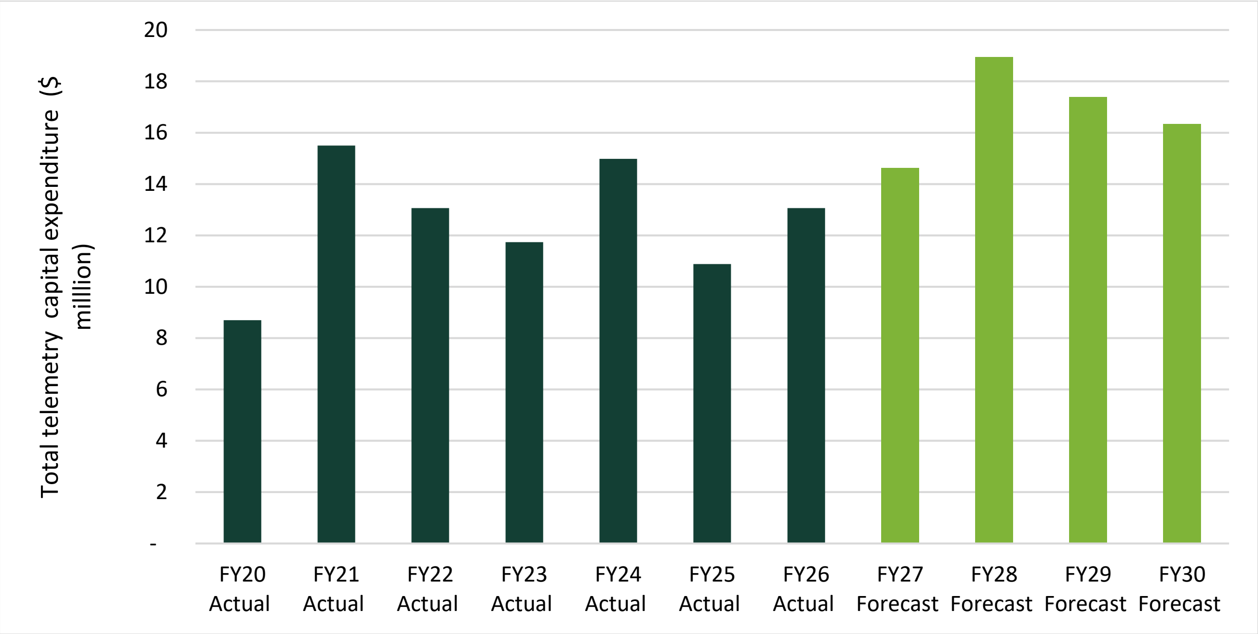


Figure 39 Telemetry investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

Telemetry is the monitoring and control technology that helps us see how our water and wastewater networks are performing in real time. It connects field assets, such as pump stations, meters, sensors and monitoring devices, to central systems so that operators can identify emerging issues, respond sooner and manage the network more effectively.

Planned expenditure in this asset class supports two main outcomes. First, it expands our monitoring capability across the network, giving us better visibility of issues such as wastewater overflows, blockages, leaks, pressure changes and water quality risks before they affect customers or the environment. This includes investment in new monitoring devices, catchment monitoring programs and improvements to our control systems. Second, it renews ageing telemetry equipment as it reaches the end of its supported life, including equipment used to collect, transmit and manage operational data.

This investment is therefore an important enabler of more proactive network management. It supports reliable service delivery, improves operational response, and helps us manage asset risk more efficiently by using better information to guide decisions.

5.4.6 Plant and Equipment

Planned expenditure on plant and equipment is forecast at $36 million over FY28 to FY30, representing 2% of the total capital program. Expenditure in this asset class relates to the fleet replacement program.

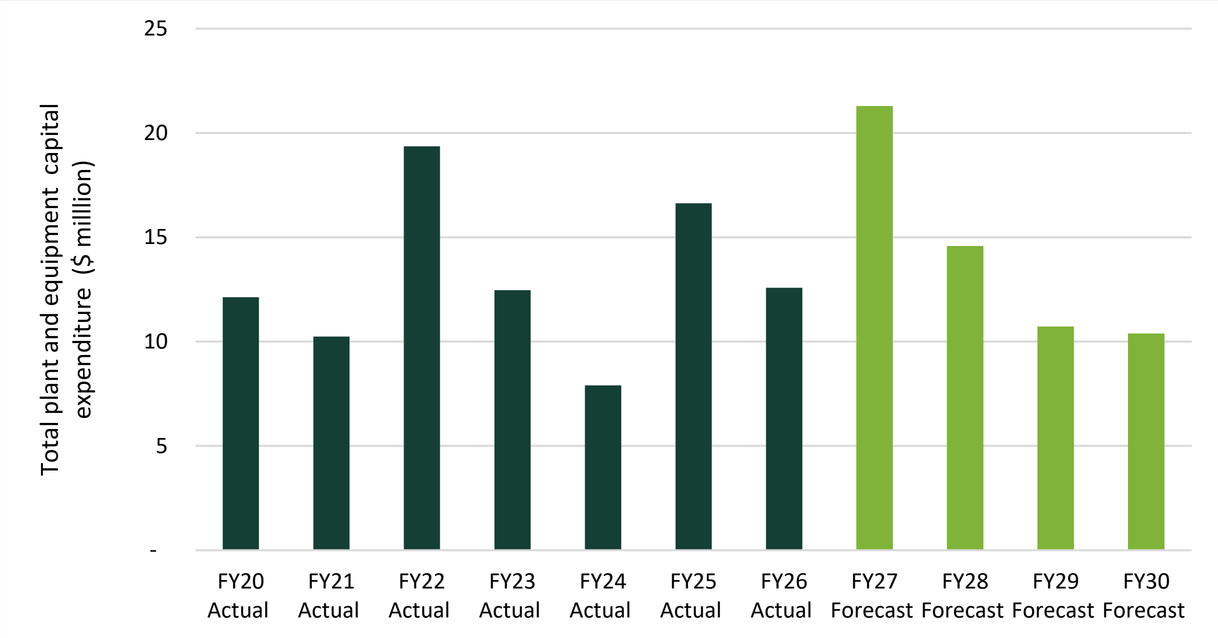


Figure 40 Plant and equipment investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

Plant and equipment comprises our fleet of vehicles and mobile plant, including passenger and light commercial vehicles, trucks, and specialised mobile plant and trailers that are used by operational teams to operate, maintain and respond across the water and wastewater network. The fleet replacement program replaces assets that have reached, or are approaching, the end of their effective service life. This is necessary because asset condition deteriorates with age and use, which increases maintenance costs and unplanned downtime, reduces availability and reliability, and can affect the safety of fleet operations.

The program is a recurring renewal and replacement activity rather than a growth, augmentation or discretionary service improvement program. Assets are generally replaced on a one-for-one, like-for-like basis for both function and cost, with replacement timing informed by an annual review of asset condition, utilisation, maintenance history and whole-of-life cost, and underpinned by a ten-year asset replacement plan that is reviewed each year. It is intended to maintain a safe, reliable and fit-for-purpose fleet that supports the continued delivery of water and wastewater services. It also supports prudent and efficient asset management by replacing assets at the point that minimises their whole-of-life cost.

5.4.7 Buildings and facilities

Planned expenditure on buildings is forecast at $11 million over FY28 to FY30, representing 1% of the program. This asset class includes operational buildings, control rooms, laboratories, depots, workshops and other site-based facilities that support the delivery of water and wastewater services.

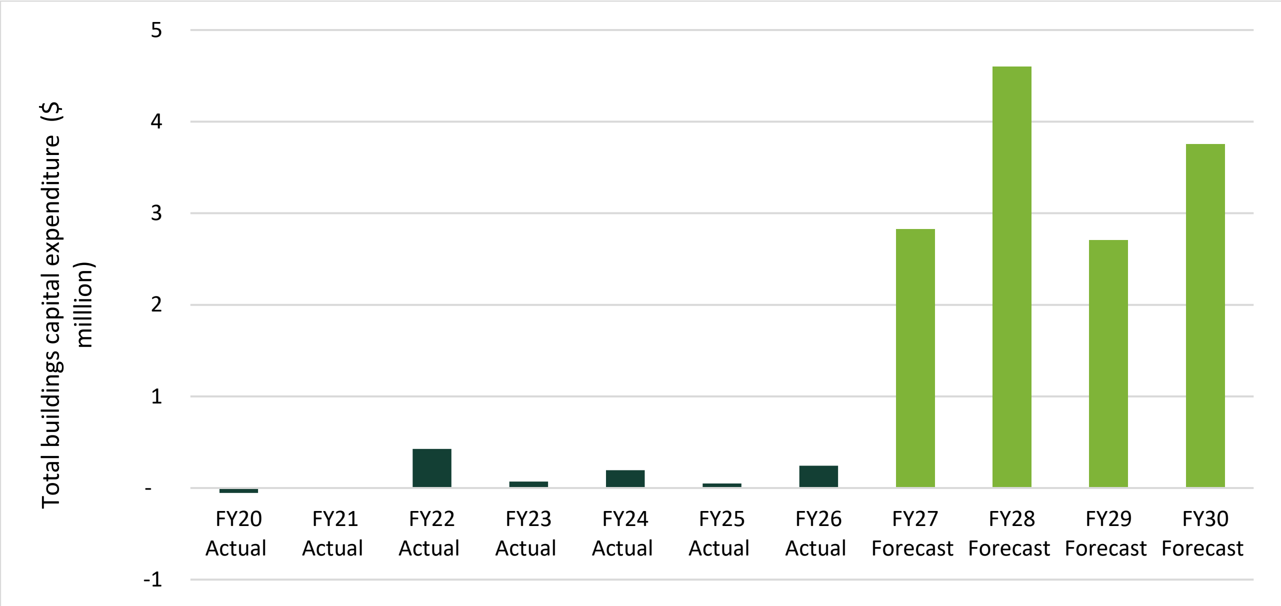


Figure 41 Buildings investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

We have progressively strengthened the management of these assets through more systematic assessment of their age, condition, performance and the risks they present to employees and contractors. This has improved our understanding of renewal and upgrade requirements across the portfolio and supports the prioritisation of investment according to asset condition, safety risk, operational need and whole-of-life value.

The proposed expenditure is primarily directed to renewing deteriorated building components, extending asset life, addressing health and safety risks and, where required, improving compliance with relevant building standards and codes. These needs are incorporated into our facility management planning processes so that works can be prioritised and delivered in a prudent and efficient manner. This is consistent with our asset management approach of balancing cost, risk and performance across the asset lifecycle.

5.4.8 Land

Planned expenditure on land is forecast at [redacted] over FY28 to FY30, representing 1% of the total capital program. Expenditure is primarily associated with acquiring land required for future wastewater treatment infrastructure in the Ipswich and Beaudesert areas.

The need, timing and required characteristics of this land have been established through long-term growth and servicing planning. Wastewater treatment facilities require large sites with acceptable exposure to flood and future climate risks, appropriate separation from sensitive land uses, sufficient environmental buffers and access, and proximity to suitable discharge locations.

Detailed site assessment and acquisition activities are progressing within the identified servicing areas. The forecast expenditure represents the expected cost of land acquisitions required during FY28 to FY30. Expenditure will only be committed once a preferred site has been confirmed through the relevant technical, environmental, planning, commercial and governance assessments.

The proposed acquisitions are enabling investments linked to defined future infrastructure needs, rather than discretionary land banking. Securing land once a preferred site is confirmed provides certainty for future servicing strategies, supports environmental licensing and planning approvals, and reduces the risk that suitable land becomes unavailable or materially more expensive as surrounding development progresses.

Deferring acquisition until treatment capacity is required would delay environmental investigations, regulatory engagement, design and definition of the associated conveyance infrastructure. It could also increase future costs and delivery risks and constrain our ability to provide treatment capacity in time to support forecast population and industrial growth.

[redacted]

Figure 42 Land investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

5.4.9 Meters

Planned expenditure on meters is forecast at $26 million over FY28 to FY30, representing 1% of the total capital program. Expenditure in this asset class relates to the customer meter renewal program.

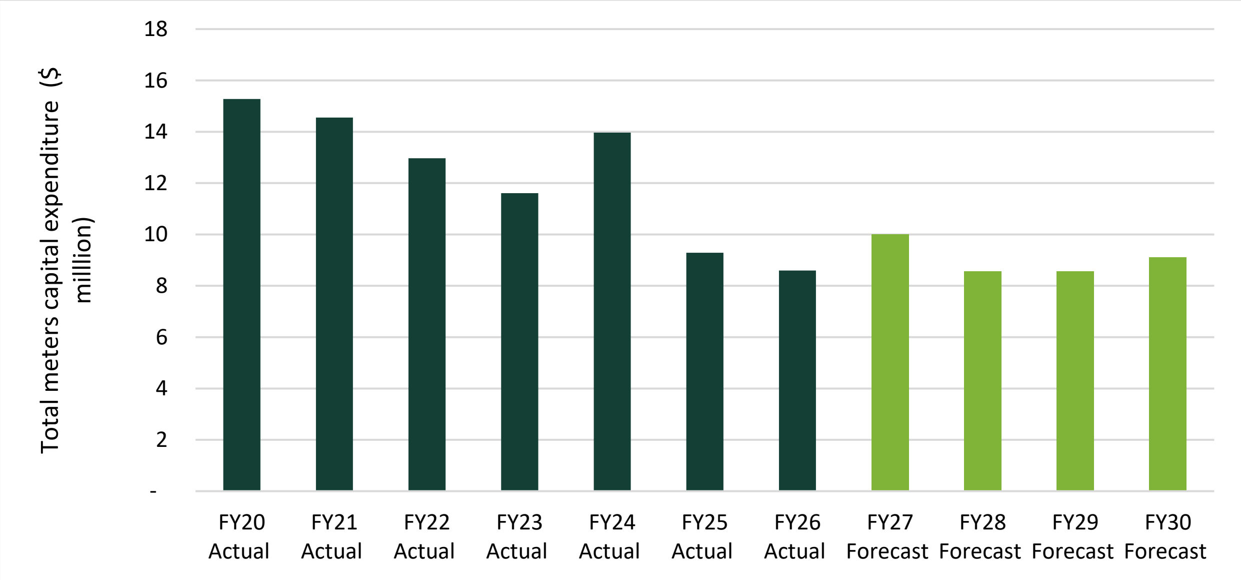


Figure 43 Meters investment FY20-FY26 actuals, and FY27-FY30 forecast (FY27 real)

Customer meters are the point at which water consumption is measured for billing and customer account purposes. The renewal program replaces meters that have reached, or are approaching, the end of their effective service life. This is necessary because meter accuracy can deteriorate over time, which can affect the reliability of consumption measurement and the integrity of customer billing.

The program is a recurring renewal activity rather than a growth, augmentation or discretionary service improvement program. It is intended to maintain the performance of the existing meter fleet and support fair and accurate billing for customers. It also helps maintain reliable consumption data, which supports customer service, revenue management and broader planning activities.

5.5 Infrastructure major projects

Within the broader capital portfolio, a relatively small number of large and complex infrastructure projects account for a material share of planned expenditure over FY28 to FY30. These investments respond to clearly identified renewal, growth and compliance needs across our water and wastewater networks. Many are multi-year projects for which planning, approvals and delivery commenced before, or will continue beyond, the three-year price monitoring period. Table 6 therefore presents both the total forecast investment for each project and the expenditure planned within FY28 to FY30.

Each project has been developed through our integrated planning and capital gateway processes. These processes progressively test and confirm the underlying service need, investment timing, expected benefits, alternative solutions, project risks, costs and delivery approach. They are designed to ensure that capital expenditure is prudent, efficient and provides best value over the life of the asset. Our adaptive planning approach also allows the timing and scope of investments to be revisited as system performance, demand, risk and external conditions change.

Table 6 Major infrastructure projects and forecast capital investment

Project	Location	Primary Investment driver	Total capital investment ($ million)	Planned investment FY28-FY30 ($ million)
Eagle Farm to Luggage Point Rising Main Renewal	Brisbane	Renewal	[redacted]	
S1 Trunk Sewer Augmentation	Brisbane	Growth		
Walloon SP492 to Wulkuraka Sewer Network	Ipswich	Growth		
Caswell St Pumpstation to Lytton Rd Pumpstation Rising Main	Brisbane	Growth		
Z4 Catchment water critical mains renewals program	Brisbane	Renewal		
Hamilton Siphon Rehabilitation – Stage 3	Brisbane	Renewal		
West End Trunk Main	Brisbane	Growth		
Kilcoy RRC Compliance Recycled Water Pipeline	Somerset	Compliance		
Beaudesert Wastewater Treatment Plant - Phase 1	Scenic Rim	Growth		

Note: Total capital investment represents forecast expenditure across the full project lifecycle. Planned FY28 to FY30 investment represents the portion forecast to be incurred during the price monitoring period. All values are in $FY27

The project summaries below explain the need for each investment and the consequences of deferral, the options considered, the basis for selecting the preferred solution, and how the planned scope, cost and timing have been developed. Projects already examined in detail through case studies elsewhere in this annexure are also cross-referenced.

5.5.1 Eagle Farm Rising Mains System 2 Renewal

The Eagle Farm Rising Mains are critical wastewater assets that convey around half of Brisbane's wastewater flows to Luggage Point Resource Recovery Centre. System 2 comprises twin concrete rising mains commissioned in 1952. [redacted] perational restrictions are already required to manage the likelihood of failure, reducing transfer capacity and contributing to wet weather performance constraints across the broader S1 catchment. The current service risk i[redacted] is forecast to increase without intervention.

The need for renewal has been tested through our adaptive planning processes, including consideration of alternative servicing pathways that would have retired System 2 and redirected flows elsewhere. Ongoing monitoring, regional planning and integrated catchment planning have confirmed that renewal remains the preferred long-term response and an essential component of the Lower Brisbane servicing plan. The proposed timing reflects the point at which further reliance on inspections, repairs and operational restrictions is no longer a sustainable means of managing the escalating asset risk.

A comprehensive options assessment considered continued rehabilitation, structural relining and several replacement alignments. Rehabilitation and relining would not provide the hydraulic capacity required over the longer term and would bring forward larger upstream investments. Replacement was therefore identified as the only technically feasible long-term solution. The preferred option comprises approximately 5.5 kilometres of new rising main infrastructure along an alignment that minimises impacts on Brisbane Airport operations, improves maintenance access and preserves flexibility for future network pathways. It achieved the highest overall options assessment score and the lowest whole-of-life cost of the viable replacement options. Subsequent value engineering reduced the forecast project cost by around 25%, providing further evidence that the planned scope and cost have been efficiently developed.

The project is forecast to cost approximately [redacted] and is planned for delivery between FY28 and FY34, with the renewed system targeted to be operational by 2031. Deferral would increase the likelihood of failure of a critical asset supporting wastewater services for around 900,000 equivalent persons. It would also prolong reliance on increasingly intensive and less effective inspections, repairs and operational restrictions, constrain network capacity, increase wastewater overflow risk and potentially bring forward significantly larger upstream capital investments.

5.5.2 S1 Trunk Sewer Augmentation

The S1 Trunk Sewer is a backbone asset servicing a significant portion of Brisbane's inner-city catchment, but a 1.5 km section along Kingsford Smith Drive dating from 1914 now operates at or near capacity during peak flows and comes under further stress during wet weather, creating network-wide overflow risk that will intensify with growth. The preferred solution is a new 2.4 m diameter parallel tunnel of around 1.5 km, together with connection upgrades at Albion and Hamilton and a new odour control unit at Hamilton, at a total investment of approximately [redacted]. This growth-driven investment is examined in more detail in the case study at section 5.3.2.

5.5.3 Walloon SP492 to Wulkuraka Sewer Network

The Western Growth Corridor, comprising Walloon, Thagoona and Rosewood, is experiencing significant population growth, with the connected population forecast to increase from approximately 5,000 equivalent persons to more than 50,000 by 2056. Wastewater from the corridor is currently treated at Rosewood Resource Recovery Centre, which has a licensed treatment capacity of 0.8 ML per day and is forecast to exceed this capacity as growth accelerates. Short-term treatment intensification works are being implemented to manage immediate constraints, but they do not provide a sustainable long-term solution. Further expansion of Rosewood Resource Recovery Centre is constrained by its receiving environment, with treated effluent discharged to Western Creek, an ephemeral waterway with limited dilution capacity. Without intervention, the risk of non-compliance would increase and our ability to service planned development across the corridor would be constrained. The current compliance risk [redacted] is forecast to increase as catchment growth continues if no investment of the type proposed is made.

The Ipswich Integrated Catchment Plan assessed retaining the existing servicing arrangement, further expanding Rosewood Resource Recovery Centre and transferring wastewater to the neighbouring Bundamba catchment. Regionalised treatment through transfer to the Bundamba catchment was identified as the preferred long-term pathway because it provides better environmental outcomes and a lower whole-of-life cost than continued expansion at Rosewood. Subsequent project-level assessment considered gravity and pumped transfer solutions, multiple pipeline alignments and alternative staging approaches. Gravity transfer was found to be infeasible due to topographical constraints, while an alignment within the rail corridor was discounted because of Queensland Rail requirements and associated constructability risks.

The preferred solution comprises approximately 9 kilometres of OD630 sewer rising main from SP492 at Walloon to the existing wastewater network at Wulkuraka, together with upgrades to SP492 and associated odour management infrastructure. The selected alignment follows a combination of local road corridors and private property and provides the best balance of hydraulic performance, constructability and whole-of-life cost. By transferring wastewater into the broader Bundamba catchment, the project reduces reliance on Rosewood Resource Recovery Centre, implements the preferred regional servicing strategy and retains flexibility for future network development.

The project requires a total investment of approximately [redacted] and is planned for completion by 2029. Its timing is linked to the forecast exceedance of Rosewood Resource Recovery Centre's capacity and the need to maintain servicing capability for approved residential and industrial growth. It is the first critical network investment required to implement the regional servicing strategy and is coordinated with associated network and treatment upgrades across the Ipswich wastewater system. Deferral would increase the likelihood of non-compliance and require further short-term interventions that would become progressively more complex and less effective. It would also constrain our ability to service approved growth, potentially affecting development sequencing, while maintaining an Extreme compliance risk and increasing exposure to environmental harm and regulatory action.

5.5.4 Caswell St Pumpstation to Lytton Rd Pumpstation Rising Main

In the Norman Creek catchment of inner Brisbane, the wastewater network around the SP11 Caswell Street system is under increasing pressure from stormwater inflow and infiltration and rapid urban growth, with the catchment population expected to almost double and drive more frequent overflows if no action is taken. The preferred option, which is now subject to more detailed design, investigations and engagement, is a targeted wet weather management solution involving a new 1.7 kilometre pipeline, upgrades to existing wet weather infrastructure and additional pumping capacity between two pump stations. This infrastructure would be operated during extreme wet weather events to reduce the frequency and impact of uncontrolled wet weather overflows elsewhere in the network. It was selected over larger-pipe alternatives as a deliberate cost, risk and service trade-off. This growth-driven investment, including the options assessment and scope optimisation, is further discussed as a case study at section 5.3.2.

5.5.5 Z4 Catchment water critical mains renewals program

The Z4 Green Hill Zone contains approximately 24% of our extreme risk water mains, and is therefore a priority area for targeted renewal. Consistent with the Water Mains Strategic Asset Class Plan, the program applies a risk-based approach that balances the cost of proactive renewal against the likelihood and consequence of failure, responsive repair costs and expected service impacts.

A detailed reassessment of asset condition, failure likelihood and consequence significantly reduced the extent of mains requiring proactive renewal. The preferred program therefore focuses on critical mains within the Brisbane CBD and Games precincts, [redacted] Most extreme-risk reticulation mains will continue to be managed through responsive repair or replacement, supported by low-cost IoT pressure monitoring to improve burst and leak detection, enable faster response and reduce operational impacts.

This targeted approach directs investment to the mains where proactive renewal provides the greatest value, while avoiding approximately [redacted] in capital expenditure compared with broad-scale proactive renewal across the zone. It is consistent with the broader water mains renewal strategy described in Section 5.3.1, which seeks to renew mains only where the risk and cost of continued operation exceed the cost of intervention, thereby avoiding unnecessary early replacement and the substantial costs associated with brownfield construction.

5.5.6 Hamilton Siphon Rehabilitation – Stage 3

The Bulimba-Hamilton Siphon is a critical wastewater asset that conveys flows from Brisbane's southside catchments beneath the bed of the Brisbane River to the Eagle Farm Wastewater Pump Station and ultimately Luggage Point Wastewater Treatment Plant. Commissioned between 1948 and 1954, the twin siphon pipelines service approximately 164,000 equivalent persons and are integral to the broader S1 catchment. [redacted] A staged renewal process was established to restore resilience and redundancy across this critical river crossing. Stage 1 included tunnel preparation works, Stage 2 covered Pipe A renewal, and Stage 3 covers Pipe B renewal.

A comprehensive options assessment considered rehabilitation, replacement and alternative conveyance solutions, including relining technologies, alternate pipe materials and new river crossings. Replacement of the siphon infrastructure within the existing tunnel corridor was identified as the preferred long-term solution on the basis of constructability, operational performance, risk reduction and whole-of-life cost. Stage 3 will replace Pipe B and the new infrastructure will deliver associated operational improvements. Completion of Stage 3 will allow any temporary enabling works to be decommissioned and restore long-term redundancy and resilience in our network.

Stage 3 requires a total investment of approximately [redacted], with timing driven by completion of the Pipe A renewal works. Deferral would prolong reliance on temporary infrastructure, increase operational and maintenance complexity, and extend exposure to service risk. It would also delay restoration of the network's intended level of service and resilience, increasing exposure to environmental, customer and regulatory impacts[redacted].

5.5.7 West End Trunk Main

The Highgate Hill Pressure Zone is experiencing increasing demand associated with growth and redevelopment across West End, South Brisbane and Woolloongabba. The existing trunk water network is approaching capacity and is already unable to consistently maintain target pressure standards for some customers. Without augmentation, network performance is forecast to deteriorate further, particularly during peak demand periods and as planned growth occurs. Additional network capacity is also required to support the refurbishment of the Highgate Hill Reservoir, [redacted].

The need for additional trunk capacity was identified through the Z1 Wellers Hill Integrated Zone Plan and subsequently reassessed through the Woolloongabba Priority Development Area growth review and Z1 adaptive planning. Multiple augmentation options were assessed through the Stage 2 business case against hydraulic performance, resilience, constructability, cost and stakeholder impacts. The preferred solution comprises approximately 2 km of DN375 trunk water main through West End, together with a new pressure reducing valve connection and associated network tie-ins. This option provides the required increase in supply capacity, improves resilience within the Highgate Hill Pressure Zone, and creates the operational flexibility needed to undertake the reservoir refurbishment while maintaining service.

The project requires a total investment of approximately [redacted] and is scheduled for completion by 2028. Its timing reflects both forecast demand growth and the need to establish alternative network capacity before the Highgate Hill Reservoir is taken out of service. Deferral would increase the likelihood of low-pressure events and service disruptions across the pressure zone as demand continues to grow. It would also constrain the planned reservoir refurbishment, prolonging exposure to an Extreme asset risk and increasing the potential of future water quality, reliability and customer service impacts.

5.5.8 Kilcoy RRC Compliance Recycled Water Pipeline

The Kilcoy Resource Recovery Centre is a small regional wastewater facility in the Somerset service area that has experienced challenges meeting its compliance requirements, , driven by low creek flows and insufficient dilution during extended dry periods. The project delivers a Stage 1 response, comprising a new transfer pump station and a 2.1 km recycled water pipeline to the Woolmar site, around 10 ML of new storage, and an expanded irrigation scheme, deferring the larger Stage 2 treatment plant until it is required. This compliance-driven investment, including how the scope, timing and staging were tested before commitment, is examined in detail in the compliance case study at section 5.3.3.

5.5.9 Beaudesert Wastewater Treatment Plant -Phase 1

Beaudesert is experiencing rapid residential growth, while the Bromelton State Development Area is expected to generate substantial industrial development over coming decades. The existing Beaudesert Wastewater Treatment Plant (WWTP) has reached both its treatment capacity and environmental licence limits and cannot accommodate forecast growth. [redacted]

A comprehensive options assessment considered conventional, natural and emerging treatment technologies. Options were evaluated against environmental performance, operability, site footprint, delivery timeframe, whole-of-life cost and alignment with future receiving-water requirements. A membrane bioreactor treatment plant was identified as the preferred solution. It provides the required nutrient and pathogen removal, can be delivered within the necessary timeframe, requires a comparatively compact footprint and is compatible with our existing operational capability. It also delivers the lowest whole-of-life cost of the options assessed.

The project requires a total investment of approximately [redacted] and is scheduled for completion by 2031. Its timing is driven by accelerating growth, increasing wastewater flows and the need to demonstrate reliable treatment performance before Seqwater commissions the downstream Wyaralong Water Treatment Plant. Deferral would require progressively more costly temporary augmentation as individual treatment processes reach capacity. These interim measures would increase both capital and operating costs without proving the enduring capability of the preferred solution, while increasing environmental and compliance risk. Delay would also constrain planned residential and industrial growth, increase the likelihood of regulatory action, and potentially affect commissioning of the Wyaralong Water Treatment Plant. Delivery by 2031 is therefore required to maintain compliance, protect the receiving environment, and support planned regional growth and future l water supply outcomes.

5.6 Brisbane 2032 Olympic and Paralympic infrastructure

The Brisbane 2032 Olympic and Paralympic Games will create a significant and concentrated uplift in visitor activity, workforce activity and operational demand across South East Queensland. Much of this activity will be focused on established inner-Brisbane catchments that are already among the most built up parts of our network. Our role is to ensure that water and wastewater services remain safe, reliable and resilient before, during and after the Games, not only for Games venues and operations, but for the surrounding communities that depend on the same infrastructure every day.

The investment also has an enduring purpose beyond 2032. Major Games precincts are expected to transition from temporary event capacity to permanent community, residential and mixed-use demand, including the athletes' village, the new aquatic centre and other legacy facilities. Much of the network augmentation required to support Games readiness will therefore continue to serve the city long after the event. The investment accordingly reflects a combination of Games readiness, service reliability and enduring growth drivers. Relevant business cases will identify and apportion these drivers, including the extent to which costs relate to baseline service needs, Games-driven timing or scope, and lasting precinct demand, in line with our established prudency framework. Planning has commenced to allow us to support a successful Games while protecting core service obligations, public health outcomes and long-term value for customers.

We are undertaking this planning through sustained engagement with the State, coordinating authorities, local government and other infrastructure providers. This coordination is essential because the timing, sequencing and scope of water and wastewater investment depends on the final precinct designs, construction programs, access arrangements, easements and approvals for the broader Games infrastructure program.

5.6.1 Scope of work

Investment to support the Games is identified as a separately tracked stream within our Capital Investment Plan, distinct from business-as-usual service obligation investment. Current planning identifies in the order of approximately $300 million of network infrastructure initially required for the Games, to support the Victoria Park and Bowen Hills priority Games precinct.

This is a preliminary, concept-level estimate that will be refined through subsequent precinct engagement with The Games Independent Infrastructure and Coordination Authority (GIICA), design and gating stages, and it should be treated as a preliminary indicator rather than a final program cost.

The current estimate reflects a high-level assessment of the priority inner-Brisbane precincts identified to date, including the new Brisbane Stadium, National Aquatic Centre, Brisbane Athletes Village and Brisbane Showgrounds. Figure 44 provides publicly available context for the location and extent of these priority precincts. Our current assessment indicates that servicing these precincts is expected to require new and augmented water infrastructure and, most significantly, wastewater infrastructure to support Games operations, peak event demand and the lasting demand that follows. The estimate does not yet include the full impact on treatment plants and reservoirs, or the requirements of the remaining Olympic and Paralympic venues. These further components are being assessed through subsequent stages, have not yet been quantified, and are expected to add to the total.

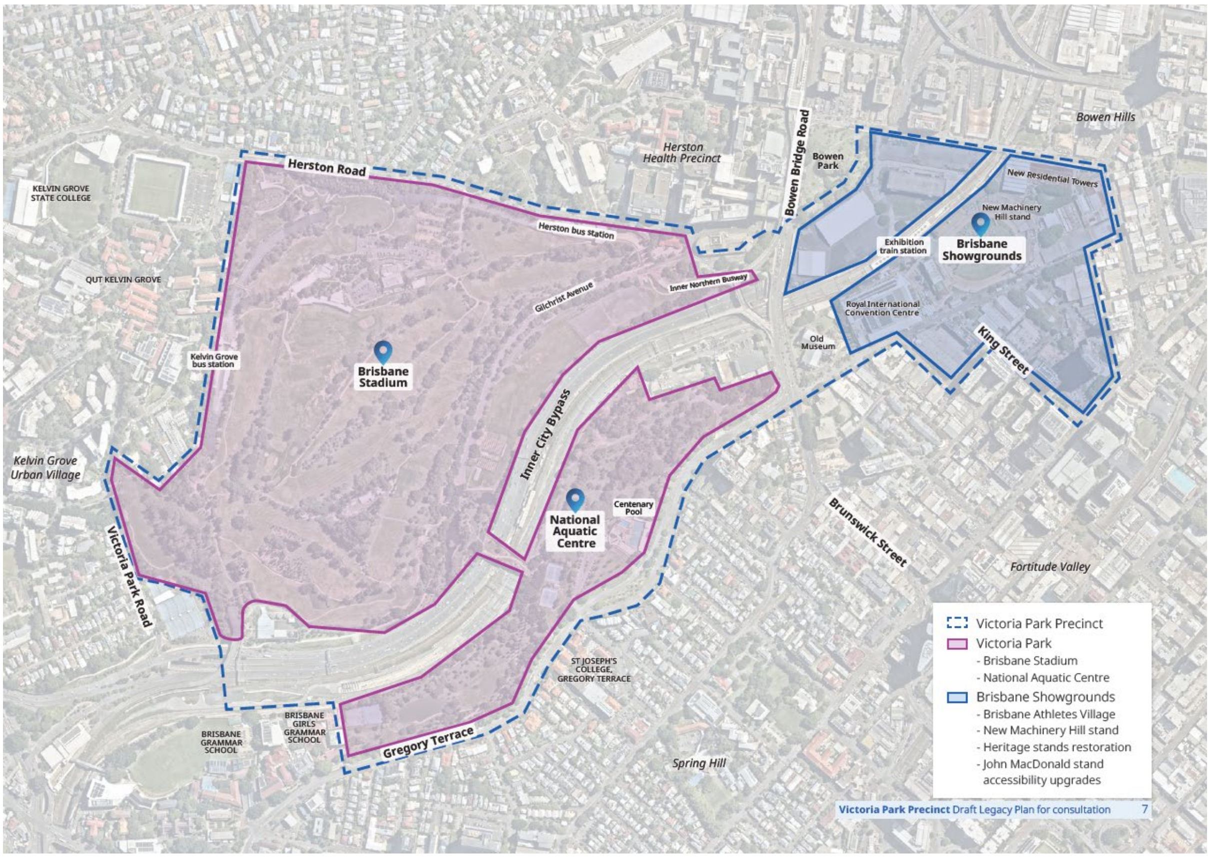


Figure 44 Victoria Park Precinct Draft Legacy Plan – proposed precinct and key 2032 venue locations[67]

While the Queensland Government has now released a draft Legacy Plan for the Victoria Park Precinct, precinct and venue planning continues to evolve and detailed servicing requirements are not yet finalised. It is based on preliminary planning assumptions, benchmarked to comparable major event requirements, while detailed venue master planning is completed by

[67] Queensland Government, Department of State Development, Infrastructure and Planning, Victoria Park Precinct Draft Legacy Plan, August 2026

the coordinating authorities. We are progressing the work in stages through our standard investment gated process, with priority precincts assessed first, followed by treatment and reservoir impacts and then the remaining venues. This allows scope and cost to be refined as design information becomes available, while maintaining a clear evidence base for prudency and efficiency.

Early action focuses on works where the service need is sufficiently clear, including water-network augmentation and the acceleration of planned renewals in affected catchments where this is prudent. This reduces exposure to construction cost escalation, compressed delivery timeframes and the risk that critical works cannot be completed in time for Games readiness, while preserving a clear distinction between baseline service needs and Games-driven acceleration or scope. The staged process also avoids premature commitment to works that depend on design decisions that have not yet been finalised. Early planning and design works are already underway, with delivery required through the late 2020s so that critical infrastructure is operational well ahead of the Games.

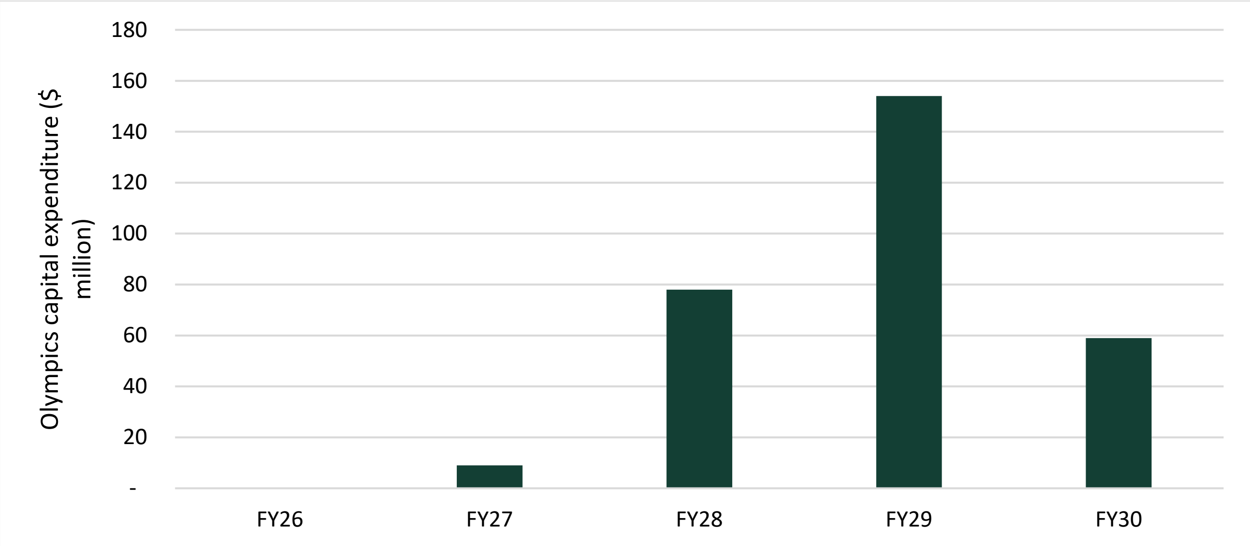


Figure 45 Olympic readiness investment FY28-FY30 (real $FY27)

The scope, funding basis and cost allocation for this investment remain subject to active engagement with the relevant government parties, and funding for the water and wastewater infrastructure required to service the Games has not yet been confirmed.

This investment is driven predominantly by the accelerated timing, scope and Games-time peak demand associated with the event, over and above the baseline service and growth needs of the affected catchments. In accordance with the *Brisbane Olympic and Paralympic Games Arrangements Act 2021* (Qld), Games-related infrastructure is exempt from the infrastructure charges that would ordinarily apply, this removes the usual mechanism for recovering these costs from the development or activity that gives rise to them. Urban Utilities expect that an appropriate finding arrangement will be established for infrastructure costs directly attributable to the Games. This would ensure that these costs are appropriately allocated and avoid the potential for Games specific costs to be recovered from the broader customer base. Our position is that the funding treatment should reflect the underlying driver and beneficiary of the investment, while protecting customers from costs that are not attributable to their service needs.

Consistent with that position, the Games-driven component of this investment is identified separately. Baseline service and renewal needs in the affected catchments continue to be planned and funded through our ordinary program, with only the incremental Games-driven cost held within this separately tracked stream. We are engaging with the State and Games authorities to confirm an appropriate funding pathway, including the appropriate role of State funding for infrastructure required predominantly to service Games precincts, agreed delivery responsibilities, and the streamlined approvals and easements required to meet the delivery timeline.

Funding certainty is required to enable full delivery, while an early start on least-regrets works is required to meet Games timelines and contain cost escalation. The estimates above will continue to be refined as venue designs are finalised and further precinct, treatment and reservoir impacts are assessed. We have separately identified this investment so that its prudency, efficiency and funding basis can be transparently assessed.

5.7 Delivering the program efficiently

The way we procure and deliver our capital program directly affects prudency and efficiency outcomes for customers. A well-governed planning framework only delivers value if the resulting investments are contracted and executed in a manner that maintains competitive tension, controls costs, aligns commercial incentives with customer outcomes, and continuously improves delivery performance. This section describes our delivery model, including the procurement policy and principles that govern it, the contracting frameworks through which it is executed, the delivery partnerships that carry it out, and the programmatic approach that ties it together. Together, these arrangements provide the principal means by which we will deliver our capital efficiency commitment for the FY28-FY30 period.

5.7.1 Our approach to capital efficiency

We are committing to a capital efficiency target of 2% across our FY28 to FY30 infrastructure capital program. We will deliver the full program required to keep services safe, reliable and compliant while recovering 2% less from customers than the bottom-up build of the program (as proposed by Urban Utilities) would otherwise require. We will achieve the target while maintaining project scope, service standards and all investment required to meet demonstrated needs.

This commitment is additional to the prudence, prioritisation and affordability discipline already applied in shaping the planned capital program and our adaptive planning approach. As described in Section 4, the portfolio development process has already deferred lower-risk expenditure, challenged project need, scope and timing, and moderated the program to a level consistent with our risk appetite and customers' affordability tolerance. Those program-shaping decisions are reflected in the bottom-up baseline and will not also be counted towards the 2% efficiency target. The target therefore represents further gains to be achieved in delivering the program after those prior adjustments.

The efficiency commitment will be delivered principally through:

- Our long-term delivery partnerships under NG4D have embedded efficiencies in excess of 2%, [redacted] hese arrangements are reinforced by earlier involvement of construction and engineering partners in planning and design, supporting better scope development, constructability, innovation and delivery efficiency

- Standardisation, modularisation and off-site fabrication, which reduce time on site, rework and unit costs for repeatable work
- Smarter work packaging and procurement, including bundling related works, multi-year renewals program and sequencing procurement to maintain competitive tension and to secure committed supply-chain capacity and long-lead items
- Capital and operating expenditure trade-offs, particularly through digital investment in IoT, predictive analytics and automation, and
- cost intelligence and benchmarking at each gateway stage, supported by independent review of delivery partner estimates before capital is committed.

The remainder of this section explains the delivery partnerships, procurement practices, program controls and repeatable delivery approaches through which these efficiencies will be pursued.

5.7.2 Procurement strategy and contracting framework

Our procurement activities are governed by a Board-approved Procurement Policy (POL81) that establishes seven core principles: value for money, transparency and accountability, corporate social responsibility, risk management and compliance, scalability and efficiency, innovation, and service[68]. The policy applies to all procurement of goods and services and explicitly requires that procurement approaches be commensurate with the risk and value of each activity, consistent with the proportionality principle applied throughout our capital governance framework.

Procurement is managed through a suite of supporting procedures covering capital and infrastructure procurement, high-value and high-risk indirect procurement, and low-value and low-risk purchasing, with the level of process and oversight matched to the risk and value of the activity. Procurement approval thresholds are aligned to the financial delegations in MAN3, ensuring consistency with the broader governance framework.

The procurement function has developed significantly since our establishment. A dedicated Procurement and Supply Chain team was established in 2013, and in October 2024 we launched a Procurement and Supply Chain Strategy that sets out a multi-year transformation program to uplift capability across policy, procedures, processes, systems and people. Key elements include embedding lifecycle category management across key spend areas (including maintenance, engineering, biosolids, electricity and digital and technology), a review of enterprise contract management to improve efficiency and value realisation, and implementation of a supplier risk management platform (Avetta) to maintain continuous assurance over supply chain compliance and performance.

We benchmark our procurement practices against leading professional and industry standards. All procurement team members hold current memberships with the Chartered Institute of Procurement and Supply (CIPS), and we hold the CIPS Corporate Ethics Certification. We also participate in Water Services Association of Australia (WSAA) procurement forums to benchmark practices against peer utilities and share sector good practice.

[68] Urban Utilities, Procurement Policy (POL81), Revision 2, March 2025

Our contracting framework is structured to allocate risk to the parties best placed to manage it and to create commercial incentives aligned with efficiency delivery and customer value.

The core principle is that risks should be allocated to the party best positioned to manage them, and that commercial arrangements should create financial consequences for both cost overruns and savings[69]. This is achieved through shared-risk commercial models, including pain/gain provisions rather than fixed-price or lump-sum arrangements. Our program management frameworks are structured on this basis.

Procurement for capital and infrastructure is undertaken in accordance with Queensland State Procurement Policy requirements and our Procurement Policy (POL81), with all significant procurement subject to probity oversight. Board reserved powers include approval of procurement strategies and significant procurement plans where total arrangement values exceed [redacted], and approval of non-standard procurement processes above [redacted][70].

5.7.3 Delivery model and partnerships

Our capital delivery model is structured around long-term partnerships rather than project-by-project contracting. This programmatic partnership approach reflects established good industry practice for large-scale regulated infrastructure programs, enabling continuity of working relationships, reducing indirect costs over time, facilitating continuous improvement across the program, and allowing partners to invest in the systems, processes and workforce capability needed to deliver efficiently at scale. As a long-term asset owner and operator, we seek partnerships that support whole-of-life asset outcomes rather than project-specific optimisation, helping ensure investment decisions continue to deliver value over the life of our assets.

5.7.3.1 Program Management Approach (PMA)

Established from 2017, the PMA was our primary capital delivery framework through to December 2025, delivering over $1 billion of infrastructure across around 200 projects. It operated as an end-to-end program management model with shared-risk governance tailored to the focus, scale, risk profile and complexity of each investment. Its key structural features included asymmetric pain/gain provisions to create efficiency incentives, a risk model that returned surplus risk to the client, and a KPI framework that drives stretch targets. The PMA was directly comparable to frameworks adopted by regulated peers in the Australian water sector, including Sydney Water's Partnering for Success and SA Water's framework contracts.

The PMA delivered measurable outcomes: pre-market engineering and design costs were reduced from 11.5% to 5.2% of capital; Stage 2 to Stage 5 development and engineering costs were reduced from 19.7% to 13%; and the proportion of projects meeting cost, time and benefit outcomes against their approved business case improved from around 20% to around 90%, and safety performance materially improved in the final three years of the model, including the lowest injury rate recorded under the PMA and the longest period without an injury.

The PMA framework was also subject to ongoing assurance: internal reviews aligned with our governance processes, and independent external reviews by PwC and KPMG. Findings from these reviews were actioned through updates to the relevant framework documents and were reflected in the revised commercial model adopted under NG4D. With new awards under the PMA concluded in December 2025, the maturity it built and the lessons it generated, together

[69] Urban Utilities, Program Management Approach (MAN87), Version 6
[70] Urban Utilities, Delegation of Authority Manual (MAN3), Procurement reserved powers.

with the improvement opportunities identified through these reviews, identified further optimisation opportunities, which the Next Generation 4D program was designed to capture.

5.7.3.2 Next Generation 4D (NG4D)

NG4D is now our capital delivery framework. With an Integrated Services Provider and two Delivery Groups now mobilised, the Integrated Services Provider acting as the planning and services partner, and each Delivery Group bringing together a construction partner and an engineering designer as an integrated consortium, it retains the proven elements of the PMA (program management discipline, structured governance, probity and competitive procurement) [redacted]

Bringing partners into planning and design early also allows capability, systems and workforce to be built ahead of the delivery peak, so the ramp-up is planned and progressive rather than reactive. [redacted].

The PMA's term concluded in December 2025, and its success also identified opportunities for further optimisation through the next-generation model. NG4D was procured and mobilised specifically to scale up delivery capability ahead of a forecast step-up in the capital program, including a multi-billion-dollar program of investment over the coming decade. It gives us committed delivery capacity, supply-chain depth and engineering resources that are already contracted and being stood up, rather than yet to be sourced. Bringing partners into planning and design early also allows capability, systems and workforce to be built ahead of the delivery peak, so the ramp-up is planned and progressive rather than reactive.

NG4D also responds to structural improvement opportunities identified through PMA reviews and ongoing continuous improvement. Under the PMA, engineering partners were generally contracted as subcontractors to framework partners, delivery accountability began later in the asset lifecycle, responsibilities for option development were split across multiple partners, and the program was coordinated across a larger number of separate contracts. The reviews identified opportunities to improve scalability and involve delivery partners earlier during business case development.. NG4D addresses these issues by bringing delivery partners into the planning and business case stages, establishing clear accountability for option development following project identification, and reducing overlap between engineering and construction partners.

How NG4D improves delivery performance. NG4D is a fully integrated, outcome-driven model in which all participants operate as one team, with shared commercial incentives and KPIs aligned to portfolio-wide success. Its principal features, and the benefits they are designed to deliver, are:

- **Integrated Delivery Groups.** Construction and engineering partners are brought together within each Delivery Group, with the engineering partner contracting directly rather than as a subcontractor. This establishes shared leadership, governance and accountability for risk and performance, creating a genuine "one-team" approach without commercial barriers. Co-location of partner teams further strengthens collaboration, supports timely decision making and reinforces a no-blame culture. The model also embeds structured engagement with key internal stakeholders, including operations, maintenance, communications, community and infrastructure teams, so that operability and whole of life considerations are incorporated from the earliest stages.

- **Business Integration.** Delivery partners are embedded more deeply within Urban Utilities than under traditional project delivery models. Rather than engaging primarily through the client-side project leadership team, they establish working relationships across planning, operations, maintenance and other business functions. This streamlines communication and decision making, enables earlier identification and resolution of risks and constraints, and gives delivery partners a stronger understanding of operational priorities and customer outcomes. The result is more informed planning, improved stakeholder alignment and greater opportunity for innovation and continuous improvement across the asset lifecycle.
- **Earlier partner involvement.** Delivery Groups assume accountability from Stage 2 (post Gate 1), rather than from Stage 4 (post Gate 3) under the PMA, bringing construction and engineering expertise into planning and design where decisions have the greatest influence on whole of life cost, risk and performance. This was trialled under the PMA and is already delivering efficiencies in phase durations. The Integrated Services Provider is engaged from the strategic and integrated planning stage and remains involved across the asset lifecycle, transitioning to a support role through delivery.
- **A streamlined contracting structure.** The number of delivery contracts has been reduced from seven to three, simplifying governance, improving alignment across delivery packages, reducing interface risks and eliminating duplication between planning and delivery activities.
- [redacted]
- **Maintained competitive exposure**. Expenditure delivered under NG4D remains subject to competitive market procurement, with work packages competitively tendered and supported by multiple quotations. This preserves competitive tension throughout the program while enabling the efficiency benefits of an integrated delivery model.
- **Portfolio-level governance.** A Portfolio Board, including executive leadership from the delivery partners, provides strategic oversight and portfolio-wide alignment, and a no-blame framework drives collaboration and collective accountability.
- **Innovation in delivery methods.** Earlier collaboration and integrated delivery create greater opportunities to adopt innovative construction and delivery approaches, including trenchless relining, off site manufacturing, modularisation, increased standardisation and greater integration of operational technology, improving productivity and reducing whole of life costs.
- **Consolidating delivery**. Consolidating to two partners is expected to enhance investment efficiency by providing a more consistent pipeline of work, supporting

sustainable workloads across development and delivery activities while fostering the development of experienced, long-term teams across both delivery partners and the subcontractor ecosystem.

Savings and efficiency. NG4D is structured to deliver savings through lower commercial fees, reduced duplication across the planning and delivery interface, and productivity gains from early involvement and standardisation. We have established program-wide efficiency targets for NG4D:

- 80% standardisation of selected solutions through repeated and standard designs;
- 20% additional value delivery through smarter design and supply-chain innovation; and
- a 50% reduction in time onsite through standardisation, modularisation and off-site fabrication.

These targets build on the cost efficiencies already demonstrated under the PMA. They are solution-level targets and the program-wide capital efficiency target reflects the net-effect we expect these levers to deliver across the portfolio over FY28-FY30. As NG4D matures and the capital program ramps up, work is underway to embed these practices across the program and progressively realise the expected efficiency gains. Together with smarter work packaging and procurement, these NG4D-driven gains are the primary means by which the capital efficiency target will be delivered.

Procurement and assurance. NG4D was procured under a Significant Procurement Plan approved by the Board in November 2023, through a competitive open-market Invitation to Offer and a rigorous, multi-stage commercial and technical evaluation. External probity, legal, commercial and procurement advisors were engaged to provide assurance over the process and to confirm that the commercial arrangements deliver genuine efficiency gains. Investment decisions remain subject to Urban Utilities' existing investment governance framework, ongoing program management office costs are reviewed annually through the budget process, and contractual mechanisms are in place to manage cost escalation.

5.7.4 Programmatic approach

The delivery model, under the PMA and now NG4D, operates at the portfolio level rather than the individual project level. Delivery is governed through a structured program management framework that provides oversight, performance monitoring, cost control and continuous improvement across the capital portfolio. The following features are relevant to delivery discipline and cost efficiency:

- **Program governance.** Delivery is governed through a tiered governance structure operating at project, program and portfolio levels. Individual projects are managed by project teams, reviewed through Program Leadership Groups (PLGs), and escalated to the Executive Leadership Group (ELG) and Portfolio Board where required. This provides clear accountability, with delivery performance, cost and emerging risks reviewed at the appropriate level and corrective action taken where necessary.
- **Annual delivery assessments** are conducted for one, five-year and ten-year investment forecasts, with each project scheduled with input from experienced construction professionals, reducing the risk of overcommitment and delivery failure[71].
- **Portfolio performance monitoring.** Each program undergoes a structured monthly performance review covering earned value, schedule performance, forecast costs and

[71] Urban Utilities, Program Management Approach (MAN87)

delivery progress. Results are consolidated and reviewed at portfolio level, providing consistent visibility of delivery performance across the capital portfolio. Comparison of planned and actual performance enables emerging cost and schedule variances to be identified early, supporting timely intervention, reprioritisation and resequencing where required.

- **Continuous improvement.** Lessons learned from completed projects are captured in a formal register and applied across subsequent projects to improved delivery performance, standardisation and execution[72].
- The **Capital Estimating Guideline** (PRO688) governs the methodology and standards for cost estimating across all gateway stages, providing a consistent and auditable basis for the cost estimates that underpin business case approvals and RAMP submissions. Estimates progress through defined accuracy classes (Class 5 at Gate 1 through Class 1/2 at RAMP) with each stage subject to Cost Intelligence team review, ensuring that cost estimates become progressively more reliable as investment commitments increase[73].

5.7.5 Systemised delivery and efficiency in rolling programs

A key feature of our capital delivery approach is the use of systematised, repeatable programs that convert lessons from individual projects into enduring delivery efficiencies. Where a recurring body of similar work can be identified across the network, we structure it as a rolling program and standardise the prioritisation, design, procurement and delivery approach. Lessons from each tranche are incorporated into the next, reducing rework, simplifying delivery and enabling procurement efficiencies through repeat volume. This creates more consistent and predictable outcomes and can progressively reduce unit costs. The EROS Flap Valve Replacement Program demonstrates this approach in practice.

Case study - EROS Flap Valve Replacement Program

Emergency Relief Overflow Structures (EROS) provide controlled relief points that protect the wastewater network during peak wet-weather conditions. At some locations, ageing flap valves were no longer sealing effectively, allowing stormwater ingress and tidal backflow into the network. This adds to inflow and infiltration pressures by increasing hydraulic loading, reducing available conveyance capacity and increasing downstream treatment and operating costs.

Rather than treating each site as a bespoke intervention, we established a rolling program delivered in sequential batches with our delivery partner. Since the program commenced in September 2021, more than 500 EROS sites have been upgraded.

Sites are prioritised using a consistent, risk-based methodology that combines GIS desktop assessment with a defined prioritisation hierarchy, targeting locations with the greatest exposure to tidal and stormwater inflow. Each site then follows a repeatable workflow comprising condition assessment and inspection, valve selection, installation and refurbishment. Bespoke engineering has largely been replaced by selection from a defined set of proven valve types, including external and inline duckbill valves and inline check valves. Each valve type is suited to particular site conditions and requires minimal ongoing maintenance.

[72] Urban Utilities Program Management Approach (MAN87).
[73] Urban Utilities, Capital Estimating Guideline (PRO688), Section 2.

Across successive batches, the program has achieved an approximately 30% reduction in average cost per site. This reduction reflects the combined effect of standardised delivery methods, repeated mobilisation, lessons incorporated from earlier batches, improved procurement strategies and repeat volume. The changing mix of sites has also contributed, as some of the highest-risk and more complex locations were addressed earlier in the program.

The program delivers benefits beyond lower delivery costs. Restoring one-way valve performance reduces stormwater ingress and tidal backflow at treated sites, helps preserve available hydraulic capacity, reduces wet-weather overflow risk and lowers reactive maintenance requirements. The program demonstrates how recurring work can be delivered more consistently and efficiently through standardisation, continuous learning and repeatable solutions. It also provides a proven delivery model for future tranches and other recurring capital works. Demonstrated reductions of this order give confidence that our forward capital efficiency target is grounded in delivery experience and that rolling systemised programs will be a material contributor to it.

5.7.6 Deliverability and implementation risk

The capital program required over the FY28 to FY30 period is significantly larger than in previous periods, reflecting the demonstrated needs established in this Annexure. Because of that step-up, deliverability has been treated as a core test alongside prudency, efficiency and affordability. Deliverability has been assessed by considering internal capability, market capacity, procurement strategy, program sequencing, delivery dependencies and historical delivery performance.

Two risks sit at either end of the delivery challenge. If the program is not delivered, service outcomes, compliance obligations and growth commitments are placed at risk. The underlying need does not disappear, but is deferred into later periods, where the risk may escalate and it may be more costly or more difficult to address. Conversely, if the program is compressed or accelerated beyond a sustainable delivery rate, costs can rise from reduced efficiency or certainty, scarce labour and materials attract a premium, and delivery quality and assurance come under pressure.

Our objective is therefore to deliver the program at a pace that is both achievable and efficient. The depth of long-term planning undertaken in recent years gives us an evidence-based detailed view of the forward program by catchment, asset class and year. This allows the program to be sequenced and smoothed to a realistic delivery profile, rather than being progressed in a way that creates avoidable cost or delivery risk. The delivery profile has also been informed by market capacity and input from delivery partners, enabling work to be packaged and sequenced in a way that supports sustainable participation from our delivery partners and the broader supply chain.

The scale of the step-up, and the evidence it can be achieved, is cleanest when the forecast program is set against our capital delivery history (Figure 46).

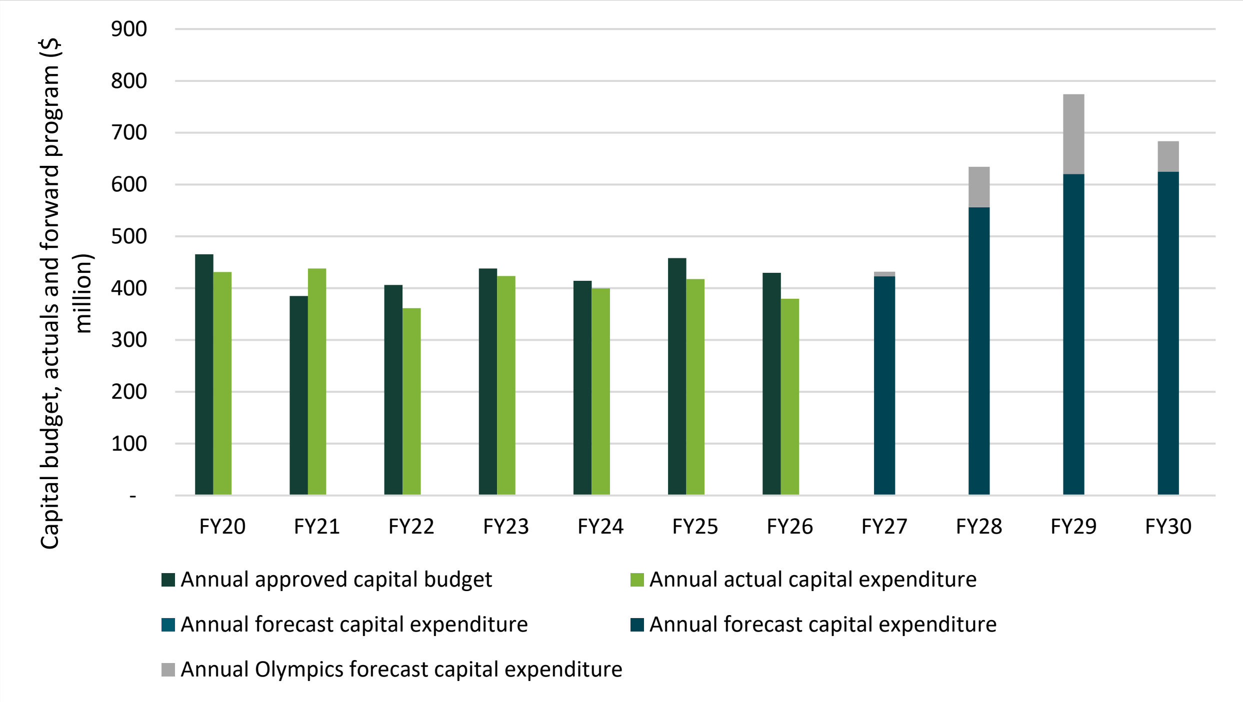


Figure 46 Annual capital expenditure, excluding Digital & Information - actual (FY20-FY26) and forecast (FY27-FY30) FY27 real

Our delivery history shows the required increase is achievable. Annual delivery grew from around $225 million in FY11 to around $418 million in FY25, an increase of around 80%, and has been sustained at close to $400 million across the last three years, demonstrating that we can deliver at the upper end of this range consistently. That has been delivered safely, competitively and to budget, as reflected in the PMA outcomes described above. This gives confidence that the larger required program can be delivered efficiently, rather than representing an untested ambition.

The required program rises further over the period, to around $625 million by FY30, roughly 1.5 times the recent rate. The increase is driven by the needs outlined in this Annexure. It is progressive rather than a single-year step, building across the forecast period, with the steepest single-year increase falling between FY28 and FY29 (mid-way through the regulatory period rather than at its end) before broadly levelling off into FY30. This shape reflects deliberate sequencing rather than an unconstrained escalation, and provides a managed glide-path over which delivery capability can be scaled ahead of the largest years.

Development activities for the FY28 and FY29 programs are already underway with our delivery partners, with more than [redacted] of the forecast FY28 capital program currently in development through the NG4D partnerships. This early engagement provides confidence in program readiness by advancing scope definition, design development, approvals and delivery planning well ahead of construction. It reduces execution risk and supports more efficient delivery by allowing delivery constraints, market capacity and construction sequencing to be considered before works move into full delivery.

Delivering a required program of this scale calls for a corresponding and planned increase in delivery capability, both our own and that of our delivery partners. NG4D was procured and mobilised specifically to provide this capacity ahead of the required increase in the program, so that core delivery capacity, supply-chain depth and engineering resources are in place ahead of the delivery peak. The delivery partners were selected through a rigorous, multi-stage competitive evaluation that tested capability, capacity, financial standing and safety systems. The consolidation of delivery arrangements from seven contracts to three also simplifies coordination across the portfolio. Our workforce planning, procurement and delivery functions are being scaled in step with the forward program, building on the early partner involvement embedded in NG4D so that capability is in place ahead of the largest delivery years.

The transition from the PMA to NG4D was itself managed as a delivery risk. It was structured as a planned, gradual transfer of responsibility, including the commercial, business and digital enablement activities needed to operate the new model. This was supported by detailed transition plans developed with each partner, an establishment audit of the new delivery organisation before full commitment, and insurance arranged to cover the transition period and partners moving off the PMA. A no-blame, one-team culture and integrated governance were built into the model to embed the new arrangements and keep the focus on portfolio outcomes.

The increase in delivery activity also has operating expenditure implications. These include resourcing, program management and systems capability, as well as the operation and maintenance of new and augmented assets once they are brought into service. These requirements are reflected in our operating expenditure forecast. Planning the capital ramp-up and the operating capability required to deliver and run the assets together ensures the program is resourced on both sides of the capital and operating divide.

Delivery over the FY28 to FY30 period will occur in a South East Queensland construction market affected by competing demand for labour, materials, plant and contractor capacity. Preparation for the Brisbane 2032 Olympic and Paralympic Games is expected to increase pressure across parts of the regional construction market during the same period in which our program ramps up. This has the potential to affect price, availability and delivery sequencing.

At the same time, the profile of major infrastructure activity in the region is expected to continue changing over the period. Some transport and enabling infrastructure programs may move through peak construction phases, potentially changing the mix of civil construction capability in the market. We are factoring these market dynamics into procurement sequencing and delivery planning.

Our long-term partnership model under NG4D, combined with early contractor involvement and procurement controls that maintain competitive tension, is intended to secure committed capacity through this period. NG4D gives delivery partners and the market a longer forward view of the capital pipeline than previous delivery models, enabling earlier planning for labour, materials, plant and specialist capability. We are using that forward view to package related works where this improves delivery efficiency, supports earlier commitment of market capacity and reduces the risk of competing for scarce resources on a project-by-project basis. This supports a more stable and efficient delivery profile while retaining flexibility in how major or complex investments are procured.

For example, the Oxley Treatment Plant Biosolids Program is being considered as a single package of interconnected projects. This approach is expected to reduce delivery interfaces, enable coordinated planning and construction activities, minimise operational disruption and improve overall delivery efficiency and value. For major strategic investments such as the planned Ipswich Treatment Plant project, we will undertake a procurement strategy to assess whether an alternative delivery model could provide access to broader specialist capability, innovation and competitive tension. The NG4D contracts are designed to allow for complex and major investments though non-exclusive, allowing us to test the market where appropriate, while retaining the NG4D framework for the balance of the program.

The principal risks to delivering the program over the FY28 to FY30 regulatory period have been identified and are being actively managed. They are summarised below (Table 7), together with the planning, partnership, procurement and governance arrangements that make the ramp-up achievable; the monitoring and assurance mechanisms underpinning several of these are described in the remainder of this section.

Table 7 Delivery risks and mitigations

Delivery risk over FY28-FY30	How it is managed
Internal resource capacity - our own workforce, program management and systems capability scaling to plan, govern and assure the program	Workforce planning, procurement and delivery functions are being scaled in step with the forward program. The delivery PMO has been established and subject to an establishment audit. Early partner involvement under NG4D also shifts more planning and design effort to partners, supporting internal capability to be built ahead of the delivery peak rather than in reaction to it.
Contractor and partner market capacity - a competitive SEQ market, intensified by Brisbane 2032 Olympic and Paralympic Games and other major infrastructure programs may constrain available delivery capacity	NG4D provides committed access to core delivery capacity ahead of need, reducing reliance on project-by-project competition for scarce resources. Partners were selected partly on capacity and financial standing. The non-exclusive contract structure also allows the wider market to be tested for peak, specialised or major works where this is likely to deliver better value or additional capacity and capability.
Supply chain - demand pressure may affect the price and availability of materials, plant and long-lead items during the peak years	Early contractor involvement enables earlier supply chain engagement and procurement of long-lead items. Partner supply-chain depth is built into the NG4D model while standardisation, modularisation and off-site fabrication reduce delivery interfaces and time on-site. Market dynamics are also factored into procurement sequencing.
Profile sequencing and smoothing - an uneven profile could exceed deliverable capacity in a single year or create avoidable cost pressure.	A long-term view of the program by catchment, asset class and year allows the profile to be smoothed and sequenced. The steepest single-year increase falls mid-period between FY28 and FY29, with delivery broadly levelling into FY30 rather than peaking at the edge of the regulatory period. Annual delivery assessments, informed by experienced construction professionals test and adjust the profile against delivery capacity.
Cost, contingency and schedule performance - cost or scope may escalate during a period of high delivery activity and market pressure	Estimates mature through defined accuracy classes to RAMP, with P50 probabilistic contingency scaled to complexity and internal independent Cost Intelligence review and RAMP certification before commitment. Schedule

Delivery risk over FY28-FY30	How it is managed
	performance is monitored through monthly program controls, earned value analysis and forecast performance reporting. NG4D pain/gain and KPI mechanisms align delivery partners to cost, schedule and delivery performance outcomes, supporting early intervention where cost or schedule variances emerge.
Governance and adjustment - emerging delivery, affordability or service-risk changes may go uncorrected if not identified early	Portfolio Board oversight, monthly program controls reviews, earned value analysis and efficiency monitoring provide early visibility of variances The Capital Project Challenge Process and gateway governance allow scope, timing and priority to be resequenced, deferred or revised transparently, with service risk kept visible in portfolio decision-making.
Internal resource capacity - our own workforce, program management and systems capability scaling to plan, govern and assure the program	Workforce planning, procurement and delivery functions are being scaled in step with the forward program. The delivery PMO has been established and subject to an establishment audit. Early partner involvement under NG4D also shifts more planning and design effort to partners, supporting internal capability to be built ahead of the delivery peak rather than in reaction to it.

Beyond these arrangements, deliverability is managed through a combination of portfolio planning, procurement strategy, delivery monitoring and investment governance. A Portfolio Board, comprising executive leadership from Urban Utilities and the delivery partners, provides strategic oversight and portfolio-wide alignment. Annual delivery assessments of the next-year, five-year and ten-year forecasts, undertaken with input from experienced construction professionals to test whether the program is realistically deliverable and whether the profile needs to be adjusted. We also target more than 80 per cent of planned spend for the coming year to have progressed beyond Gate 3, giving greater confidence that scope, delivery strategy, funding requirements and delivery planning are sufficiently developed before the delivery year commences Portfolio sequencing and smoothing then align the program with available market and internal capacity.

During delivery, earned value analysis, schedule monitoring and monthly efficiency metrics are used to identify emerging cost, scope or timing variances. These controls allow issues to be identified early and corrective action to be taken before they materially affect delivery outcomes or customer costs.

Cost outcomes are protected by an independent cost assurance process scaled to project complexity. Cost estimates progress through defined accuracy classes as projects mature, from Class 5 at concept to Class 2 at the Risk Adjusted Maximum Price (RAMP), with contingency set according to estimate maturity and project complexity and developed using probabilistic (P50) risk modelling as projects approach delivery. Delivery Partner RAMP submissions are independently reviewed and benchmarked by our Cost Intelligence function with the outcome documented in an Independent RAMP Certification Report provided to the

Project or Executive Leadership Group based on project value before capital is committed. Financial approval levels remain in line with the organisation's delegated authorities.

Where delivery, affordability or service risk settings change, the Capital Project Challenge Process and gateway governance provide mechanisms to reassess scope, timing and priority. Investments can be re-sequenced, deferred or revised where that is the prudent course, while keeping the associated service risk visible. This ensures that changes to the program are made transparently and regarding customer outcomes, regulatory obligations and long-term value.

Taken together, these mechanisms support a capital program that is realistic, achievable and capable of being delivered at the lowest sustainable cost to customers.