Water Demand Management
Programme Business Case

June 2026

QUEENSTOWN LAKES DISTRICT COUNCIL

Queenstown Lakes District Council

Water Demand Management Programme Business Case

Prepared by:	Aurecon New Zealand Limited
Prepared for:	Queenstown Lakes District Council
Date:	30 June 2026
Version:	*V 4 – Programme Business Case*
Status:	FINAL DRAFT
Template Version:	*March 2023*

Document Control

Document Information

Document ID	
Document owner	
Issue date	
Filename	

Document History

Version	Issue date	Changes
V1	22/04/2026	Initial draft of Economic Case.
V2	08/05/2026	Updated draft of Economic Case (initial QLDC feedback addressed), initial drafts of Commercial, Financial, and Management Cases
V3	28/05/2026	Updated draft of Strategic Case (initial QLDC feedback addressed and new graphs created based on Water Balance Model), Economic, Commercial, Financial, and Management Cases updated based on latest feedback from QLDC.
V4	15/06/2026	PBC updated following Council workshop, updates incorporate feedback on metering types and water charges for unoccupied households. QA completed of numbers.
V4.2	30/06/2026	PBC updated to include Letter from Hon. Simon Watts emphasising metering, and PCG feedback.

Document Review

Role	Name	Review Status
Programme Manager	Helen Beaumont	Complete

Document Sign-off

Role	Name	Sign-off Date
Senior Responsible Owner/Project Executive	Brent Pearce	30 June 2026

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Glossary

Abbreviation	Definition
Act	Local Government (Water Services) Act 2025
AMI	Advanced Metering Infrastructure
AMP	Asset Management Plan
AMR	Automated Meter Reading
BCR	Benefit-Cost Ratio
Capex	Capital expenditure
Council	Queenstown Lakes District Council
DBC	Detailed Business Case
District	Queenstown Lakes District
DMA	District Metered Area
ELT	Executive Leadership Team
FTE	Full-Time Equivalent
FY	Financial Year
ILM	Investment Logic Mapping
KPI	Key Performance Indicator
LRMC	Long Run Marginal Cost
LTP	Long Term Plan
LWDW	Local Water, Done Well
Mauri	Life force
MCA	Multi-Criteria Analysis
NEPM	Network Environmental Performance Measures
Opex	Operating expenditure
ORC	Otago Regional council
PBC	Programme Business Case
PCG	Programme Control Group
Programme	Water Demand Management Programme
PRV	Pressure Reducing Valves
PV	Present value
RFI	Request for Information
RFP	Request for Proposal
Rūnaka	Rūnanga – Tribal Council
SPAR	System Performance Assessment Report
SRO	Senior Responsible Owner

Abbreviation	Definition
Tākiwa	Area of authority
Taumata Arowai	The Water Services Authority – Taumata Arowai
WSCCO	Water Services Council Controlled Organisation

Executive Summary

Introduction

Investment proposal overview

This investment proposal outlines a suite of water demand management interventions across nine of Queenstown Lakes District Council's (Council) 11 public water supply schemes. The interventions combine supply upgrades, leakage reduction, metering, volumetric charging, pricing, and behaviour change measures, with the specific mix tailored to each scheme.

Purpose of the Programme Business Case

This Programme Business Case (PBC) seeks formal approval for a suite of water demand management interventions across the Queenstown Lakes district (the district). It confirms the strategic context for investment, presents the case for change, recommends a preferred programme, and identifies projects for delivery. It also outlines the proposed procurement approach, the financial implications of the preferred programme, and the management arrangements required for successful delivery.

Structure of this document

This document follows the New Zealand Treasury's Better Business Case methodology. The headings largely reflect those in the Treasury's PBC guidance and template, with some adjustments made to suit the context of this investment proposal.

A summary of each of the five cases within the Queenstown Lakes Water Demand Management Business Case is provided below. For each case, please refer to the relevant section.

Strategic Case summary

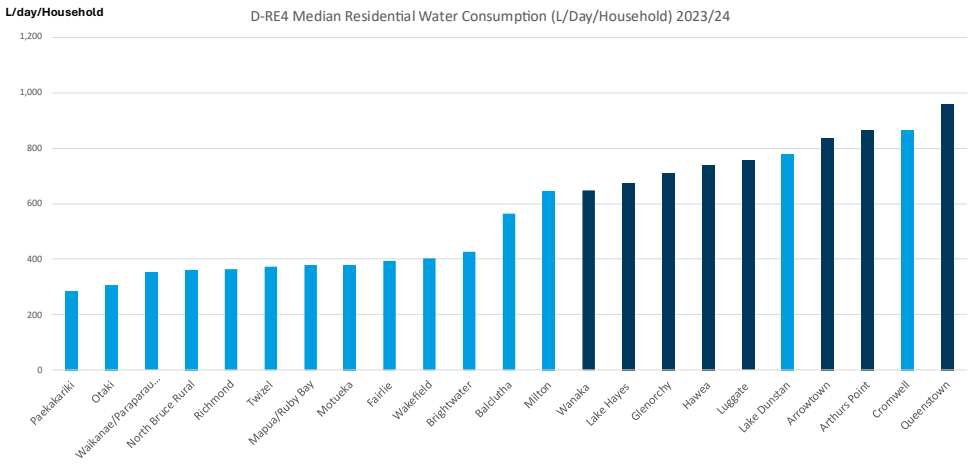
Why is investment needed?

Council must make decisions about its approach to water demand management. Due to excessive demand, on peak days water supply infrastructure is already at, or above capacity, consent limits are breached and there is risk of loss of reliable water supply in some schemes.

The district's residential water consumption is high relative to comparable New Zealand water supply schemes (Figure 1). As well as high consumption, there is high leakage across schemes, which drives high water demand. During peak periods in summer, water demand increases up to threefold.

There is also a mandate for this work, under the Long-Term Plan 2024-2034 which allocated funding for water demand management across the district's schemes.

Figure 1: Residential consumption per household – Queenstown Lakes and some comparable schemes



Council must invest in either measures to reduce water demand or capital to expand capacity. Historically, Council has prioritised supply-side interventions, such as adding capacity but this approach has led to increasingly substantial financial pressures. Plus, new economic regulation through the Local Water Done Well (LWDW) reforms require providers to operate efficiently, ensure financial sustainability, charge fairly for services and to report on their performance.

Managing water demand responds to Council's supply challenges, and these new requirements:

- **The Local Government (Water Services) Act 2025 ('the Act')**: The Act requires water service providers to provide reliable, cost-effective, and financially sustainable water services, to use water efficiently and move away from rateable value-based charging. These requirements will be monitored by Taumata Arowai (water quality) and the Commerce Commission (cost efficiency and fairness).

  To support meeting these requirements, the Act enables territorial authorities to transfer responsibility for providing water services to a Water Services Council Controlled Organisation (WSCCO). Council will transfer water service provision to a WSCCO from 1 July 2027.
- **The Commerce Commission**: the economic regulator for water services is introducing information disclosure (ID) requirements for suppliers. Specifically, how suppliers monitor and manage water demand and water loss, including strategies and technologies used to improve water use efficiency and minimise non-revenue water. These requirements are expected to become more stringent over time as the regulatory framework matures. Implementing water demand management will enable Council/WSCCO to accurately report on water loss and fulfill ID requirements.
- **Taumata Arowai**: the Water Services Authority, is the dedicated water services regulator, setting out and overseeing drinking water requirements. This includes Drinking Water Standards, which set the maximum acceptable values for substances that can affect the quality and safety of water, and Drinking Water Quality Assurance Rules which set out how suppliers must comply with the Standards. QLDC/WSCCO is required to adhere to these rules and standards.

Given economic regulation and the current funding environment, it is prudent to respond with water demand management. This investment proposal is for a suite of water demand management interventions across 9 of the 11 QLDC public water supply schemes. These interventions are a combination of network upgrades, leakage reduction, metering, volumetric charges, and behaviour-change measures. Implementing meters and volumetric charges is strongly supported by Central Government (see Appendix 6).

What problems will we solve with investment?

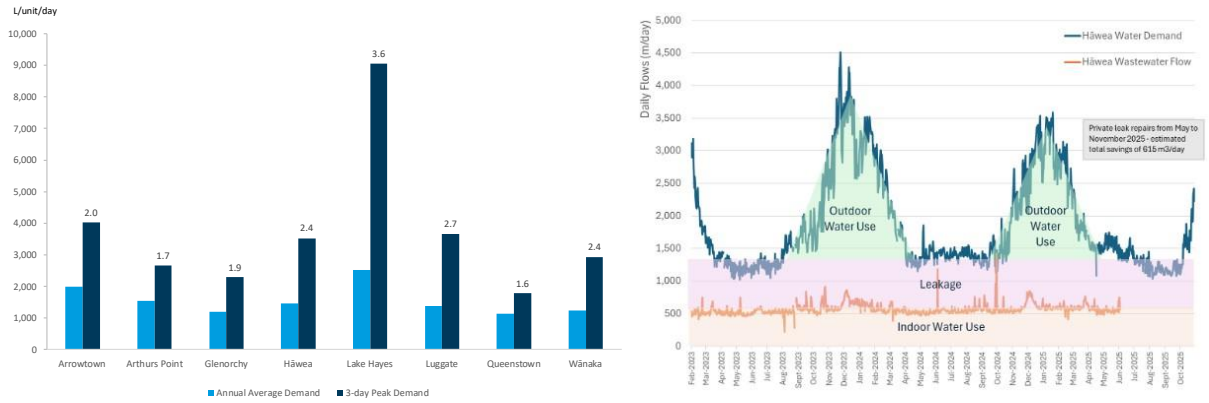
Council faces three interconnected challenges in delivering safe, reliable and sustainable water services:

Excessive peak demand and infrastructure capacity

Excessive water demand jeopardises QLDC's ability to reliably supply safe water to local communities, meet regulatory requirements, and accommodate ongoing growth.

Most of Council's water supply schemes are at, or above, capacity during peak summer periods creating serious public health and safety risks and potential supply challenges. Four schemes (Wānaka, Hāwea, Lake Hayes, and Luggate) experience peak daily demands at least three times higher over the Christmas period than demand in the winter months. Peak demand is predominantly driven by outdoor water use.

Figure 2: Evidence of shoulder season vs peak demand, irrigation as driver of high demand



Across all schemes, a combination of water intake, treatment and storage limits are breached, overextended, or nearing capacity on peak days. With the district experiencing ongoing high population and visitor growth, current shortfalls in capacity are expected to increase. However, expanding capacity to meet peak demand is not fiscally prudent. Water assets would be underutilised for much of the year, even with population growth.

Health and safety risk

When there is very high demand, water supply schemes can experience low network pressure. This creates multiple risks:

- **Public health risks from low network pressure** allows drinking water contamination via backflow or leaks. Contaminated water can cause illness and even death.
- **Risk to security of supply** during drought conditions, leaving customers and communities without access to drinking water, and risk of insufficient supply for firefighting.

Customer behaviour and cost structures

The current water supply charging model means there are no incentives for efficient use of drinking water, and the cost of meeting peak water demand is inequitably distributed across customers and communities.

The district's water consumption is one of the highest in New Zealand, yet the current model provides no mechanisms to manage or disincentivise excessive use, distributes costs inequitably and is financially unsustainable.

Current charging model: The model is comprised of a fixed fee portion and a portion based on property rateable value and land use, both by scheme. This disconnects water bills from actual consumption.

Equity problem: A household using 200 litres per day pays the same as a household of the same value that is using 800 litres per day. High users have no financial incentive to reduce consumption, and low users have no reward for conservation. Ratepayers who conserve water cross-subsidise users who consume excessively.

Financial sustainability challenge: This approach is not financially sustainable. Council is operating in a constrained funding environment and has limited justification to respond with a capital solution (infrastructure expansion) when demand-side interventions are available. Therefore, incentivising reduced use through alternative charging models (as required via the Act) is an efficient way forward.

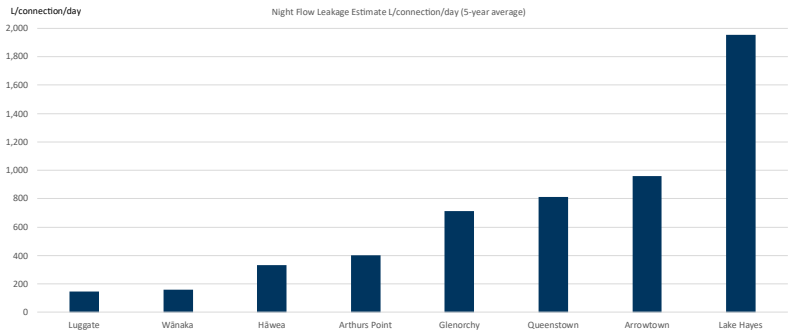
Water measurement and management

Council has limited ability to understand and manage water loss and consumption, resulting in inefficient water services and inability to demonstrate effective, cost-efficient water supply management to ratepayers and regulators.

Council is currently lacking the tools and resources (Council capacity) to understand, and therefore manage, water demand in the district. Tools and systems include network configuration, ability to manage pressure, the correct data to inform decision-making and customer engagement tools to support behaviour change.

Measurement limitations: Currently, the only means of measuring demand is at the production level, with reliance on estimates of per-person consumption. In some schemes, water intake exceeds consent limits (Lake Hayes on a peak demand day and Arrowtown annually). There are also challenges in accurately identifying leaks and high network system leakages, estimated at 20 to 50 percent of total water demand by scheme. This is both inefficient, and an issue for future regulatory compliance.

Figure 3: Evidence on water loss by scheme



In FY25, QLDC water supply produced over 700 metric tonnes of carbon emissions and used a considerable amount of electricity. The financial and environmental cost of water supply is high and increasing, and reduced demand, including both reduced consumption and leakage, will lower energy and carbon impacts.

Under ID requirements, Council needs to report on leakage, which it cannot currently measure effectively. These requirements may also drive ratepayer scrutiny of current water management.

What benefits would investment realise?

Investment in water demand management would lead to three primary benefits for the district. These would benefit both Council and the local community, aligning with legislative and regulatory requirements, protecting the environment and improving equity of water supply rates.

Safe and reliable Council water supply

Reliable means pressures in the network are maintained and there is sufficient pressure for emergency response, e.g., firefighting. Safe means water quality is secured. Together, these uphold public health and safety.

In addition to public health outcomes, network efficiency will improve from reduced leakage and consistent pressure, and this, combined with lower peak summer demand, will lead to higher network resilience. Higher network resilience safeguards public health and can reduce disruption time and operating costs.

Efficient and sustainable water demand

Reduction in peak summer demand for drinking water, including reductions in network water loss, will reduce pressure on the network and per capita energy use, improving environmental and financial sustainability. Sustainable demand will contribute to deferring the carbon and capital cost of new water infrastructure.

For the networks supplied by groundwater (every scheme excluding Queenstown and Wānaka), reduced demand will lower environmental impacts. By achieving efficient and sustainable demand, the district will be protecting Te Mana o Te Wai, prioritising the health and mauri / life force of freshwater. This aligns with Kāi Tahu and tākata whenua values and Council's commitment to supporting environmental, social, cultural and economic wellbeing.

Fair and equitable charges for water supply

The final primary benefit achievable through water demand management is a fair cost distribution where the beneficiary pays. This aligns with the Act's requirements to transition away from rateable value-based charging.

A beneficiary-pays charging model will reduce financial pressure on household ratepayers, as all users are not subsidising high users. Further, Council will be actively managing excessive use.

What could go wrong?

There are several major risks with this investment proposal:

These are discussed in the

Management Case summary.

Economic Case summary

The Economic Case builds on the strategic context for implementing water demand management by analysing demand management options. All water demand management scenarios returned strongly positive benefit-cost ratio (BCR) in economic modelling, confirming any scenario represents a strong value-for-money response to the district's current water demand challenges. Universal customer metering with a volumetric charge is the single most significant lever for reducing water demand, improving fairness in charging and strengthening Council's ability to manage leakage and consumption across the network.

Approach to options analysis

Options analysis was a staged process to identify and assess water demand management measures. Options analysis commenced with a long-list of 56 possible physical, behavioural, and regulatory measures, which

were filtered through early screening to remove measures not suited to the Queenstown Lakes context. This finalised long-list of 32 measures was split into two parts for assessment – metering and non-metering measures. These measures were evaluated using multi-criteria analysis (MCA) of Critical Success Factors and Programme Investment Objectives. Post-MCA, 15 measures were carried through to the short-list. Water charge analysis occurred in a separate workstream, and a generic water charge (50-50 split between fixed charge and a uniform volumetric charge) was carried through to the shortlist.

The short-list of 14 non-metering and 1 metering (with the 50-50 water charge) measures was evaluated through cost-benefit analysis. Two measures were eliminated. The remaining 13 measures were combined into four programme scenarios, ordered from 'basic' which had the most cost-beneficial measures (excluding metering) to 'do more, faster', including all shortlist measures on a faster implementation timeline.

Cost-benefit analysis (estimated water savings and cost) of the four programme scenarios was completed, and this was the basis for selecting a preferred programme.

Long-list evaluation

Non-metering measures

The finalised long-list was split into metering and non-metering measures for assessment. The 29 non-metering measures were assessed against four Critical Success Factors – ability to reduce peak demand, likely water savings, cost effectiveness, and community acceptability – with each factor given a weighting. Reducing peak demand was assigned the highest weighting at 30 percent, given its direct impact on Council's ability to achieve Investment Objective 1 (ensure safe and reliable water supply).

The non-metering measures that performed strongest in MCA were those that are relatively low-cost, practical to implement and / or able to influence peak demand or leakage. The highest-ranked measures included Council open space irrigation efficiency audits and retrofit, residential outdoor water efficiency education, excess water use enforcement, pipe leak repair remission policy, mandatory open space irrigation audits, customer communication, Council irrigation optimisation and proactive DMA monitoring and leak detection. A common theme across the highest-performing non-metering measures is that they either target outdoor water use, which is a major driver of peak demand, or improve Council's ability to identify and respond to leakage. The evaluation also showed that Council-led measures support community acceptance because they demonstrate Council is leading by example.

Metering measures

The three long-list metering measures were analogue meters, Automatic Meter Reading (AMR), and Advanced Metering Infrastructure (AMI). The key difference between these meters is how they record and transmit data. Analogue meters are read manually and provide basic, periodic consumption data (monthly), AMR automates meter reading with one-way data transfer and potential for more regular reporting (normally monthly, can be daily), and AMI provides high-frequency two-way communication that supports near real-time monitoring.

The three metering measures were evaluated against three benefit and three effort MCA criteria. Benefit criteria were the Investment Objectives and effort criteria were implementation considerations - complexity, flexibility and whole-of-life costs. All metering measures scored well with AMI the highest, then AMR then analogue. AMI's higher capital cost and greater technical complexity are offset by much stronger data capability, better leak detection, more flexible future charging options and better long-term network management. Whilst smart metering (AMI) is recommended, it is likely a mix of meter types will be required across the district due to technical and geographical constraints.

Water charge analysis

Water charging options were assessed separately because final decisions on pricing sit with the WSCCO and will require public consultation. Benchmarking analysis found the dominant direction for water charge

models in New Zealand is toward utility-style pricing that combines volumetric charges with supporting fixed components. As such, Council's current approach of a fixed charge with a rateable value-based element is increasingly out of step with water sector norms.

Fixed, variable, mixed, and non-uniform volumetric charges were analysed. Fixed-only charging is simple but provides no incentive to conserve water and is increasingly inconsistent with policy and legislative reform. Pure volumetric charging provides the strongest conservation signal but can create greater revenue volatility. A mixed approach, with both fixed and volumetric components, is the most practical and equitable basis for future charging. A 50-50 fixed and volumetric charge with no base allowance has been applied in short-list assessment as a placeholder until more detailed analysis is undertaken following public consultation, and as a part of WSCCO establishment and eventual water metering project.

Factors that will need to be considered when determining the preferred charging model include occupancy and consumption patterns. A higher fixed component or base allowance may be required to ensure low-occupancy holiday homes contribute equitably to system costs.

Short-list evaluation

The short-list of 14 non-metering and 1 metering (AMI with the 50-50 water charge) measures was evaluated through cost-benefit analysis. 10 of the 15 measures had a BCR of more than one (Table 2), meaning their benefit outweighs the cost, and were carried forward into programme scenarios. Educational measures performed the strongest, reflecting their low cost and ease of implementation. Physical measures are more capital intensive but achieve a high volume of water savings, so remain strongly positive.

Table 1: Cost-benefit analysis results - short-listed measures

MCA Rank	Measure description	Total cost ($m FY26)	Annual water savings (m^3)	BCR*
3	Residential outdoor education	$1.2	79,347	8.6
7	Customer communication	$1.8	115,205	8.0
4	Excess water use and enforcement	$1.5	63,477	5.7
2	Council open space irrigation audit and retrofit	$0.1	6,833	5.5
9	Improve DMA monitoring and proactive leak detection & repair	$21.6	1,036,562	4.7
12	Mandatory school water audits	$0.4	15,204	2.2
13	Voluntary hotel audit	$0.9	30,911	1.9
1	Universal metering with 50-50 charge	$100.1	2,710,498	1.9
5	Pipe leak repair remission policy	$1.0	15,422	1.8
8	Council open space irrigation optimisation	$0.40	4,057	1.3
Measures with a BCR less than 1				
14	Pressure management for the network	$17.6	165,850	0.6
11	Non-potable water for construction	$49.0	115,205	0.3
15	Mandatory council facility water audits incl. operational use	$1.6	3,003	0.1
10	Water efficient landscape design standards	$7.2	6,447	0.1
6	Mandatory irrigation audit for large users	$4.2	5,088	0.1

*Note: BCRs may understate the benefit achieved through short-list measures, as inputs were derived based on the Capital Plan which assumes a 30% reduction in water demand in the short-term due to universal water metering and volumetric charges. As such, the cost of supply is currently underrepresented.

*Shortlist evaluation used some different assumptions and metrics than the final scenario evaluation, hence had different BCRs. Refer to the end of Appendix 15 for these metrics.

Universal metering with a two-part charge is the single most important measure for managing water demand, generating an estimated 2.7 times more annual water savings than the next closest measure, improving DMA monitoring and proactive leak detection and repair.

Scenario evaluation

Four programme scenarios were evaluated, containing 13 measures in total. This is the 10 measures with a BCR of more than one from short-list evaluation, plus three measures that were eliminated. The re-introduced measures are network pressure management (reduces maintenance and extends life of pipes), mandatory open space irrigation audit and retrofit (irrigation is a key driver of peak demand), and mandatory council facility water audits (Council leading by example is a programme objective and important to community acceptance). The four programme scenarios are:

- **Scenario 1 | Basic:** prioritises measures that deliver strong cost-effectiveness with immediate impact and low implementation complexity, specifically the education and excess water use enforcement measures. Improving DMA monitoring and proactive leak management sits at this scenarios core, reflecting the significance of network water loss as a demand driver. All Council measures are in this scenario too.
- **Scenario 2 | Basic, plus metering**: same as Scenario 1 but with the addition of Universal metering and the Pipe leak and repair remission policy. Metering installation is staggered across five, one-year phases, from July 2028, 1 year after WSCCO establishment. Schemes where consented raw water takes are exceeded (or close to being exceeded) and/or where leakage is high will be prioritised in the roll out.
- **Scenario 3 | Do more:** builds on Scenario 2 by extending the programme's reach across a broader range of customer types. Mandatory irrigation audits, school water audits and voluntary hotel audits are added, recognising that non-Council customers represent a significant untapped opportunity for demand reduction. Council-focused measures and leak management remain core to this scenario, consistent with the programme objectives established across all scenarios. Pressure Management is also added, noting pressure management opportunities by scheme will require further investigation to understand potential water savings versus the cost of implementation.
- **Scenario 4 | Do more, faster:** This scenario tests the cost and demand implications of compressing the implementation timeline. It is the same as Scenario 3, with an accelerated implementation pace. Metering is rolled out across three one-year phases from July 2028 (as opposed to five one-year phases).

These four scenarios were evaluated, with results in Table 2 below.

Table 2: Scenario evaluation results

Scenario	Total costs[1] ($m FY26)	Present value costs ($FY26)	Annual average water savings (m^3)	Est annual water savings post metering (%)	Levelised cost ($ spent per m^3 of water saved)	BCR
Scenario 1 - Basic	$28.2	$20,245,307	1,417,000	7.8%	$0.69	8.52

[1] Total costs exclude capex requirements for additional FTEs, which was only calculated for the preferred option in the Financial Case.

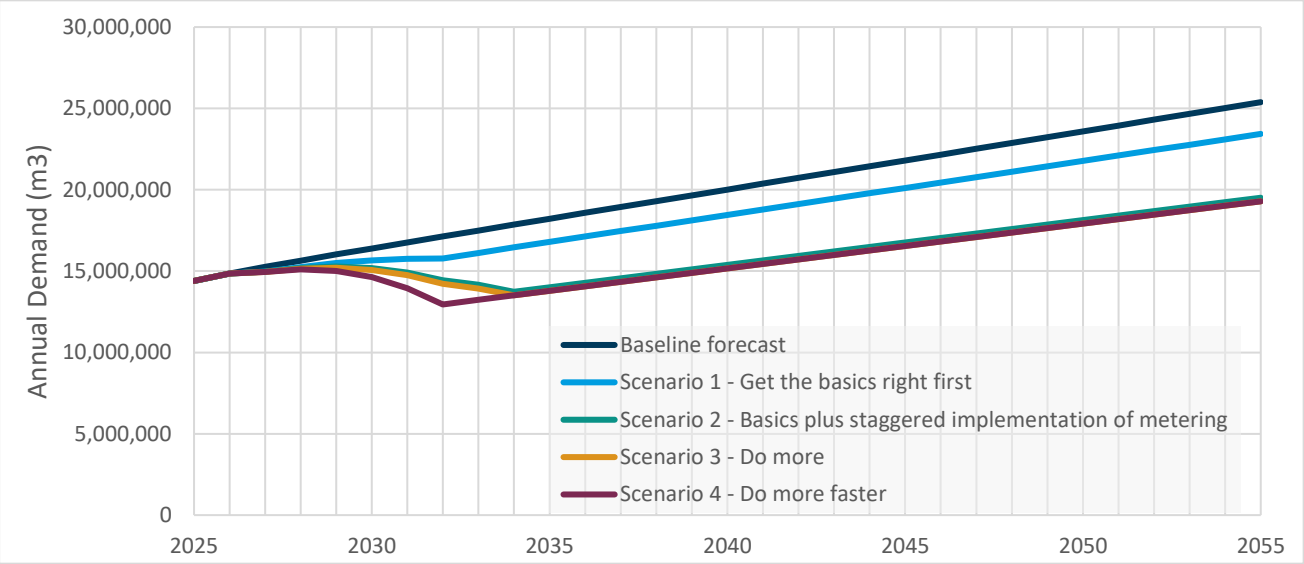
Scenario	Total costs[1] ($m FY26)	Present value costs ($FY26)	Annual average water savings (m^3)	Est annual water savings post metering (%)	Levelised cost ($ spent per m^3 of water saved)	BCR
Scenario 2 – Basic plus metering	$129.3	$99,704,096	4,021,000	23.1%	$1.21	4.83
Scenario 3 – Do more	$152.4	$118,608,838	4,210,000	24.2%	$1.38	4.26
Scenario 4 – Do more, faster	$152.1	$119,078,713	4,325,000	24.2%	$1.34	4.39

All scenarios return a strongly positive BCR, confirming that any scenario would be cost-beneficial. Scenarios containing universal customer metering (2, 3, 4) deliver more than double the annual water savings of the non-metering scenario (1), reflecting metering's role in enabling consumption-based pricing and improving household-level leak identification, though at significantly higher cost.

Scenario 4 is marginally more cost-effective than Scenario 3, suggesting faster implementation reduces costs compared to a staggered rollout. However, the potential cost savings are not substantial, and this evaluation does not include capacity and delivery risks of a faster roll out. These would require further evaluation to better understand the value versus risk trade-off of accelerating delivery. Scenario 1 returns the highest BCR at 8.5, reflecting its lower cost base, but delivers marginal impact on overall water consumption compared to the metering scenarios. Scenario 3 and Scenario 4 deliver only marginally greater water savings than Scenario 2 but at higher cost and with greater delivery complexity.

The annual water demand forecast to 2055 (FY56) of each scenario, compared to the baseline, is illustrated in the figure below. Scenarios 2 through 4 have relatively similar impacts on demand as compared to Scenario 1.

Figure 4: Impact of demand management scenarios on annual water demand forecast to 2055



The preferred scenario

The preferred scenario is Scenario 2 – Basic plus metering as it provides the strongest balance of affordability, water savings and deliverability. It includes the core low-cost and high-performing non-metering measures, while also incorporating universal metering and a 50-50 fixed and volumetric charge, which are essential to achieving programme objectives. Projects in the preferred scenario (Scenario 2) are:

- **Council measures (Project 1):** Council open space irrigation audit and retrofit, Council open space irrigation optimisation, and Mandatory council facility water audits including operational use.
- **Education (Project 2):** Residential outdoor water efficiency education programme, and Customer communication programme.
- **Regulatory (Project 3)**: Excess water use and enforcement, and Pipe leak repair and remission policy.
- **Active leak management (Project 4)**: DMA monitoring and proactive leak detection and repair.
- **Universal metering (Project 5)**: Universal customer metering and volumetric charging.[2]

Note: further work is required on metering and water charges. Detailed analysis (likely a Detailed Business Case) will be undertaken and signed off by the WSCCO.

Rationale for selecting Scenario 2

The PCG determined the preferred scenario should include metering with a volumetric charge (50-50 fixed - volumetric is the placeholder until more detailed analysis is undertaken). This is because:

- Universal metering is essential for equitable pricing, improved network insight and sustained demand reduction,
- Under the water services reform, metering and volumetric charging are increasingly signalled as the way forward in policy, legal and regulatory frameworks, and
- Metering materially improves the performance of other programme measures, especially leak detection, customer response and enforcement.

Once these factors are considered, a non-metering programme (Scenario 1) is determined insufficient, despite the lower costs and higher BCR.

Scenario 2 has the highest BCR of the three remaining scenarios. Scenarios 3 and 4 deliver marginally higher annual average water savings (Table 2) but at significantly higher costs. Scenario 2 is also less complex than Scenarios 3 and 4, as there are less projects implemented and implementation is more phased. Given Council operational capacity and capability is a key implementation risk, lower complexity is preferred to reduce the Programme risk profile.

Commercial Case summary

The Commercial Case sets out how the water demand management programme (Programme) will be delivered and procured. The proposed approach is intended to support delivery of the preferred programme while maintaining alignment with Council's Procurement Policy and achieving value for money.

What needs to be procured?

The Programme comprises five projects: (1) Council measures, (2) Education, (3) Regulatory updates, (4) Active leak management and (5) Universal metering. Projects 1 and 3, Council measures and Regulatory updates will be managed internally because Council has both the capability and capacity to deliver these projects. Procurement is required for projects (2) Education, (4) Active leak management and (5) Universal metering due to capability and/or capacity requirements.

The rest of the Commercial Case covers the procurement strategy and other commercial considerations for Projects 2, 4 and 5. Projects 1 and 3 are not discussed further as they do not require procurement.

[2] Specific water charge to be applied will be determined through more detailed analysis as the WSCCO is established / DBC is developed.

Procurement strategy

The required goods, works and services are:

- **(2) Education**: communications services to support delivery of a communications strategy and implementation of communications campaigns.
- **(4) Active Leak Management:** a supplier that can provide and install DMA meters. Potential for procurement for future leak management services and repairs.
- **(5) Universal Metering:** WSCCO will procure a smart meter vendor(s) to provide, install and manage smart meters across the district. Smart metering services could be provided by one vendor, or multiple vendors providing different service elements (e.g., hardware, telecommunications, systems integration). However, it is likely that the WSCCO will seek more integrated service solutions due to current in-house capability, to reduce the risk profile of delivering this project.

The indicative procurement method by project is:

- **(2) Education**: a single-stage open market approach to appoint a communications partner. May be procured through panel or existing relationship, subject to final contract value.
- **(4) Active Leak Management:** a single-stage open market approach is proposed for DMA improvements, with the treatment of leak repair works to be confirmed through detailed planning, although likely through existing relationships.
- **(5) Universal Metering:** a two-stage open market approach. Request for Information to test the market and refine the commercial model, followed by a Request for Proposal to secure an integrated delivery solution.

From an initial desktop market assessment, there is expected to be reasonable market interest in all three projects due to contract size, project complexity, and existing supplier relationships (project dependent). Given water sector reforms there is expected to be some competition for smart meter vendors. This will be tested through the Request for Information.

The next step is to progress detailed procurement planning for Projects 2 and 4, while using early market engagement from the Request for Information to inform the Detailed Business Case and final procurement approach for Project 5.

Financial Case summary

The Financial Case outlines the financial implications of the preferred programme, outlining the capital and operational costs of the programme and the funding requirements.

Programme costs

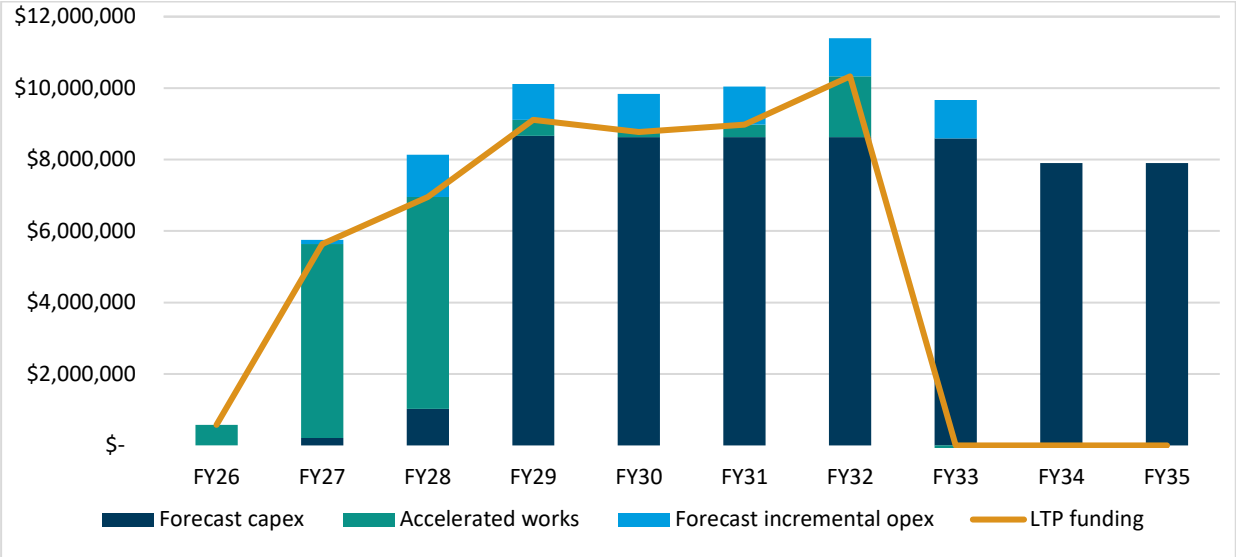
The total programme cost is estimated at **$131.7 million** in real terms over 30 years, equivalent to approximately $101.9 million present value using a 2% discount rate. This includes $60.0 million capital expenditure (capex) over FY26-FY35 and $71.7 million operational expenditure (opex) over FY26-FY56.

Metering (Project 5) accounts for about three quarters of total programme costs, with approx $55.3 million capex and $44.8 million opex. Active leak management is next with approx. $2.0 million capex and $19.6 million opex. The other three projects total $7.6 million, of which $0.3 million is capex and $7.3 million is opex. There is an additional $2.4 million in programme overheads (classified as capex) for additional internal Full-Time Equivalents to implement the Programme.

Funding availability

The 2024-2034 Long Term Plan (LTP) is a core funding source for capex, providing approximately $51.6 million for water demand management over FY25-FY32, including about $50.3 million from FY26-FY32. In the years where LTP funding is available, forecast programme capex is within or below available allocations.

Figure 5: LTP vs. forecast capex and incremental opex



There is, however, an estimated capex funding gap of about $9.7 million beyond current LTP allocations. This gap is largely driven by metering, which is expected to sit within the future WSCCO funding and decision-making framework rather than being fully constrained by current LTP budgets.

Funding for opex is mixed. Some costs will be absorbed and addressed through prioritisation of internal resource. It is anticipated some metering opex will be recovered through the volumetric water charges

Overall affordability

The total capex and opex costs (undiscounted) of the programme is $131,683,325 (real cost) over the 30 years of the expected lifetime of the programme.

Capex is substantially supported by existing LTP allocations, with the remaining gap and the largest cost component—metering—to be resolved through future WSCCO funding arrangements and Detailed Business Case decisions. Long-term affordability will be determined through confirmation of the metering delivery model, the final opex profile, and the extent of cost recovery through volumetric charging and/or other revenue sources.

Management Case summary

The purpose of the Management Case is to describe the arrangements that will be put in place to ensure successful delivery of the programme and to manage risk.

Programme governance and management

Council and the ELT is responsible for Programme governance and management until 1 July 2027, when the WSCCO is operational. From 1 July 2027 onwards, responsibility for the Programme transfers to the WSCCO.

Until 1 July 2027, the Programme will sit within Council's existing Property and Infrastructure governance framework, led by a Senior Responsible Owner and Programme Manager and overseen by the Programme Control Group and Engineering Control Group. From 1 July 2027, governance will transfer to a WSCCO-led Programme Board. This is except for the Three Waters bylaw, as Council cannot delegate responsibility for the bylaw to the WSCCO. However, some administration and enforcement functions may later be delegated. Maintaining broadly consistent governance arrangements across both phases is a key response to transition risk.

Day-to-day delivery will follow Council's standard project and programme management procedures and the Programme Management Office Assurance Management Framework. This includes stage-gate reviews,

audits, assurance reviews, and regular reporting on cost, schedule and risk. Clear delegation across the Programme Manager, Programme Board and WSCCO Board will support timely decisions on scope, budget, procurement, resourcing, risk and schedule. This is especially important because decision-making responsibility will shift as the WSCCO is established.

Programme plan

Implementation timelines, including key decision points and milestones, are provided for each of the five projects. More detailed planning will follow through project plans for Projects 1 to 4 and a Detailed Business Case for universal metering and water charging. In the programme plan, early implementation focuses on quick-start actions that can demonstrate progress and reduce demand early, including Council-led measures, education and communications, and active leak management.

Key milestones are:

- Council consideration of this Programme Business Case in July 2026
- Key procurement and policy decisions through late 2026 and early 2027
- Transfer of programme responsibility to the WSCCO on 1 July 2027
- Universal metering detailed analysis by mid-2027, procurement through 2027 to early 2028, and phased rollout from 2028 to 2033.

Organisational change management

There is already significant change underway in Council, due to the establishment of the WSCCO. It is therefore important that all the change elements of this Programme are addressed through the broader change management process and existing transformation work.

Benefits realisation and risk management

The key benefits will be monitored through Key Performance Indicators (KPIs) comprising both ‘lead’ and ‘lag’ indicators, where lead is predictive and indicate if the Programmes on track, while lag is result-oriented and indicate if the Programme was successful post-implementation.

A programme risk register was developed during the Business Case, identifying key risk, risk owners and mitigations. This risk register will be monitored and updated throughout implementation.

Decision sought

This Programme Business Case seeks formal approval of the proposed programme (Scenario 2), which contains a suite of water demand management measures, including metering and volumetric charging. This Business Case seeks approval of the investment proposal so that more detailed planning, procurement and implementation can commence (project dependent). This includes approval of the proposed programme and estimated costs, funding arrangements, commercial and management strategies.

1 Introduction

1.1 Investment proposal overview

This investment proposal is for a suite of water demand management interventions across 9 of the 11 Queenstown Lakes District Council's (Council) public water supply schemes. These interventions are a combination of supply upgrades, leakage reduction, metering, volumetric charges, pricing and behaviour-change measures. The specific mix of interventions varies by scheme.

1.2 Purpose of the Programme Business Case

This Programme Business Case (PBC) seeks formal approval for a suite of water demand management interventions in the Queenstown Lakes district (the district). It confirms the strategic context for the investment proposal and makes the case for said investment, recommends a preferred programme, and identifies projects for delivery. It also outlines the proposed procurement arrangements and programme financial implications of the preferred scenario and describes management arrangements that will enable successful delivery of the programme.

This PBC provides the critical step of consolidating, validating and costing options to develop a robust investment rationale and implementation programme. This PBC seeks approval to proceed to Detailed Business Cases (DBC) for prioritised initiatives.

As this PBC is centred on water demand management, the scope is limited to specified public (drinking) water supply schemes in the district and some minor consideration of wastewater, specifically the additional load on wastewater treatment plants from high drinking water use. Stormwater is not considered in this PBC.

1.3 Structure of this document

This document follows the New Zealand Treasury's Better Business Case methodology. Headings largely mirror those included in the Treasury PBC guidance and template document.[3] Some headings have been adjusted to fit with the context of this specific investment proposal.

[3] https://www.treasury.govt.nz/information-and-services/public-sector-leadership/investment-management/better-business-cases/indicative-and-programme-business-cases

2 Strategic Case

The strategic case confirms the strategic context for implementing water demand management in the district and outlines the need for change.

2.1 Strategic context

2.1.1 Organisational overview

Council is responsible for managing infrastructure, which includes managing the Three Waters - wastewater, water supply and stormwater. Council is also responsible for environmental health and safety, such as protecting waterflows as part of protecting the mauri / life force of the natural environment. This is a key principle for enabling community and environmental wellbeing, particularly given Council's partnership with Kāi Tahu.

2.1.2 Operating environment

2.1.2.1 Growth and demand pressures

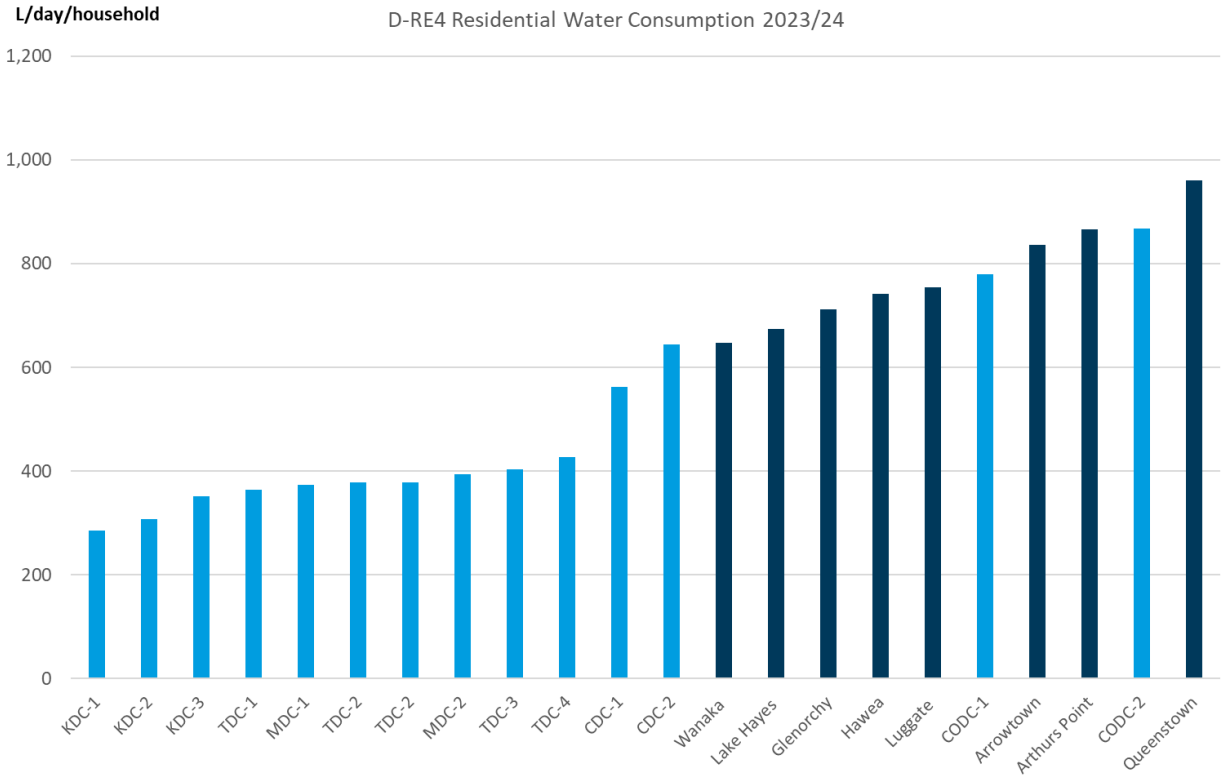
The district is one of New Zealand's fastest growing regions, with residential population projected to grow from 54,440 (2025) to 98,345 (2055) at 2% per annum, double the national rate of 0.9%.[4,5] Annualised population growth for the population supplied by water is even higher at 2.4% (2055). Visitor numbers are projected to increase from 27,000 average daily visitors (68,000 peak) in 2025 to 49,000 average (123,000 peak) by 2055.

The district's residential water consumption is high relative to comparable New Zealand water supply schemes. Figure 6 illustrates residential consumption of water (litres/day/household) by scheme, with Queenstown Lakes schemes accounting for 8 of the 10 highest-consuming schemes in this selection of comparable schemes.

[4] Total district population from Population and Demand - QLDC.

[5] 0.9% growth rate from Stats NZ – Subnational population projections: 2023(base) - 2053.

Figure 6: Residential consumption per household – Queenstown Lakes and a selection of comparable schemes[6]



Note: CDC = Clutha District Council (partially metered), CODC = Central Otago District Council (universal metering), KDC = Kapiti District Council (universal metering), MDC = Mackenzie District Council (universal metering), TDC = Tasman District Council (universal metering).

As well as high levels of consumption, there is high leakage across schemes (see Figure 12) which drives high water demand. During peak periods in summer, water demand increases up to threefold (see Figure 8). Together, these factors place significant pressure on water infrastructure and assets in the district.[7] This in turn places financial pressure on Council's customers and communities.

2.1.2.2 Historical approach and strategic shift

Historically, Council has prioritised supply-side interventions, such as upgrading the network and supplementing water sources, to address water infrastructure capacity risks. However, this approach has led to increasingly substantial financial pressures. Charging for water services is almost entirely through property rates. New economic regulation through the Local Water Done Well reforms (detailed in section 2.1.4.1) requires efficient water resource use and a move away from rateable value-based charging.

Managing water demand responds to these requirements, and aligns with Council's commitment to support environmental, social, cultural and economic wellbeing. It supports sustainable water use to safeguard the district's pristine sources for future generations and aligns with tākata whenua values of water stewardship through partnership with Kāi Tahu rūnaka.

[6] Network Enviromental Performance Measures data, 2023 – 2024. DRE-4 = median residential consumption for universally metered schemes and the average residential consumption for schemes without universal metering.

2.1.3 Water services in Queenstown Lakes

Service delivery model

Water services in the district are currently provided inhouse by the Council. At a Council Meeting on 31 July 2025, Council confirmed a Water Services Council Controlled Organisations (WSCCO) as the future delivery model for water services (operational from 1 July 2027), in line with the Local Water Done Well (LWDW) reform. The WSCCO will be wholly owned by Council and governed by an independent board.

The district's 11 public water supply schemes and four wastewater networks are outlined below.

Water supply

Council provides drinking water through 11 public water supply schemes, 9 of which are being considered for demand management (Table 3).[8] A detailed breakdown of demand units by customer type can be found in the Water Balance Model. The two largest schemes, Queenstown and Wānaka, are supplied from surface water (lake intakes), with remaining schemes supplied from groundwater bores. The district benefits from very high-quality source water due to its position at the top of the catchment.

Table 3: Relevant Council water supply schemes and demand units as of Jul 1 2025[9]

Scheme	Total demand units[10]
Arrowtown (excl. Millbrook)[11]	1,819
Arthurs Point	531
Cardrona[12]	No water demand data (see footnote)
Glenorchy	308
Hāwea	1,318
Lake Hayes	464
Luggate	279
Queenstown[13]	15,396
Wānaka	8,939

Wastewater

The district has four wastewater schemes, defined by their respective point of treatment and disposal – Shotover (covering the Queenstown-Whakatipu and Arrowtown-Kawarau wards excluding Glenorchy), Cardrona, Wānaka (including Luggate), and Hāwea.[14]

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[8] Schemes not considered: Corebridge and the Wānaka Airport schemes were excluded as they have very low number of connections and are both soon to be amalgamated with the Luggate scheme.

[9] Water Balance Model. QLDC network parameter data. Source: Water Level-2 report from QLDC.

[10] Total demand units per scheme, which is explained in Appendix 3.

[11] Millbrook has approx. 350 demand units and is considered a singular customer with its own agreement with QLDC.

[12] No water demand data provided. As such, the Cardona scheme is excluded from all presentations of water demand data but is still in consideration for demand management

[13] Queenstown includes Te Kirikiri Frankton, Shotover County and Lake Hayes Estate.

[14] Hāwea wastewater treatment plant is currently in the process of being decommissioned, with Hāwea wastewater pumped to the upgrade Wānaka facility.

2.1.4 Strategic alignment

Investigating and implementing water demand management in the district aligns with legislative requirements, Council's strategic priorities and a number of national, regional and local strategies, policies and goals. This section outlines key alignment across these elements.

2.1.4.1 Legislative and regulatory requirements

Local Water Done Well and the Local Government (Water Services) Act 2025

The LWDW reform programme is the Government's plan to address New Zealand's long-standing water infrastructure challenges, with the Three Waters remaining in local control. The Local Government (Water Services) Act 2025 ('the Act'), enacted in mid-2025, underpins this reform.

Three sections of the Act (which can be found in full in Appendix 4) are particularly relevant to water demand management:

- **Section 10:** provides territorial authorities with options for structuring the delivery of water services in the future, including WSCCO.
- **Section 17:** sets objectives for water service providers, including that water services must be reliable, cost-effective, financially sustainable, and use water resources 'efficiently'.
- **Section 86:** enables water organisations to set charges for water supply services, and prohibits water organisations from charging based on a property's rateable value (which is the method currently used to determine water charges in the district - see Appendix 5).

Water demand management directly supports compliance with Section 17's requirement for efficient water resource use and cost-effective service delivery. Universal water metering will enable Council (and subsequently the WSCCO) to move away from rateable value-based charging as required by Section 86 and implement volumetric charging as an alternative, and complementary, mechanism to fixed fees. Implementing meters and volumetric charges is strongly supported by Central Government (see Appendix 6).

Commerce Commission – Information disclosure for Water Services

The Commerce Commission is the economic regulator for water services and is introducing information disclosure requirements for regulated suppliers, such as councils and WSCCOs. The final determination of these information disclosure requirements was published on 24 February 2026.

The Commerce Commission's determination proposes that regulated suppliers disclose *'how the regulated supplier monitors and manages water demand and water loss across its networks, including the strategies, technologies, and operational practices used to improve water use efficiency and minimise nonrevenue water.'*[15] This is to support the efficient use of resources and align with the water efficiency objectives in the Act.

Implementing water demand management will enable Council to accurately report on water loss, fulfil upcoming information disclosure requirements and demonstrate commitment to improving water use efficiency.

Taumata Arowai - Drinking Water Standards and Drinking Water Quality Assurance Rules

Taumata Arowai – the Water Services Authority ('Taumata Arowai') is the drinking water services regulator for New Zealand. Taumata Arowai ensures everyone has reliable access to safe drinking water by setting standards, helping with compliance, and holding suppliers to account.

[15] Water Services Information Disclosure Determination 2026. Date of decision: 20 Feb 2026. C11 (1)(g).

Taumata Arowai also sets network environmental performance measures (NEPM) that water suppliers must report on. Council is required to be compliant with Taumata Arowai Drinking Water Standards and Quality Assurance Rules, and to report on NEPM. Water demand management will enable Council to better report on NEPM and demonstrate sustainable delivery of water to required standards.

2.1.4.2 QLDC Strategic Framework and priorities

Council's Strategic Framework (see Appendix 2) shows how community aspirations and wellbeing drive Council decisions. The framework identifies priority areas to address local issues and make meaningful progress toward outcomes.

Water demand management aligns strongly across the Strategic Framework:

Table 4: Strategic Framework Summary

Outcome area	Alignment with water demand management
Community outcomes	These reflect the community's aspirations for itself and collective values. Three community outcomes with relevance to water demand management are: • Opportunities for all: the district is a place of social, environmental and technological enterprise • Zero carbon communities: the district sets the standard for regenerative, low-impact living, working and travel. • Disaster-defying resilience: the district is a place that is ready and prepared for every emergency.
Wellbeing outcomes	• **Equity**: demand management enables a charging regime that reflects actual water consumption. • **Resilience**: helps to reduce stress on water networks during peak demand and shocks, improving network resiliency. • **Sustainability**: promotes efficient water use. • **An enabling built environment**: water infrastructure can support growth and liveability in the district, now and in the future.
Core activities	These are Council's everyday essential activities. Activities with relevance to water demand management include resource consents, water supply, wastewater, strategic growth – spatial plan, and climate action and resilience.
Strategic investment priorities	• **Get the basics right first:** protect human and environmental health, maintain levels of service, readiness for the future. Demand management enables Council to maintain levels of service during peak demand periods, now and in the future. • **Directly invest in infrastructure and services**: provide for growth, build resilience and ability to adapt to the future, reduce carbon emissions. Demand management complements infrastructure investment by supporting growth, strengthening resilience, and lowering emissions through reduced water use.

2.1.4.3 QLDC strategies and plans supporting water demand management

The need for a comprehensive approach towards water demand management gives effect to a number of Council policies and strategies, each of which is outlined in Table 5 below.

Table 5: Related local strategies and policies

Strategy / Policy	Description and relevance
QLDC Water Services Delivery Plan 2025[16]	Describes current state of Council's water assets and services, and future arrangements for water service delivery. The WSDP emphasises the importance of water demand management initiatives for sustainable and efficient service delivery. It states, 'the capital programme outlined in this Plan includes implementation of volumetric charging'. The Department of Internal Affairs approved this Plan on 3 November 2025.
QLDC Three Waters Asset Management Plan ('AMP') 2024/25	Details the approach for delivering water, wastewater and stormwater services cost-effectively to achieve long-term strategic goals. Water demand management supports the purpose of providing access to safe and reliable water supplies.
QLDC Long Term Plan ('LTP') 2024 – 2034[17]	Outlines Council's 10-year plans, costs and funding. The LTP provisions approx. $50 million for implementing water demand management across the district in the next 10 years.
QLDC 30-year Infrastructure Strategy 2024 - 2054[18]	Sets strategic direction for infrastructure provision. The strategy identifies water supply as a significant issue over the next 30 years, with demand management highlighted as a key supporting initiative.
Queenstown Lakes Spatial Plan 2021[19]	Sets out the strategic growth plan for the district, ensuring future growth happens in the right places with the right infrastructure and services. Water demand management aligns by delivering responsive and cost-effective infrastructure (Strategy 2).
QLDC Climate and Biodiversity Plan 2025 - 2028[20]	Sets climate and biodiversity actions for 2025-28. Water demand management directly supports actions 5.6 (promoting responsible water usage), 1.4 (protecting waterflows as part of protecting the mauri / life force of the natural environment, 2.1 (emissions reduction investments) and 2.8 (Climate Risk assessment). Protecting the mauri of the water aligns with honouring tākata whenua community values and aspirations, which Council seeks to support in their partnership with Kāi Tahu.

2.1.4.4 Regional policy and planning context

Water demand management aligns with the regional policies, strategies and goals described in Table 6 below.

Table 6: Related regional strategies and policies

Strategy / Policy	Description and relevance
ORC Land and Water Regional Plan[21]	Sets water quality and quantity management rules for Otago. Water demand management supports sustainable water use within this framework

16 QLDC - Our Water Done Well

17 QLDC - Long Term Plan (LTP)

18 https://www.qldc.govt.nz/media/o5bprma2/qldc_infrastructure-strategy_2024-2034_final.pdf

19 Spatial Plan - QLDC

20 Climate & Biodiversity Plan 2025–2028 adopted | Climate Action and Biodiversity

21 https://www.orc.govt.nz/your-council/plans-and-strategies/land-and-water-regional-plan/

Strategy / Policy	Description and relevance
Regional Plan: Water for Otago[22]	The plan promotes the sustainable management of Otago's water resources and sets water allocation limits across Otago. Water demand management supports sustainable water use within allocation framework and reduces pressure on water resources.
Proposed Otago Regional Policy Statement 2021[23]	Provides policy direction for resource management in Otago. Water demand management aligns with objectives for sustainable water resource management and infrastructure development. *[Currently still in court proceedings, could be updated further].*
Wellbeing Framework for Otago[24]	Articulates wellbeing goals for the Otago region. Water demand management contributes to environmental, social and economic wellbeing through sustainable water management.

2.1.4.5 National Policy Context

Water demand management aligns with several other national strategies and policies as outlined in Table 7 below.

Table 7: Other national strategies and policies of relevance

Strategy / Policy	Description and relevance
National Infrastructure Plan, Te Waihanga-Infrastructure Commission[25]	The National Infrastructure Plan sets out the challenges and opportunities in delivering the forward pipeline of infrastructure in New Zealand. In identifying opportunities in the water sector, this plan calls out volumetric water charging as an effective means to manage demand and reduce the need to construct new infrastructure to address growing water use.
National Policy Statement for Freshwater Management 2020 ('NPS')[26]	Requires sustainable freshwater management and protection of Te Mana o Te Wai, prioritising the health and mauri / life force of freshwater. Water demand management reduces water abstraction and protects environmental flows supporting these objectives.
Resource Management Act 1991[27]	Requires sustainable management of natural and physical resources', including water. Water demand management is a vital step in sustainable management of water and will enable Council to stay within consent limits in all schemes.
Resource Management Act (Measurement and Reporting of Water Takes)	Requires daily electronic reporting of water takes > 5 litres/second. Water demand management mechanisms enable accurate measurement and reporting, along with Council compliance in schemes currently exceeding thresholds.

[22] https://www.orc.govt.nz/your-council/plans-and-strategies/water-plans-and-policies/regional-plan-water-for-otago/#purpose-of-the-plan

[23] https://www.orc.govt.nz/media/lrhpgaw3/clean-appeals-version-porps-21-9-december-2025.pdf

[24] https://www.orc.govt.nz/media/14706/orc-baseline-wellbeing-report.pdf

[25] https://tewaihanga.govt.nz/national-infrastructure-plan

[26] National Policy Statement for Freshwater Management

27 Resource Management Act 1991 No 69 (as at 17 December 2025), Public Act Contents – New Zealand Legislation

Strategy / Policy	Description and relevance
Amendment Regulations 2020[28]	
National Emissions Reduction Plan 2026 - 2030[29]	Sets the national direction for climate action and greenhouse gas emissions reduction. Water demand management contributes to emissions reduction by lowering energy use in water and wastewater treatment.
Treasury Living Standards Framework 2021[30]	Framework for assessing policy impacts across wellbeing dimensions. WDM contributes to the environmental amenity domain through access to clean water and protection of water resources

2.1.5 Programme conception and work to date

This PBC builds on Council's Draft Water Demand Management Plan (2025), which set demand reduction targets in response to legislative requirements and district growth pressures. Council has been progressing water demand management for several years through pilot programmes and technical assessments. Key milestones are outlined in Table 8 below.

Table 8: Work to date

Year	Milestone
2018	Initial Council water demand management Business Case commenced
2023	Smart water meter trial installations in Glenorchy and Luggate (420 meters)
2024	Smart water meters installed in Hāwea (980 meters)
Apr 2025	Phase 1 of the Water Demand Management Plan completed
Sep 2025	Wānaka System Performance Assessment Report (SPAR)
Oct 2025	Queenstown, Hāwea, and Arthur's Point SPARs

These trials and technical reports have informed the problems, options, and investment approach considered in this PBC. In particular:

- The Hāwea residential meter pilot (2024) and smart meter trials in Glenorchy and Luggate (2023) provide evidence of implementation challenges and customer response.
- The System Performance Assessment Reports (SPARs) for Wānaka, Queenstown, Hāwea, and Arthur's Point (Sep-Oct 2025) quantify infrastructure capacity constraints and inform demand reduction targets.

[28] https://www.legislation.govt.nz/regulation/public/2020/0176/latest/LMS351161.html

[29] New Zealand's second emissions reduction plan 2026–30 | Ministry for the Environment

[30] https://www.treasury.govt.nz/sites/default/files/2021-10/tp-living-standards-framework-2021.pdf

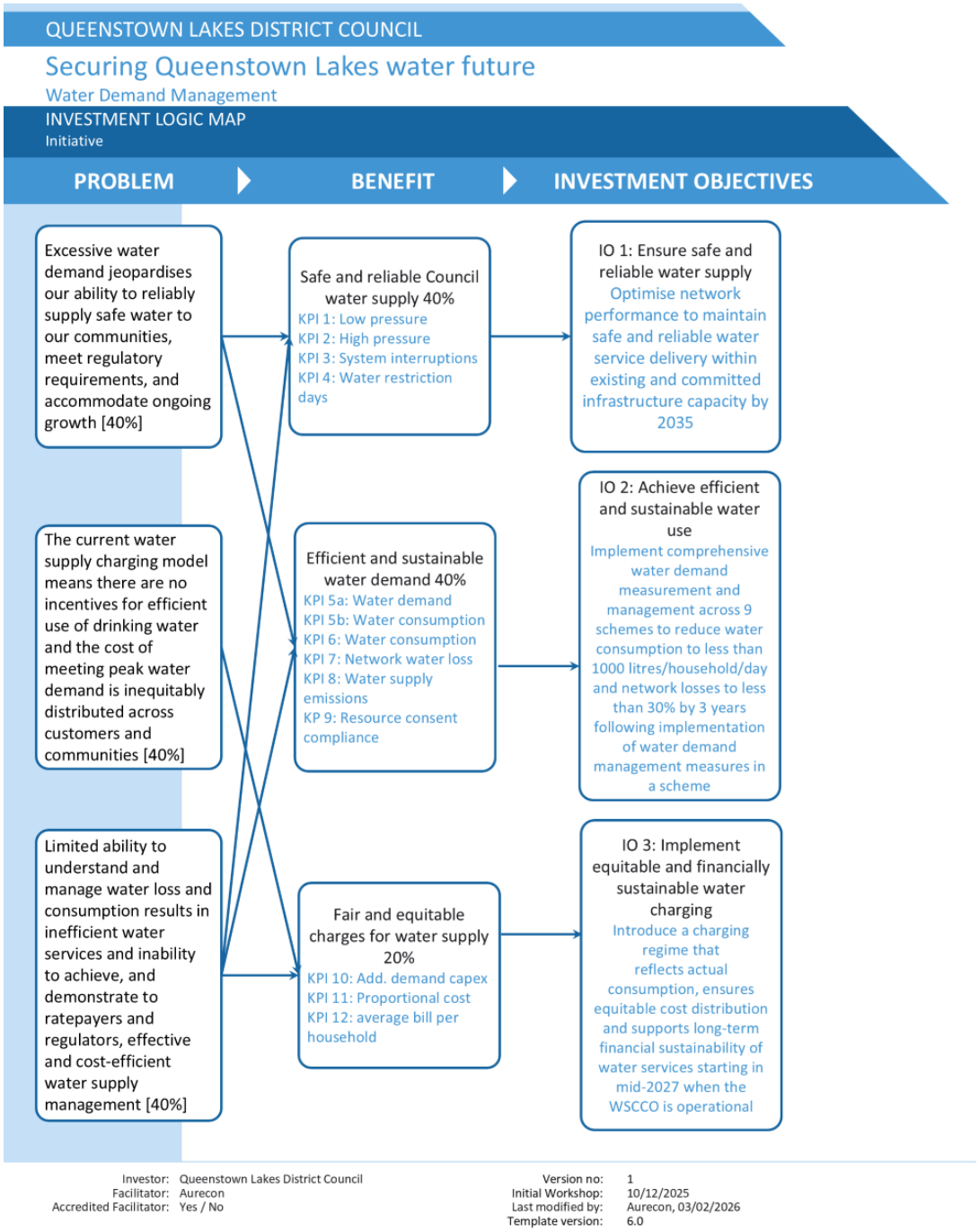
2.2 Case for change

The case for change sets out the problems and evidence, which form the rationale for investment. The case for change must be sufficiently compelling to drive further investigation and planning.

2.2.1 Investment Logic Map

The Investment Logic Map (ILM) for water demand management in the district is set out in Figure 7 below. It summarises the strategic case for water demand management in the district. It shows the three interconnected problems, the benefits that addressing these problems will deliver, and the investment objectives that will guide the programme. The following sections provide detailed explanation of each element.

Figure 7: Investment Logic Map for Water Demand Management Programme



2.2.2 The problems with water demand in the district

The district's water services are comprised of a number of discrete schemes that support relatively small populations due to geographic spread and geotechnical constraints; this distribution makes planning for future growth, compliance and levels of service more complex when compared to areas that have integrated networks servicing large population centres.

Council faces three interconnected challenges in delivering safe, reliable and financially sustainable water services. These challenges relate to excessive peak demand and infrastructure capacity, customer behaviour and cost structures, and water measurement and management. The three Problem Statements below articulate these challenges in detail.

2.2.2.1 Problem Statement 1

Peak demand exceeds infrastructure capacity:

Excessive water demand jeopardises our ability to reliably supply safe water to our communities, meet regulatory requirements, and accommodate ongoing growth

Many of Council's water supply schemes are at, or above, capacity during peak summer periods creating serious public health and safety risks. Four schemes (Wānaka, Hāwea, Lake Hayes, and Luggate) experience peak daily demands in the order of at least three times higher over the Christmas period than shoulder season demands.[31]

Individual problems feeding into problem statement 1 are:

- High seasonal demand, with peaks from irrigation and visitors
- Infrastructure capacity exceeded under peak demand
- Expanding infrastructure capacity to meet peak demand is not fiscally prudent
- Ongoing high growth will intensify capacity pressures
- Public health risks from low network pressure, and,
- Risk to security of supply during extended periods of hot, dry weather.

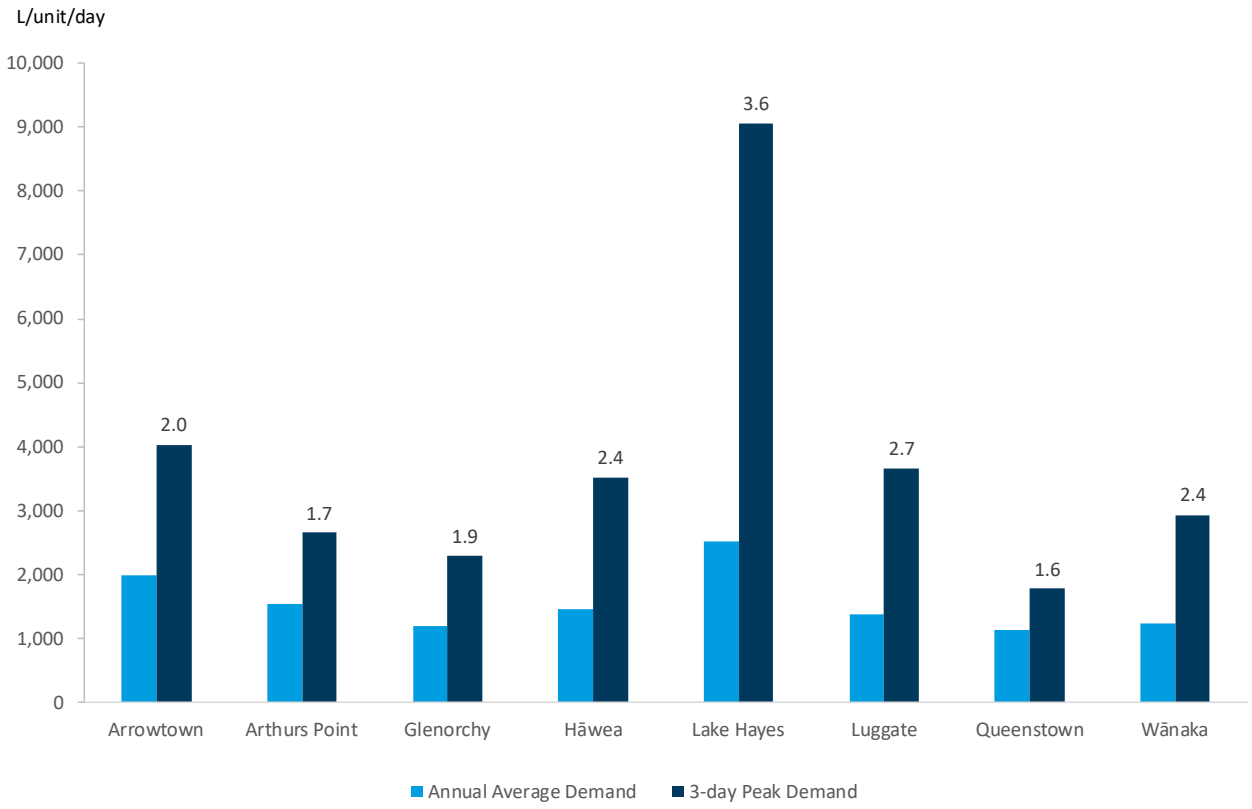
High seasonal demand, with peaks from irrigation and visitors

Water demand fluctuates significantly by season in the district. It peaks in summer, when all schemes experience heightened daily demand and some schemes experience daily demand more than three times higher than average. Figure 8 below outlines the 2024/25 annual average demand versus the 3-day peak day demand per scheme.[32] The units are litres per demand unit per day, illustrating the very high demand per customer. The data labels are the 3-day peak factor. All schemes have a peak factor over 1.5, five schemes have a peak factor over 2 and Lake Hayes has the highest peak factor, over 3.5.

[31] Three Waters Asset Management Plan, 2024 – 2034.

[32] Annual average demand normalised by the total number of demand units, excluding vacant

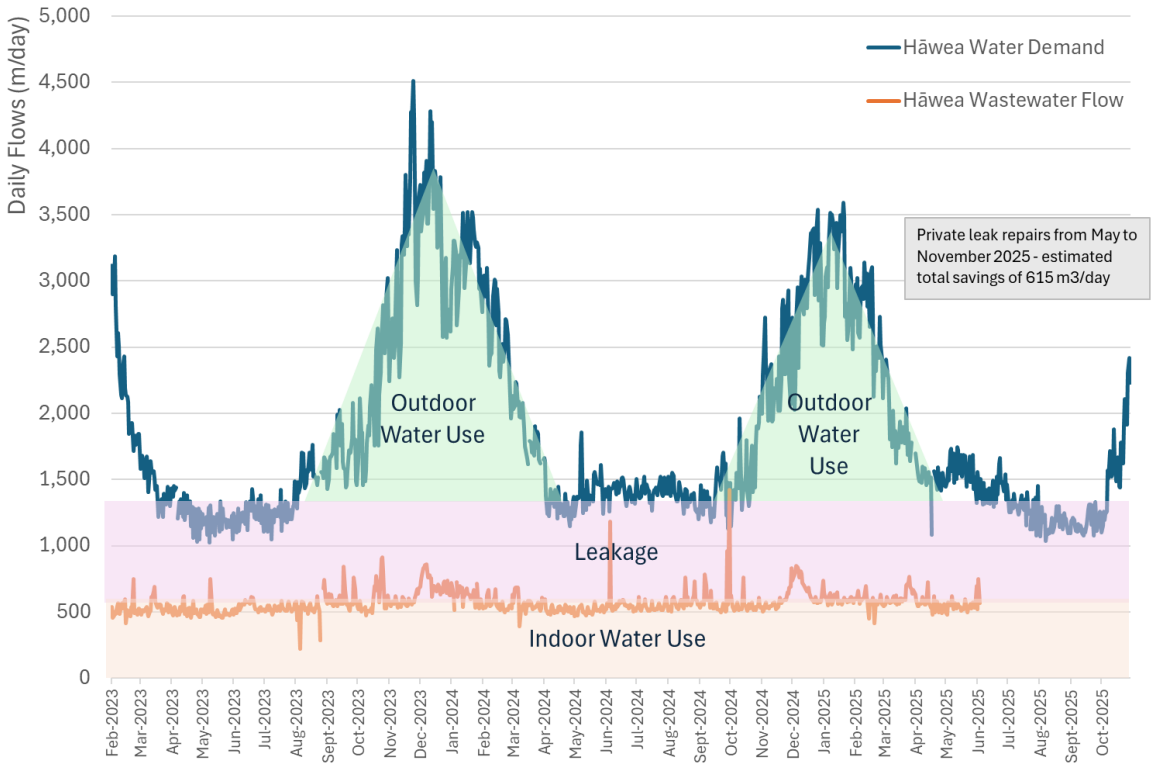
Figure 8: Annual Average Demand and 3-Day Peak Demand for 2024/25 by scheme



In 2025, the district had an estimated annual average of 27,000 visitors, with an estimated maximum day of 68,000. Visitors are a driver for peak summer demand but not the primary driver. Outdoor water use, primarily irrigation, is the predominant driver of peak summer demand. The evidence base includes seasonal demand trends, comparison of water demand versus wastewater flows and regression analysis of demands.

Figure 9 compares Hāwea's daily water demands against wastewater flows. During winter, water demand is primarily indoor water use and leakage, as there is expected to be almost no outdoor water use and irrigation. Winter dry weather wastewater flows are primarily indoor water use. Therefore, the gap between winter water demand and wastewater flow is primarily leakage from the network and private pipes. The peak water demands over the warmer summer months are primarily outdoor water use, largely irrigation. Outdoor water use during summer does not enter the wastewater system, as evident on the graphs by the relatively consistent wastewater flows for the two-year period from May 2023 to June 2025.

Figure 9: Hāwea water demand vs wastewater flow, by season



This highly variable demand exacerbates servicing challenges, as expanding infrastructure capacity to meet short-lived peak demand periods is not fiscally prudent (as explained below). Therefore, over the peak summer period, some schemes are at capacity, whilst others are overextended.

Infrastructure capacity exceeded under current peak demands

Across schemes, a combination of consented water take, pump capacity, treatment capacity and reservoir storage capacity system performance indicators are breached, overextended, or nearing capacity on peak days. Table 9 presents the results of the capacity risk assessment from the Draft 2025 Water Demand Management Plan. This compared the supply infrastructure capacity limits for each scheme against their seven-day peak demands from the 2024/25 summer. The seven-day peak demand factor is a rolling average of seven days which is a long duration that may mask several peak days in a row.

The peak demand assumption for this Business Case is a three-day peak factor based on the three-day rolling average. This peak factor will capture periods of sustained high demand and reduce the influence of one-off operational anomalies if the actual peak day was adopted as the peak factor. Historically the networks have been more overextended or closer to capacity on single days than illustrated below.

Table 9: 2025 Capacity Risk Assessment by scheme

Scheme	Consent Limit *(Maximum)*[33]	Consent Limit (Annual Average)	Intake pumping[34] *(sustainable limit)*	Treatment Plant[34] *(sustainable limit)*	Storage *(storage hours under peak demand)*[35]
Arrowtown	71%	Breached	89%	129%	6
Arthurs Point	43%	35%	202%	115%	15
Glenorchy	33%	23%	155%	35%	18
Hāwea	Breached[36]	59%	81%	82%	6
Lake Hayes	Breached[37]	-	68%	124%	13
Luggate	48%	-	87%	-	6
Queenstown	69%	-	78%	55%	18[38]
Wānaka	60%	-	91%	66%	10

The Draft 2025 Water Demand Management Plan predicts that, under current demand and without demand reduction, these supply capacity issues will worsen. Intake pumping capacity is forecast to be breached for Arrowtown in 2027, Wānaka in 2028, and Hāwea in 2031. Hāwea will also breach sustainable pumping limits in 2031.[39]

Expanding infrastructure capacity to meet peak demand is not fiscally prudent

Building infrastructure to meet the district's excessive peak demands would require significant capital investment. Sizing and maintaining infrastructure to meet these excessive demands means water assets would be underutilised for most of the year, which does not align with the principles of efficient, cost-effective, and financially sustainable water services, per s17 of the Local Government (Water Services) 2025 Act.

Ongoing high growth will intensify capacity pressures

High residential growth is expected in the district, with growth projected at 2% per annum compared to 0.9% nationally over the next 30 years, as outlined in Figure 10. This generates high levels of subdivision and development activity, which places increasing pressure on water assets. Without demand interventions, Council will need significant additional water infrastructure capacity in the short to medium-term.

[33] Percentage of consent take used on either maximum day or maximum month, whichever of the two was higher.

[34] The sustainable limit is the limit at which water supply infrastructure can reliably operate over the longer term, allowing time for maintenance. All sustainable limits are based on equipment (UV or pump) running for 16 hours per 24 hour day.

[35] Target is 12 hours of reservoir storage under peak demand.

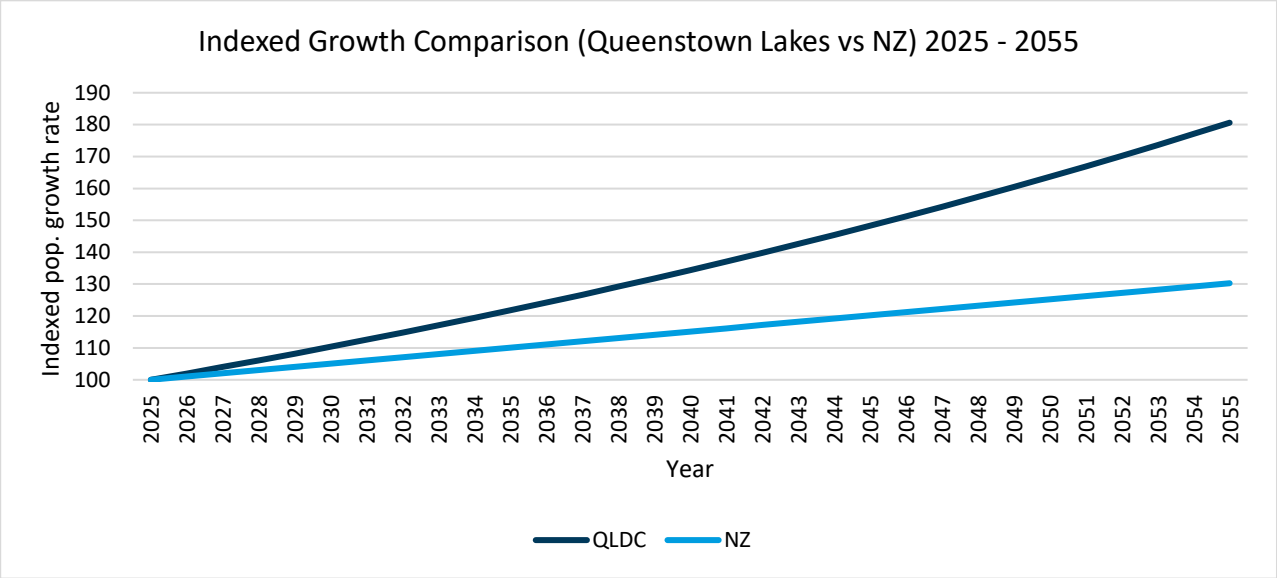
[36] Hāwea breached the monthly consent limit.

[37] Lake Hayes exceeded both the monthly and the daily consent limit.

[38] The area supplied by Shotover County, including Te Kirikiri Frankton has 50% of the storage required, according to the 2025 Queenstown System Performance Assessment Report.

[39] The Draft 2025 Water Demand Management Plan is the data source until updated 2026 forecasts are available. These forecasts are 7-day peak forecasts.

Figure 10: Indexed Population Growth Comparison (Queenstown Lakes vs. NZ) 2025[40]



Increasing visitor numbers add to this pressure, with average daily visitors projected to reach 49,000 by 2055 and peak day visitors at 123,000. Under these projections, visitor numbers are up approximately 80 percent from 2025 figures.

With this level of growth, current shortfalls in storage, pump station capacity and treatment plant flow rate are expected to increase, worsening the current supply capacity issues on peak days. This could lead to reservoirs failing to have sufficient emergency storage.

Public health risks from low network pressure

Public health risks arise when there is low network pressure, which can occur under high seasonal demands.

Low pressure in water networks risks contaminating drinking water via backflow, where polluted water from private properties (e.g. pools) may be sucked into the mains if there is no backflow protection on the connection. Additionally, if there are leaks or breaks in the pipe network, sediments and bacteria from outside the pipe can enter the mains and contaminate the drinking water. This creates a serious health risk, compromising water quality and safety. Contaminated water can cause illness and even death.

Low pressure also poses a risk for emergency response, with risk of insufficient supply for firefighting.

Risk to security of supply

Interruptions to supply are possible during drought conditions if effective water demand management is not implemented. A severe drought could even mean a loss of supply, leaving customers and communities without access to drinking water.

Climate change is expected to exacerbate and compound this risk. The National Institute of Water and Atmospheric Research project that drought conditions will become more frequent and severe, with Queenstown spending 10 percent additional time in drought by 2040.[41] This increases the risk of insufficient water supplies during times of drought or emergency, precisely when demand may be highest.

[40] NZ Population growth rate from Stats NZ, 2023 – 2053. Therefore, assumption that growth rate of 0.9% can be applied to two more years – 2054 and 2055.

[41] https://niwa.co.nz/climate-change-adaptation-toolbox/projected-regional-climate-change-hazards/regional-projections-zone-5

2.2.2.2 Problem Statement 2

No incentives for efficient water use and inequitable cost distribution

The current water supply charging model means there are no incentives for efficient use of drinking water, and the cost of meeting peak water demand is inequitably distributed across customers and communities.

The current charging model is comprised of a fixed fee per scheme plus a fee based on property rateable value (see Appendix 5). This means there is no financial penalty for excessive use and no incentive to use less water. Problems feeding into problem statement 2 are:

- No incentives to reduce consumption, and
- Inequitable distribution of cost of excessive use.

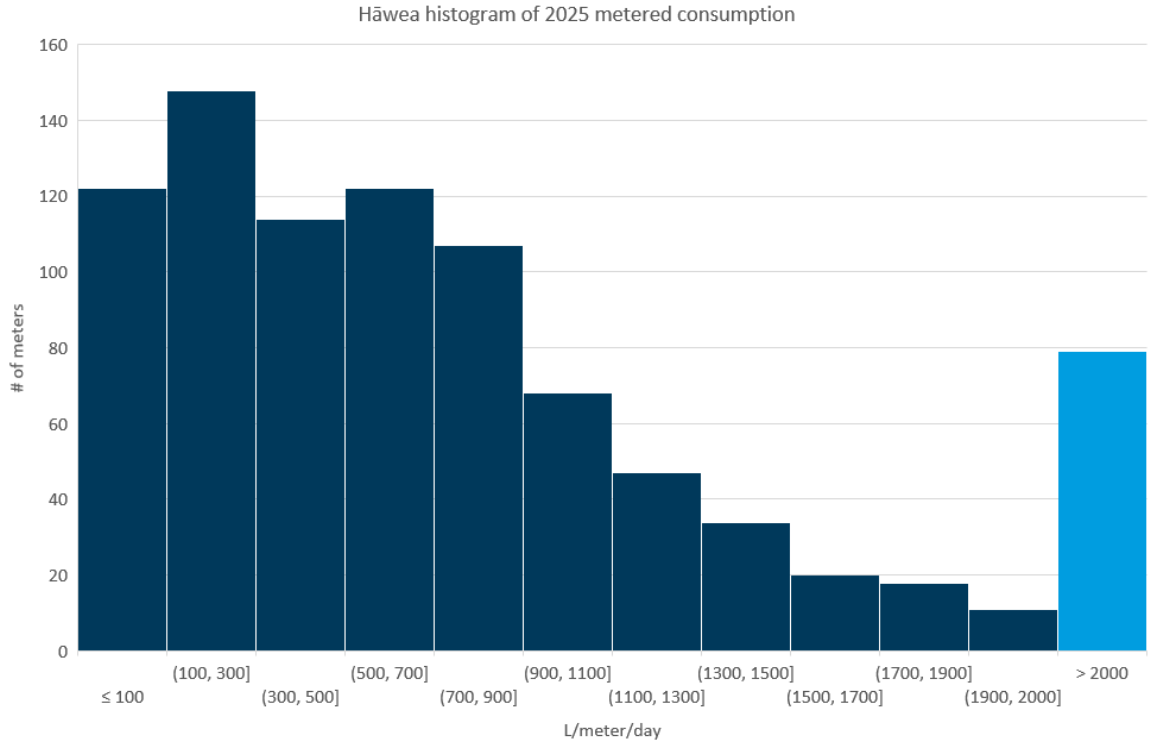
No incentives to reduce consumption

The district's water consumption is one of the highest in New Zealand (see Figure 6) yet there are no volumetric charges for water, and the bylaw is a clumsy mechanism that will only manage the most extreme examples of excessive use.

The current charging model (see Appendix 5) means water bills are disconnected from actual consumption – a household using 500 litres per day pays the same as one using 3,000 litres per day (if their properties have similar values). High users have no financial incentive to reduce consumption, and low users have no reward for conservation.

This drives an inequity where a small number of customers have very high water use and consume a disproportionate percentage of the peak demands. For example, Figure 11 shows metering data from Hāwea in 2025, where 9% of meters were extraordinary water users (more than 2000 litres per day) while 30% of meters used less than 300 litres per day.

Figure 11: Hāwea histogram of 2025 metered consumption



Most schemes are expected to have a small number of customers with very high water use that consume a disproportionate percentage of the peak demands. Queenstown is the most urban of the water schemes and commercial customers are more likely to be the high water users not residential/lifestyle/rural.

Inequitable distribution of cost of excessive use

The current charging model creates a fundamental equity problem: all users essentially subsidise high users. Ratepayers who conserve water are cross-subsidising those who consume excessively. High users do not proportionately pay for the stress they impose on the water supply network.

2.2.2.3 Problem Statement 3

Limited ability to understand and manage water loss and consumption

Limited ability to understand and manage water loss and consumption results in inefficient water services and inability to demonstrate effective, cost-efficient water supply management to ratepayers and regulators.

The Council is currently lacking the tools or capacity to understand, and therefore manage, water demand in the district. Tools include proper network configuration, e.g., sufficient District Metered Areas (DMAs) to understand water loss and consumption, and the correct data to inform decision-making.[42] Capacity pertains to Council's current inhouse capacity to implement water demand management, with consensus that additional resources would need to be brought onboard to administer a water demand management programme. Without better information on water loss versus customer consumption, it is challenging for Council to illustrate effective and cost-efficient water supply management, as stipulated within Section 17 of the Act (see Appendix 4).

Problems contributing to problem statement 3 are:

- High uncertainty on split of consumption and leakage,
- Cannot measure, monitor or manage leakage effectively,
- Regulatory compliance pressure,
- Energy and carbon cost of high water demand, and
- Widespread high pressure in some schemes.

High uncertainty on split of consumption & leakage

Currently, the only means of reliably measuring demand in all networks is at the treated water supplied level. Leakage is estimated once per year using the minimum night flow method. This provides a snapshot estimate for leakage but the split between leakage on the network and on private properties is unknown. Customer consumption is typically estimated from the total water supplied minus estimated network leakage and has high uncertainty. There are also challenges in accurately identifying leaks, particularly whether they are in Council's infrastructure or from private properties.

There is very limited customer metering. The recent smart meter trials in Glenorchy, Luggate and Hāwea cover only 9% of the district's residential customers. Council are in the early stages of analysing the smart meter data and undertook private property leak investigations in these networks in late 2025.

[42] District Metered Areas are specialised zones within a water distribution network that are closely monitored for flow and pressure, Network Environmental Performance Report 2023-24

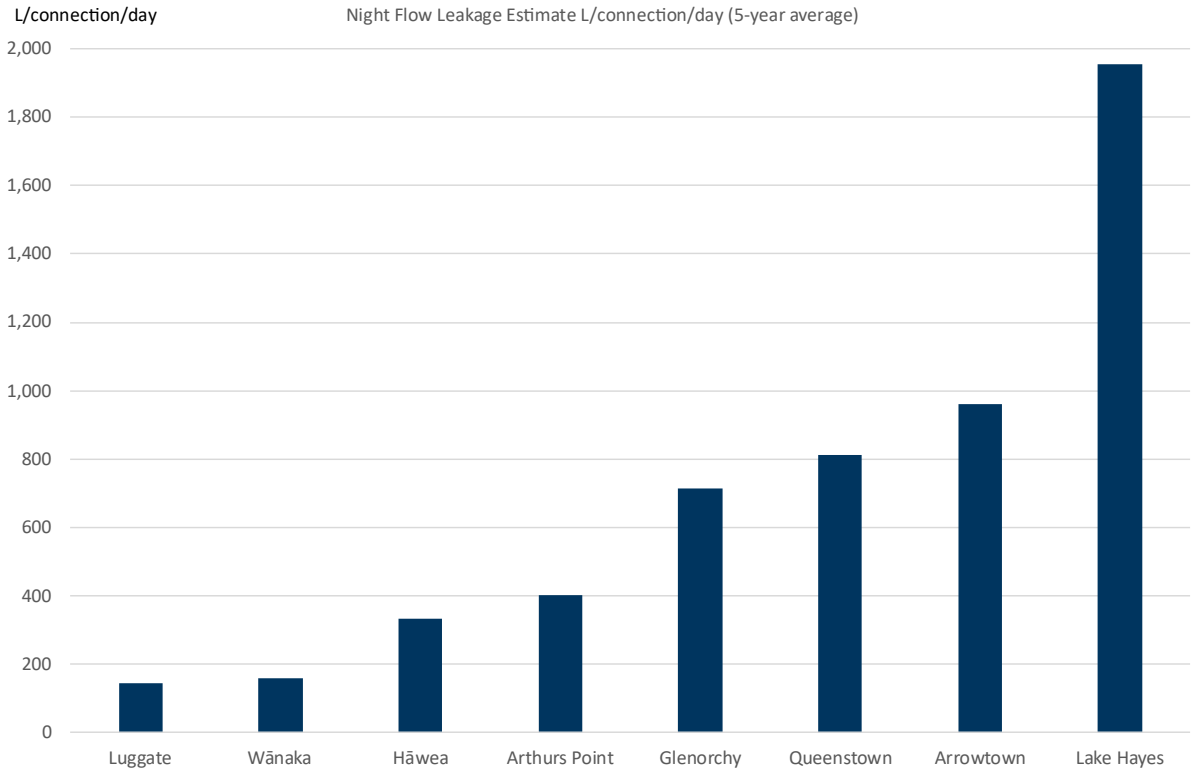
Almost all non-residential customers are unmetered, yet non-residential consumption is typically disproportional to the number of connections.[43]

Cannot measure, monitor or manage leakage effectively

Estimated network leakage is very high, with a weighted average of over 500 L/connection/day (20 to 50 percent of total water demand by scheme). The 5-year average of estimated daily leakage per connection ranges from 144 litres in Luggate to an immense 1954 litres in Lake Hayes (Figure 12).

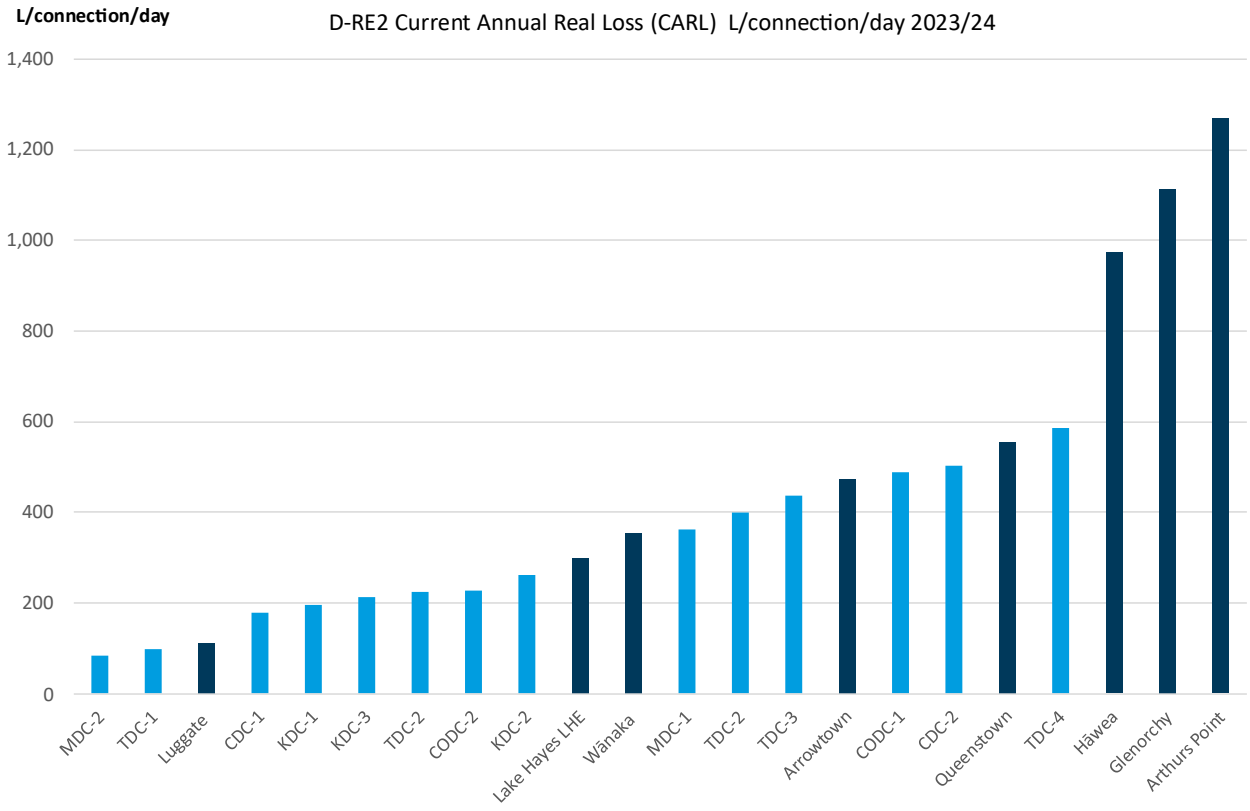
This level of leakage is high relative to comparable New Zealand water supply schemes (Figure 13). In 2023/2024, the Queenstown Lakes schemes have some of the highest levels of leakage. Luggate has low leakage, likely due to the smart meter trial. Lake Hayes has very high leakage (Figure 12), but appears lower in Figure 13 as Lake Hayes Estate is included in Lake Hayes for this figure only (Lake Hayes Estate is now part of the Queenstown scheme).

Figure 12: 5-year average estimate - leakage per connection per day by scheme



[43] In 2024/25 Tauranga City Council's non-residential customers represented 29% of consumption but only 8% of the number of connections, Water NZ conference

Figure 13: Leakage per connection per day – Queenstown Lakes and a selection of comparable schemes[44]



Council completes ad hoc leak detection surveys, and outside of this relies on public service requests for leaks that appear above ground. Council cannot regularly monitor night flow demands at the district metered area level due to infrastructure challenges and not enough bulk meters. These challenges, combined with almost no customer metering, prevent Council from measuring, monitoring and managing leakage effectively. Council cannot move to a proactive approach to leak detection and repair without addressing these issues.

Regulatory compliance pressure

Due to upcoming economic regulation and information disclosure requirements (as outlined in 2.1.4.1), Council will need provide more accurate and comprehensive to reports on their network leakage. Additionally, information disclosure requirements may drive ratepayer scrutiny of current water management.

Energy and carbon cost of water demand

In Financial Year (FY) 24/25, Water supply produced 723.3468 tCO_2e of emissions. Water supply services represent a significant proportion of Council's total electricity use and electricity tariffs are projected to increase significantly by 2030.[45] The financial and environmental cost of water supply and treatment is high and increasing, and reduced demand will lower energy and carbon impacts.

[44] Network Enviromental Performance Measures data, 2023 – 2024. D-RE2 Current Annual Real Loss (CARL) in cubic metres divided by the total number of connections and normalised to L/connection/day.

[45] Line charges, which represent 35 – 45 percent of total electricity bills, are estimated to increase 25 – 35 percent by 2030 in real terms – Boston Consulting Group. https://www.bcg.com/publications/2025/energy-to-grow-securing-new-zealands-future

Widespread high pressure in some schemes

Arthur's Point, Hāwea and Queenstown (as outlined in Appendix 8) all have varying levels of high pressure in parts of their networks, which can negatively impact efficient and sustainable water supply. High pressure places additional stress on pipework and increases leakage, and causes higher pumping costs and lower life of water pipes.[46, 47]

2.2.3 Investment objectives, existing arrangements & business needs

2.2.3.1 Investment objectives

Three overarching problems have been identified with water demand in the district. The three problem statements have been used to inform the development of programme investment objectives. Investment objectives are what Council is seeking to achieve through investment. Key stakeholders identified and agreed the following investment objectives:

Investment objective one: Ensure safe and reliable water supply

Optimise network performance to maintain safe and reliable water service delivery within existing and committed infrastructure capacity by 2035.

Investment objective two: Achieve efficient and sustainable water use

Implement comprehensive water demand measurement and management across nine schemes to reduce water consumption to less than 1000 litres/household/day and network losses to less than 30% by 3 years following implementation of water demand management measures in a scheme.

Investment objective three: Implement equitable and financially sustainable water charging

Introduce a charging regime that reflects actual consumption, ensures equitable cost distribution and supports long-term financial sustainability of water services starting in 2027, when WSCCO is operational.

2.2.3.2 Existing arrangements and business needs

A snapshot of the current state, relative to each of the Investment Objectives, is provided in the table below.

Table 10: Summary of the existing arrangements and business needs

Investment Objective One	Optimise network performance to maintain safe and reliable water service delivery within existing and committed infrastructure capacity by 2035
Existing Arrangements	Network configuration limits network performance. Limited number of DMAs, and suboptimal granularity of data on water demand, renders it difficult to optimise network performance. Currently: • Four schemes (Wānaka, Hāwea, Lake Hayes, Luggate) experience peak demand three times higher than shoulder season demand • Across schemes, much of water supply infrastructure is at or above capacity during peak summer periods • Low pressure events occur during high demand • High pressure prevalent in Arthur's Point, Hāwea, and Queenstown schemes • System leakage estimated at 20 to 50 percent of all water production by scheme

[46] https://www.dunedin.govt.nz/services/water-supply/water-pressure

[47] https://ccc.govt.nz/services/water-and-drainage/water-supply/about-the-water-supply/water-pressure

	• Limited network monitoring capability • Reactive leak detection and repair • Resource consent non-compliance (Lake Hayes, Arrowtown)
Business Needs	The gaps between the desired future state and the existing arrangements are the business needs. Business needs relating to Investment Objective One are: • Universal customer water metering, enabling leak detection on private property and effective management of demand to reduce peak demands. Particularly in highly impacted networks (Wānaka, Hāwea, Lake Hayes, Luggate) and those with consent non-compliance (Lake Hayes and Arrowtown). • Updated network configuration enabling optimised performance, e.g., ensuring all DMAs active and main flow meters are functioning • Upgraded pressure management systems to manage areas of high pressure, including through the identification of pressure zones and the use of pressure reducing valves • Enhanced programme of leak detection and repairs, including through customer meters. Frequency of leaks factor into prioritisation for renewals of water supply mains.
Investment Objective Two	**Implement comprehensive water demand measurement and management across nine schemes to reduce water consumption to less than 1000 litres/household/day and network losses to less than 30% by 3 years following implementation of water demand management in a scheme**
Existing Arrangements	Currently, Council cannot accurately measure water demand at a level that would enable effective water demand management . Further, whilst there are demand management mechanisms, such as water restrictions, there are not mechanisms that are able to be applied in a more targeted way, aiming at high users. Existing arrangements include: • Reliance on estimates of per-person consumption • Application of water restrictions as key demand management tool[48] • Inability to effectively apply Section B4 of the QLDC Integrated Three Waters Bylaw 2021, dealing with leaks and excessive use. • Current charging regime of fixed fee plus targeted rate based on capital value. High users have no financial incentive to reduce consumption, and low users have no reward for conservation. • Challenges in accurately identifying the source of water leaks, particularly sub-surface leaks which are hard to detect and can occur beyond the connection point within private property boundaries. As customers are not aware of their own water use, they often do not know when they have a significant leak.
Business Needs	Business needs relating to Investment Objective Two are: • Universal customer metering, which will provide data at a sufficient granularity to understand and measure water consumption and loss, hence enabling demand management • Update to excessive water use clauses in the bylaw (QLDC Integrated Three Waters Bylaw 2021).

[48] QLDC has a four-tiered water alert level system, where level zero is 'no restrictions' and level three is 'no use of outside water systems, no sprinklers or hand-held hoses at any time, and no contractor water take'.

	• Charging regime that reflects consumption, creating financial incentives to reduce use.
Investment Objective Three	**Introduce a charging regime that reflects actual consumption, ensures equitable cost distribution and supports long-term financial sustainability of water services, starting in 2027, when the WSCCO is operational.**

Existing Arrangements	The current charging model is based on a fixed annual charge per separately used or inhabited part ('SUIP') of a rating unit, plus a targeted rate based on capital value and land use per rating unit, both derived by scheme. This means water supply bills are disconnected from actual consumption. Specifically, ratepayers pay:
	• A flat fee per SUIP by scheme, ranging from $240 to $870, scheme-dependent, and
	• A targeted rate based on land use (e.g., residential, commercial, accommodation) and rateable capital value, by scheme.
	  ○ E.g., Residential (cents in the $): 0.00016249 for Queenstown, 0.00023180 for Hāwea.
	  ○ E.g. 2, CBD Commercial (cents in the $): 0.00028152 for Arrowtown, 0.00025563 for Wānaka.
	• See Appendix 5 for more details on specific scheme's costs.
	• As charging is not related to water consumption, users who use less water essentially subsidise those who use more, which is an inequitable cost distribution.

Business Needs	Business needs relating to Investment Objective Three are: • Universal customer metering to enable a charge based on water use • Charging regime that incorporates users water demand (consumption and loss) as (at minimum) a proportion of the cost

2.3 Main benefits

Investment in water demand management would lead to three primary potential benefits for the district. These are safe and reliable water supply, efficient and sustainable water demand, and fair and equitable charges for water supply, as described in the table below. These would benefit both Council and the local community, aligning with legislative and regulatory requirements, QLDC's Strategic Framework, protecting the environment and improving equity of water supply rates. See section 6.4 for discussion on benefits realisation.

Table 11: Analysis of primary potential benefits

Benefit	Explanation
Safe and reliable Council water supply	• Reliable and improved security of supply • Ability to maintain pressures in the network, enabling public safety (ability to firefight, water quality and safety including preventing backflow) • Better understanding of water demand means District is better placed to manage it • Improved network efficiency (less leaks, consistent pressure) and therefore network resilience • Lower peak summer demand and less pressure on water supply network contributes to network resilience
Efficient and sustainable water demand	• Reduction in peak summer demand for drinking water • Reduction in energy use • Deferred carbon and capital cost of new water infrastructure • For networks supplied by groundwater – lower environmental impact from reduced demand • Reduction in network water loss
Fair and equitable charges for water supply	• Fair cost distribution where beneficiary pays – all users pay, including Council facilities • Reduction in financial pressure on household ratepayers • Active management of excessive use

Implementing water demand management could also lead to disbenefits, including temporarily variable council revenue, stranded assets and disproportionate impacts on low-income households. Further explanation is in the table below.

Table 12: Analysis of primary potential disbenefits

Disbenefit	Explanation
Short term variation in Council revenue	Potential for some volatility in revenue for Council to fund capital upgrades and expansions in the water supply networks, when water demand management is first implemented. Over the longer term, the charging regime can be structured to reduce volatility.
Stranded assets	If water demand management is extremely effective, and water demand rates fall significantly, there is potential that current water supply assets become 'stranded', meaning they become obsolete/liabilities prior to the end of their expected economic life. It would take extreme falls in water demand for this to occur, particularly with projected population growth.

2.4 Main risks

Initial key risks were identified with the PCG in December 2025. A discussion of these risks is below. Updated risks, specific to programme implementation, are in section 6.6 of the Management Case.

There are several major risks with this water demand management investment proposal, including community opposition, data quality and operational readiness to deliver, as outlined in Table 13. Risk relates to any uncertain event or condition that, if it occurs, will have a negative effect on Council's objectives. The most significant risks that might prevent, degrade or delay the achievement of the investment objectives are identified and analysed below. All risks will be monitored, managed and updated as the programme progresses.

Table 13: Initial risk analysis

	Main Risks	Risk Description	Comments & Risk Management Strategies (Mitigations)
1	**Community and stakeholder opposition**	Public resistance against water metering, volumetric charging, and outdoor water use restrictions due to perceived costs and fairness issues, or a perceived lack of necessity, i.e., feeling that there is lack of an actual need to implement water demand management due to the district's plentiful water resources. This leads to delayed or halted programme rollout; reputational damage; ineffective demand reduction; loss of political and governance support; adverse community reactions e.g., physical damage to Council meters	• Develop comprehensive communication strategy. E.g., providing data from existing meters (Luggate, Hāwea) to show current usage information. Showing where meters have enabled location of leaks. • Provide illustrative billing examples. Show cost breakdown of water production and supply compared to charges.
2	**Data quality and evidence limitations**	Poor-quality financial and operational (SCADA) data undermines the ability to set accurate demand targets, plan effective interventions, and produce reliable reporting. This leads to misallocated resources, inaccurate demand reduction targets and regulatory risks.	• Complete investigation of existing data and data quality review. • Establish assumptions and uncertainties that could be impacting evidence base.
3	**Operational capability and capacity (readiness to deliver)**	Insufficient capability and resources to implement and maintain demand management solutions, including metering installation and leak detection. This leads to implementation delays, reduced quality, failure to achieve water savings, and increased costs.	• Allocate dedicated Full Time Employees • Implement resource monitoring and contingency plans • Timetabling implementation over years • Establish Council / WSCCO responsibilities • Prioritisation of benefits to inform the implementation roll out • Leverage data from the pilot programmes to inform approach

	Main Risks	Risk Description	Comments & Risk Management Strategies (Mitigations)
4	**Insufficient and / or conflicting (Council) senior leadership support**	Weak executive support, including disagreement on recommendations, leads to fragmented implementation, insufficient funding, poor governance, or delayed decision-making. This could manifest as water demand management receiving reduced prioritisation, compromised resource allocation, and even potential project stalling.	• Engage senior leaders early and often. This includes the Executive Leadership Team (ELT), Asset and Infrastructure Committee and Full Council. • Clearly define roles and responsibilities • Document decisions • Present financial and risk mitigation benefits • Monitor leadership support and intervene if lacking
5	**Proposed water demand management solution does not provide the benefits expected**	Demand reduction measures fail to deliver anticipated savings leading to additional costly infrastructure required; reputational and stakeholder confidence loss.	• Consider staging options including, phased pilots, to test effectiveness ahead of full roll out • Establish KPIs rigorous accountability mechanisms and monitoring, reporting and continuous improvement processes • Develop a coordinated education and engagement programme to establish clear social norms for responsible outdoor water use across all customers groups. This is particularly important for low-price sensitivity customers who may not respond to pricing adjustments alone. • Introduce mechanisms to improve visibility and feedback on outdoor water use. • Provide practical tools and default guidance to make efficient outdoor water use behaviour easier, e.g., online set up checklists, recommended timer settings.

2.5 Key constraints, dependencies and assumptions

Implementation of water demand management is subject to the constraints, dependencies, and assumptions in Table 14.

Management strategies and registers have been developed to record management of these and they will be carefully monitored and managed during the programme.

Table 14: Key constraints, dependencies and assumptions

	Constraints	Notes
C1	**Budget**	The LTP 2024 – 2034 allocates approximately $52 million to water demand management. This project can therefore not surpass this limit.
C2	**Geographical**	Council is constrained by the geography of the district. Due to the topography, it is prohibitively expensive to implement pressure management, and the mountainous environment pose challenges for smart meter communications.
C3	**Capacity**	Water demand management measures will need to be rolled out in stages due to capacity of Council and local market.
C4	**Data quality**	The quality of financial and operational (SCADA) data is limited. For example, some DMAs are not currently in use, meaning there is limited night flow and leak information for some schemes.
	Dependencies	**Notes & management strategies**
D1	**WSCCO establishment**	Some decisions may be deferred to the WSCCO, meaning delay of key decisions. To manage this, the schedule, cost, delivery and compliance impacts of decision deferrals must be clearly communicated to key stakeholders (such as ELT, the WSCCO Establishment Team, Asset and Infrastructure Committee (AIC), and Council).
D2	**Regulatory environment**	Council must adhere to resource consent conditions, which can evolve. The 2025 QLDC Water Demand Management Plan outlines consent compliance as a key consideration and benefit of demand management. This compliance includes reducing demand, keeping abstraction volumes within consent requirements longer, and facilitating future consent approvals. This is managed through policy monitoring, maintaining dialogue with regulators and preparing flexible implementation plans.
	Assumptions	**Notes & management strategies**
A1	**Rates**	It is assumed that allocations within the LTP will not increase (aside from inflation adjustment, which the LTP accounts for).
A3	**Limited to no appetite to increase capital spend**	The Council has limited to no appetite to increase capital spend, driven by Central Government rates caps and stakeholder feedback.
A4	**Data**	Data used contains many assumptions, e.g., the demand projections for population and visitor numbers in the district to 2055, are an assumption. Summary costs and data assumptions are in the 'costs' tab of the Water Balance Model.

3 Economic Case

The Economic Case builds on the strategic context for implementing water demand management by analysing demand management options. The Economic Case identifies potential measures for demand management, assesses them against the Investment Objectives and Critical Success Factors, shortlists the strongest measures into programme scenarios and recommends the scenario most likely to offer best value.

The assessment covers two workstreams: physical and behavioural demand management measures, assessed through the long-list and short-list process in Sections 3.5 and 3.7; and water supply charge options, assessed separately in Section 3.5.3.

The water charges workstream analyses possible charging models for water supply, including volumetric charging. Volumetric charging, supported by universal metering, is a proven tool for managing water demand, with typical demand reductions of 20–30 percent following the introduction of metered, usage-based pricing.[49]

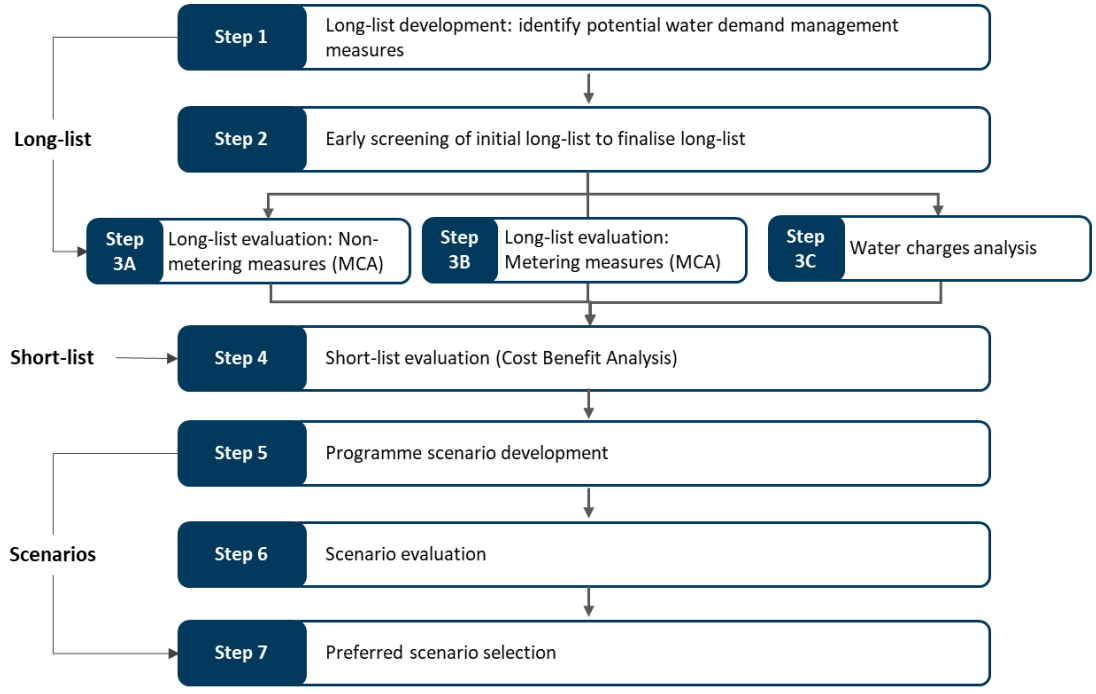
Water charges were analysed separately from physical and behaviour demand management measures as responsibility for selecting a specific water charge option sits with the WSCCO, and hence recommending an option was out of scope for this PBC.

3.1 Approach to options analysis

The approach to options analysis followed a structured, staged process to identify and assess water demand management measures relevant to the Queenstown Lakes District context and combine them into optimal programme scenarios. The process was undertaken with the PCG through a series of workshops and targeted review points.

As illustrated in Figure 14, the process stepped through consideration of a wide range of potential measures to a refined set of programme scenarios capable of meeting the Investment Objectives.

Figure 14: Approach to options analysis



[49] Water charges analysis report (see Appendix 12).

This staged approach ensured that early evaluation was proportionate and evidence-based, while enabling more detailed assessment to be focused on the measures and scenarios with the greatest potential to deliver the investment objectives. Subsequent sections describe each stage of the process in more detail.

The Investment Objectives and Critical Success Factors that underpinned this process are set out below.

3.2 Investment objectives

The Economic Case assesses measures against the three Investment Objectives (section 2.2.3.1) established in the Strategic Case:

- **IO1:** Ensure safe and reliable water supply
- **IO2:** Achieve efficient and sustainable water use
- **IO3:** Implement equitable and financially sustainable water charging

The Investment Objectives define the outcomes the programme must achieve. They informed the early screening of measures at Step 2 (3.4.1), the metering Multi-Criteria Analysis (MCA) benefit criteria at Step 3B* (3.5.2.1) and the Cost Benefit Analysis at Step 4 (3.7).

**refer section 3.5.2 for the rationale for using differing criteria for metered v non-metered measures*

3.3 Critical success factors

Where the Investment Objectives define the outcomes, the Critical Success Factors define what good delivery looks like in practice. They were developed with the PCG at the long-list to short-list workshop on 3 March 2026 and used to evaluate all non-metering measures in the MCA at Step 3A.

Table 15: Critical Success Factors

Critical Success Factors	Description
Likely water savings	The extent of estimated water savings volume, both annual average and peak, from this measure.
Likely cost effectiveness	Estimated cost-effectiveness from this measure. I.e., how well the measure optimises value for money, achieving the optimal mix of potential benefits, costs and risks.
Reduces peak demand	The extent of estimated reduction in peak demands from this measure.
Community Acceptance	The extent to which this measure is likely to be accepted by the community.

3.4 Long-list development

An initial long-list of 56 water demand management measures, drawn from local and international projects in relevant jurisdictions (Appendix 9), was developed to identify potential measures available to Council.

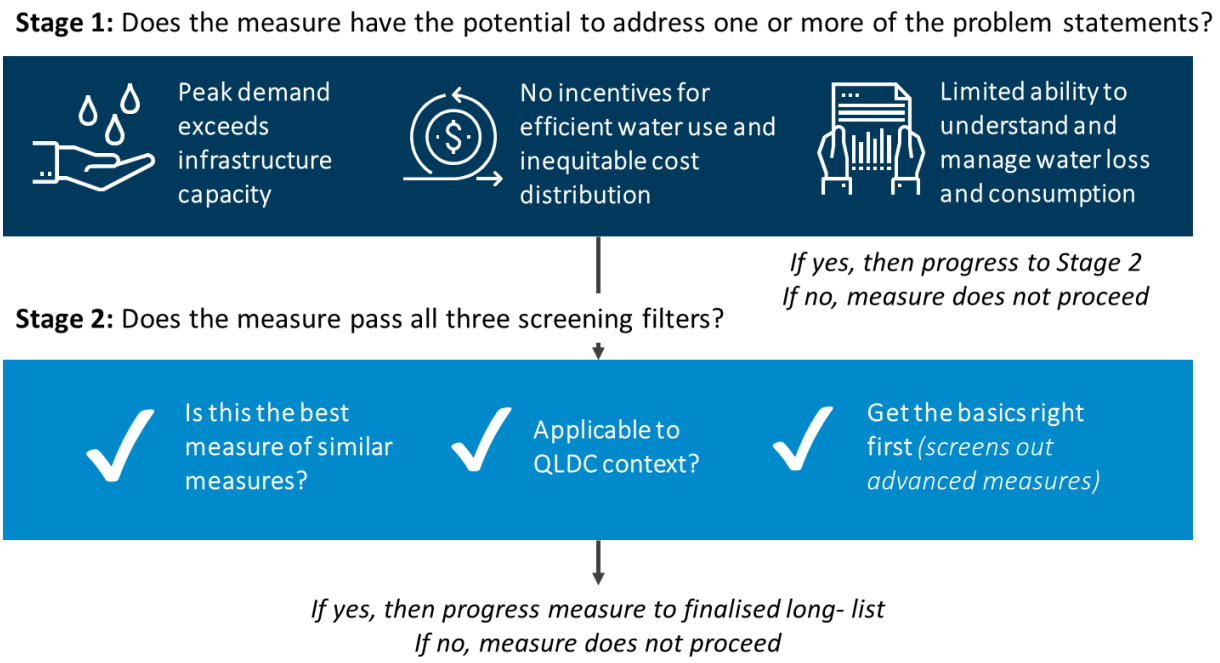
This section outlines how those measures were initially assessed to arrive at the finalised long-list.

3.4.1 Early screening of long-list

Early screening was applied to the initial 56 measures to quickly and robustly rule out those not relevant to Queenstown Lakes' context.

Measures were screened against the Problem Statements and three filters. Those aligning with one or more Problem Statements and all three filters progressed to the finalised long-list. See Figure 15 for detail.

Figure 15: Early screening process to finalise the long-list



In applying these filters:

- **Best measure of similar measures:** measures unlikely to provide the best value for money when compared to other, similar measures were not included in the long-list. For example, an innovation fund for bespoke activities for high water using business customers was ruled out for being less effective than a non-residential water efficiency programme.
- **Applicable to local context**: measures that have limited potential in the district due to topography, population spread, or regulatory settings were excluded. For example, measures relating to high-rise buildings were excluded because these are uncommon in the district, measures requiring district plan change were excluded due to difficulty.
- **Get the basics right first**: advanced measures were deferred in favour of more foundational approaches, for example thermal imaging with geospatial mapping to help identify leaks is considered an advanced measure. It was agreed that more basic mechanisms to address leaks should be addressed first.

3.4.2 The finalised long-list

Table 2 sets out the 32 measures that passed early screening and were carried forward into the long-list MCA evaluation process in Section 3.5.

Table 16: Finalised long-list measures

No.	Measure Name
1	Customer communication
2	Excess water use and enforcement
3	Non-residential water efficiency programme
4	Improve District Metered Area monitoring and proactive leak detection and repair

No.	Measure Name
5	Pressure management for the network
6	Smart networks with IoT connectivity and enabled devices
7	Universal metering with analogue meters
8	Universal metering with Automated Meter Reading (AMR) meters
9	Universal metering with Advanced Metering Infrastructure (AMI)
10	Rainwater tank incentive programme for residential
18	Voluntary hotel audit
20	Voluntary open space irrigation efficiency audit and retrofit
21	Mandatory open space irrigation efficiency audit and retrofit
24	Non-potable water for construction
25	Rainwater tank rebate programme for non-residential
27	Mandatory council facility water audits including operational use
28	Council open space irrigation during restrictions (Council open space irrigation optimisation)
29	Council open space irrigation efficiency audit and retrofit
30	Operational water use
32	Dual flush toilet rebate
33	Residential outdoor water efficiency education programme
37	Indoor water audits for targeted high use residential customers with follow-up
38	Water efficient landscape design standards (and working with retailers)
40	Rebate for the installation of a 4-star rated clothes washing machine
41	Efficient showerhead rebate
44	Free Waterline service to homes
46	Outdoor water audits for residential
50	Soil moisture sensor rebate
51	Pipe leak repair remission policy
53	Work with retailers to provide drought tolerant planting and efficient irrigation
54	Smart schools water programme
55	Mandatory school water audits

Appendix 9 provides a schedule of all measures including measure descriptions and rationale for those excluded from the finalised long-list.

3.5 Long-list evaluation

The finalised long-list was split into two parts for assessment – metering and non-metering measures.

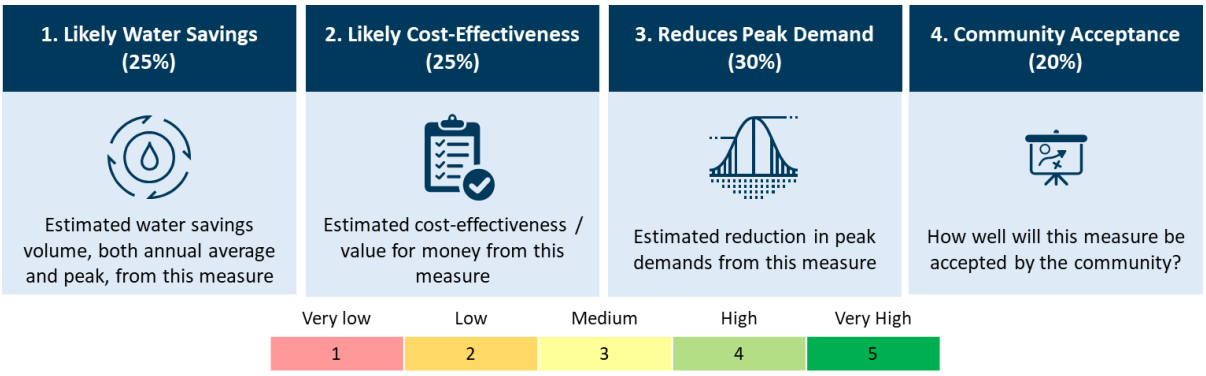
Both metering and non-metering measures were assessed through an MCA process. Non-metering measures were evaluated against the Critical Success Factors, whilst metering measures were evaluated against Investment Objectives and effort criteria. Different criteria were used due to the different ways in which metering and non-metering measures address the Problem Statements.

In parallel to this assessment, different approaches to water charges were analysed and discussed with the PCG. Decisions on the water charging approach will be made by the WSCCO and informed by community engagement under Council's Significance Policy. The water charge analysis here is intended to provide indicative guidance on what water charges could look like for the district.

3.5.1 Non-metering measures

There was 32 long-listed measures, of which 29 were non-metering measures covering customer and utility-side, infrastructure and non-infrastructure measures. As noted above, these were assessed against the Critical Success Factors (refer section 3.3) with weighting and scoring detailed below.

Figure 16: Critical Success Factors for evaluation of non-metering measures



Non-metering measures criteria weighting and scoring

Each Critical Success Factor was assigned a weighting to indicate its relative priority, as shown in Figure 16. Reducing peak demand was assigned the highest weighting at 30 percent, given its direct impact on Council's ability to reliably supply safe water and meet regulatory requirements; community acceptance the lowest at 20 percent, as it has less impact on reducing water demand than other criteria.

All non-metering measures were scored against each Critical Success Factor on a scale of one to five. Measures with the highest weighted score were carried forward to the short-list. Key considerations in scoring included:

- Measures focused on outdoor water use, such as 'residential outdoor water efficiency education programme', score high for Critical Success Factor three, reducing peak demand (Problem Statement 1), as historical analysis (Figure 9) indicates outdoor water use drives peak demand.
- Water restriction measures, such as 'excess water use and enforcement', and 'Council open space irrigation optimisation', are most efficient at reducing peak demand in comparison to other 'all customer' measures.
- Improving DMA monitoring and proactive leak detection and repair has the most potential of any measures for Critical Success Factor two, likely water savings, as this measure encompasses the entire network and leaks are a significant driver of water demand (Figure 13).

- Council-led initiatives, such as 'Council open-space irrigation efficiency audit and retrofit', are attractive as Council is seen to be leading by example and hence have a positive impact on community acceptance.

Results summary

Table 3 below sets out a summary view of long-list MCA for the non-metering measures.

The top 14 bolded non-metering measures in Table 17 had the highest MCA scores and were carried through to the short-list.

Two measures received an MCA score of 2.85 (Smart Schools Water Programme and Mandatory Council Facility Water Audits measures). Smart Schools was excluded from the short-list as it was deemed impractical to roll out for such a small cohort, and there is already a schools water audit measure and an education programme measure within the short-list. Full MCA scoring rationale for all non-metering measures is provided in Appendix 10.

The cost-effectiveness of these short-listed measures is evaluated in section 3.7.

Table 17: Summary of non-metering measures MCA

Measure Name	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank
Council open space irrigation efficiency audit and retrofit	4	4	3	5	3.9	1
Residential outdoor water efficiency education programme	3	4	4	4	3.75	2
Excess water use and enforcement	3	5	3	4	3.7	3
Pipe leak repair remission policy	4	3	3	5	3.65	4
Mandatory open space irrigation efficiency audit and retrofit	4	3	4	3	3.55	5
Customer communication	3	5	2	4	3.4	6
Council open space irrigation optimisation	3	4	2	5	3.35	7
Improve District Metered Area monitoring and proactive leak detection and repair	5	3	1	5	3.3	8
Water efficient landscape design standards (and working with retailers)	2	5	3	3	3.25	9
Non-potable water for construction	3	3	3	4	3.2	10
Mandatory school water audits	3	3	2	5	3.1	11
Voluntary hotel audit	2	3	3	4	2.95	12
Pressure management for the network	3	3	2	4	2.9	13
Mandatory council facility water audits including operational use	2	3	2	5	2.85	14
Smart schools water programme	2	3	2	5	2.85	14
Operational water use	2	4	1	5	2.8	16
Smart networks with IoT connectivity and enabled devices	2	2	3	4	2.7	17
Voluntary open space irrigation efficiency audit and retrofit	2	2	3	4	2.7	17
Outdoor water audits for residential	2	2	3	4	2.7	17
Non-residential water efficiency programme	3	2	2	4	2.65	20
Work with retailers to provide drought tolerant planting and efficient irrigation	*1*	*4*	*2*	*4*	*2.65*	*20*
Efficient showerhead rebate	2	4	1	4	2.6	22
Indoor water audits for targeted high use residential customers with follow-up	2	2	2	4	2.4	23
Rainwater tank incentive programme for residential	2	2	2	3	2.2	24

Measure Name	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank
Dual Flush Toilet Rebate	1	3	1	4	2.1	25
Rebate for the installation of a 4-star rated clothes washing machine	1	3	1	4	2.1	25
Soil moisture sensor rebate	1	2	2	3	1.95	27
Free Waterline service to homes	1	2	1	4	1.85	28
Rainwater Tank Rebate programme for non-residential	1	2	1	3	1.65	29

3.5.2 Metering measures

The three long-list measures for implementation of universal customer metering are:

- **Analogue meters (manual meters)** require manual visual reading by a person physically visiting each customer property. Analogue meter readings are typically read periodically on a quarterly or monthly basis. Analogue meters only measure water consumption since the previous reading and are unable to provide insights on when or how water is used. Analogue meters have the lowest capital costs, but highest operational costs due to the ongoing need for manual meter reading.
- **Automatic Meter Reading (AMR)** automatically collect data from meters with transfer to a central database. Data can be collected via site-visits, drive-by readings, or via a fixed telecommunications network (such as radio frequency, satellite or powerline transmission). AMR provide one-way communication from the meter to the utility. Data is typically collected, stored and reported periodically (for example monthly or daily), rather than in real time.
- **Advanced Metering Infrastructure (AMI)**: is an integrated system of smart meters, telecommunications networks, and data management systems that enables two-way communication between the meter and the utility and (where enabled) customers. AMI transmits data at a high frequency, from hourly to near real-time, which supports improved leak and fault detection, enhanced customer service, and more detailed understanding of water use patterns including time-of-use and rate of use data. AMI can be used to send alarms to the water service provider and to customers to notify of leaks or unusual water use patterns.

Smart metering capability

Smart metering (AMI and to a lesser extent AMR) goes beyond measuring total consumption. It provides insight into customer water-use behaviour, customer private property leakage and network leakage. In addition, AMI can support intelligent network management for example through live, or near real-time, monitoring of pressure.

3.5.2.1 Metering multi criteria analysis

These metering measures were evaluated using three benefit and three effort MCA criteria as defined in Table 18 below. The Investment Objectives were used as benefit criteria for these measures to enable meaningful comparison between meter types (all three would score similarly across the Critical Success Factors, making those criteria unsuitable for this purpose). Implementation considerations were used as effort criteria.

Table 18: Metering MCA Criteria - Definitions

Criteria	Description
Benefit Criteria	
Safe and reliable water supply	To what extent does the meter type improve safety and reliability of the supply of water to customers? Safety is improved by maintaining network pressure for fire-fighting and minimising leak run time. Leaks threaten drinking water safety by compromising infrastructure integrity, allowing contaminants to enter pipes through backflow, especially during low-pressure events. Reliability is improved by earlier awareness of network and private property leaks, enabling the leak to be repaired earlier and the leak run time to be shortened. With shorter leak run time, the volume of water lost is lower and there is less likelihood that the size of the leak will grow.

Criteria	Description
Efficient and sustainable demand	To what extent does the meter type enable reduction in peak summer demand for drinking water, including reductions in network water loss? Peak summer demands are typically experienced over days or weeks. Customers need to be informed of their water consumption while peak summer demands are occurring. This would not be possible with analogue meters. Reductions in peak summer demands will increase with the meter reading frequency and transfer of meter reading data to customers. A reduction in demand (both consumption and loss) reduces pressure on the network, improving environmental and financial sustainability. Sustainable demand contributes to deferring carbon and capital cost of new water infrastructure.
Fair and equitable charging for water supply	To what extent does the meter type enable fair cost distribution for water demand where the beneficiary pays? Fair cost distribution means that users pay for how much water they use, rather than the current charging model, where all users essentially cross-subsidise high users. Meters enable volumetric charging (to different granularity depending on the type) which can lead to a reduction in demand. This in turn reduces financial pressure from water charges on most household ratepayers.[50]
Effort Criteria	
Technical complexity	What level of technical complexity occurs with this meter type? Technical complexity in both the installation, set-up and operation of the meter. Complexity in installation includes tower, software and server (or hosting service) set-up for AMI and the physical installation of meters. Complexity in operations includes data management, managing connectivity, and technology integration and ongoing system updates.
Inflexibility to change	What level of inflexibility is inherent with this meter type? I.e., to what extent does this meter type reduce ability to change water charging model? Frequency of data transmission is a significant factor for enabling flexibility in charging models.
Likely whole-of-life costs	What amount of whole-of-life costs, i.e. upfront capital, ongoing operational and renewals expenditure, is expected with this meter type? This includes resourcing staff, to both install and read meters, as well as renewals and maintenance costs. For smart meters, this includes data management and connectivity costs.

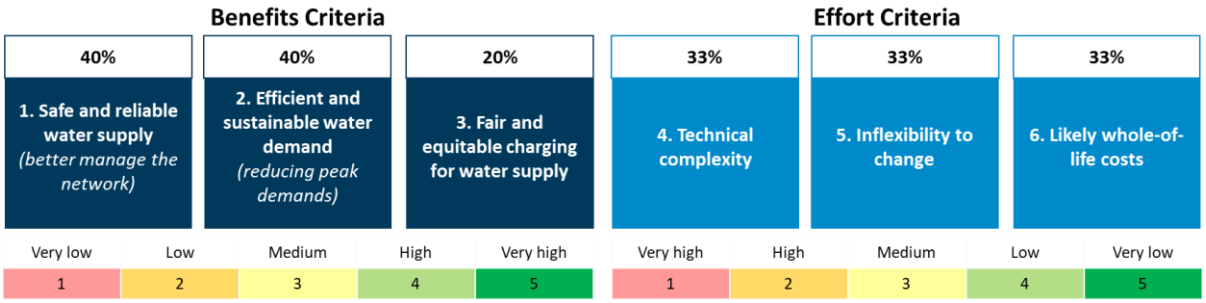
Metering criteria weighting and scoring

The Investment Objective benefit criteria were weighted in line with ILM weightings (section 2.2.1). Effort criteria cover technical complexity and adaptability, are weighted evenly.

- The metering measures were rated against each benefit criterion on a scale of one to five, where one indicates poor alignment, and five indicates strong alignment.
- Effort criteria use the same scale in reverse; one indicates very high effort and five indicates very low effort - reflecting that lower effort is preferrable.

[50] Modelling commissioned by Te Waihanga – New Zealand Infrastructure Commission shows that introducing volumetric charges can reduce costs for many low-income ratepayers

Figure 17: Metering criteria weightings and scoring scale



3.5.2.2 Multi criteria analysis results summary

A summary of the MCA is provided in Table 19 below, followed by a summary of the performance against the benefit and effort criteria. The rationale for the scoring of metering measures is described in further detail in Appendix 11.

Table 19: Summary of metering measures MCA

	Evaluation Criteria - Benefits			Evaluation criteria - effort				
Measure	**1**	**2**	**3**	**4**	**5**	**6**	**MCA Score**	**MCA Rank**
Analogue meters	3	3	3	5	2	3	6	**3**
AMR meters	4	4	4	4	3	3	7	**2**
AMI	5	5	5	3	4	2	8	**1**

Benefit criteria performance

AMI scored highest across all three benefit criteria, followed by AMR then analogue. The primary differentiator was data collection frequency and granularity, with AMI the only measure offering two-way communication and enhanced insight into customer water use patterns, customer private pipe leakage and network leakage. AMI enables intelligent network management through live monitoring of pressure etc. All three meter types support volumetric charging, which central government is flagging as a priority tool for demand management and underpins equitable cost distribution; however higher frequency data collection and transmission provides greater visibility of network performance, supports more accurate leak detection, and enables fairer cost distribution by capturing individual usage patterns, including high users.

Effort criteria performance

Results for effort criteria were more varied. Capital costs and technical complexity increase with technological sophistication – analogue is simplest and lowest cost, AMI highest – while operational costs move in the opposite direction as automation reduces the need for manual or drive-by data collection.

Despite its higher capital cost and complexity, AMI is the most flexible meter type. It can be remotely upgraded, supports multiple water charging models, and transmits data in near real-time - making it better placed to adapt to future charging and network management requirements.

Conclusions

All metering measures scored well and were carried forward to the short-list. It is likely that in practice Council will use a combination of all three metering options, as AMI may not be able to be

implemented on every customer connection in the district due to connectivity, or other technical constraints. There are also a small number of existing manual meters, which could be leveraged until they need to be renewed.

3.5.3 Water charges

Water charges were assessed separately from the metering and non-metering measures. This workstream centred on an Insights Report (Appendix 12), which set out and reviewed potential water charges, benchmarked current New Zealand practice, and considered broader policy implications. The purpose of this assessment is to inform future stages of options analysis and / or public consultation that Council or WSCCO will undertake as part of water supply pricing reform. It is anticipated that a DBC or similar detailed analysis will be undertaken to determine the final approach for metering and water charges.

This Insights Report informed a workshop with the PCG on 4 March, at which this information was shared and tested. Below is a summary of the key takeaways from the Report and workshop.

Water charge analysis – summary

The Report outlined potential water charge options available to Council / the WSCCO. For each option, the benefits and disbenefits, customer and utility perspectives were explored. A summary of this is provided in Table 20 below.

Table 20: Summary of water charge methodology analysis

Category	Water charge methodologies	Key considerations
Fixed charges	• Fixed annual charge	• Fixed-charge-only funding (i.e. Council's status quo) is simple and predictable but provides no incentive for conservation. • Provides stable revenue for the utility and easy-to-understand bills for consumers. However, it means high-use and low-use households pay the same amount, causing cross subsidies and no reward for saving water. • Such models are increasingly seen as incompatible with effective demand management and user-pays principles and are expected to be phased out under upcoming reforms.
Variable charges	• Volumetric charge only • Volumetric charge only with base allowance	• Volumetric charges charge solely by usage, maximising conservation signals. • A variable-only model (like Auckland's Watercare) gives consumers a strong incentive to conserve water, since every cubic meter used is charged, but can lead to revenue volatility.
Mixed charges	• Fixed plus volumetric charge (no base allowance) • Fixed plus volumetric charge with base allowance	• While fixed-only provide stable revenue but no incentive for conservation, and variable-only provides strong incentive for conservation but high revenue volatility, mixed charges combine for balance. • A two-part charge (fixed + uniform volumetric rate) provides a base of stable revenue for the utility while still encouraging efficient use. • Most NZ councils with metering use a mixed approach to balance equity, predictable revenue, and conservation benefits.

Category	Water charge methodologies	Key considerations
Non-uniform volumetric charges	• Increasing Block Tariff (IBT) • Decreasing Block Tariff (DBT) • Seasonable Block Tariff (SBT) • Volumetric charge plus either IBT, DBT or SBT	• These charges can boost conservation signals but are rarely used in practice due to their complexity. • For example, IBTS charge more per unit as usage increases (to discourage high consumption), and SBT raises rates during peak-demand periods. Such models may offer stronger incentives to conserve, but New Zealand councils have found them difficult for customers to understand, politically sensitive, and administratively burdensome. • As a result, these options have seen little adoption and are viewed as potential longer-term tools rather than immediate priorities for Council.

New Zealand benchmarking

Benchmarking across New Zealand's 67 territorial authorities indicates a strong shift toward mixed or volumetric charging models. 87% of authorities (58 of 67) use a mixed model combining fixed and volumetric components, 33 charge volumetrically from the first litre and 25 include a base allowance. Watercare (Auckland) is the only council that operates a fully volumetric residential tariff with no fixed charges.

Council's current approach is increasingly out of step with these sector norms. While there is no single standard model, the dominant direction is toward utility-style pricing that combines volumetric charges with supporting fixed components.

The analysis also highlights the importance of tailoring water charge design to local conditions, such as seasonal demand, the district's significant visitor population, and the current absence of residential metering. Supporting policies, such as exemptions for vulnerable users, leak remissions, and excessive-use clauses in Three Water bylaws, are commonly used to ensure fairness and public acceptance. Transition strategies, including phased implementation and public engagement, are frequently employed by councils undertaking charging model reform.

Water charge option in short-list assessment

The PCG agreed with the above conclusions in the water charging model workshop and confirmed a 50-50 mixed charge as a sensible option for the purposes of the economic analysis for the PBC. This structure has been carried through to shortlist assessment, as explained below.

Given current limitations in consumption data, it is not possible to meaningfully differentiate between charging model options in terms of demand reduction within the economic modelling. As such, one generic water charge is carried forward into the short-list, assuming a mixed charge comprising a 50-50 split between fixed charges and a uniform volumetric charge, with no base allowance.

It is noted that the district's unique position of a high number of holiday homes with low occupancy may necessitate a more nuanced approach, such as the inclusion of a base allowance within a fixed rate. As metering data becomes available, and WSCCO pricing strategy is determined through the establishment process, it will be possible to analyse water charge choices in more detail – including as a part of any eventual water metering project.

Final decisions on charging model will be subject to further analysis, public consultation, WSCCO establishment processes, and statutory consultation requirements. As these decisions are likely to be

defined as 'significant' under Councils' Significance and Engagement Policy 2024, decisions will be subject to the special consultative procedure.[51]

The charging structure may also be refined following metering roll out, when more information is available on patterns of water use. For example, the WSCCO could consider a higher fixed charge proportion and/or including a base allowance to respond to the high proportion of holiday homes with low occupancy in the district. Adjusting the tariff structure in these ways would help address concerns that, under a 50-50 tariff with no base allowance, these users would not pay for water for most of the year (as the household is unoccupied), leaving higher costs for locals. Universal metering will provide better evidence on the extent of very low-occupancy homes and help inform any water charge adjustments.

3.6 Short-list

The short-list includes those measures that passed long-list MCA evaluation. The 15 shortlisted measures were grouped into four broad categories - Council-focused, Educational, Regulatory, and Physical – as illustrated below.

Figure 18: Short-list measure categories

Council-focused	Educational	Regulatory	Physical

The ranked short-list is outlined in the table below, colour-coded to the four categories. The three measures for universal customer metering are combined into one measure in the short-list. The rationale for this approach is outlined in 3.6.1.

Table 21: Short-list measures descriptions by MCA ranking

MCA rank	Group	Measure
1		Universal customer metering and a two-part charge (fixed plus volumetric)
2		Council open space irrigation efficiency audit and retrofit
3		Residential outdoor water efficiency education programme
4		Excess water use and enforcement
5		Pipe leak repair remission policy
6		Mandatory open space irrigation efficiency audit and retrofit
7		Customer communication
8		Council open space irrigation optimisation
9		Improve DMA monitoring and proactive leak detection and repair
10		Water efficient landscape design standards (and working with retailers)
11		Non-potable water for construction
12		Mandatory school water audits
13		Voluntary hotel audit
14		Pressure management for the network

[51] https://www.qldc.govt.nz/media/1vihj1qr/qldc_significance-and-engagement-policy-final5.pdf

MCA rank	Group	Measure
15		Mandatory council facility water audits including operational use

3.6.1 Approach to metering and water charges in the short-list

There is high uncertainty in the split between network leakage and customer consumption due to the widespread lack of customer meters and the limited monitoring of night flows. This lack of data makes it difficult to estimate the potential demand reductions from different metering or charging models. Therefore, in the short-list, there is one measure that covers metering, plus a charge. This is an AMI meter where possible (noting some areas may require other meter types due to geographic constraints and reception) and a 50-50 fixed charge and uniform volumetric charge, with no base allowance.

Significant work is required in terms of Council's organisational readiness and approach to procurement. These factors will have a significant impact on the achievability of different metering or charging models. As this work is unknown, it is unable to be assessed at this stage.

The WSCCO is in the process of being established, and will be responsible for decisions relating to meters and water charges. Therefore, it is practical to leave this level of detail to the WSCCO to determine at a future date.

Further analysis of water charges and meters, along with public consultation on options, will be required prior to implementation.

3.6.2 Short-list category and measure descriptions

A description of each of the categories, including a more detailed explanation of individual measures within that category, is provided in the sections below.

3.6.2.1 Council-focused measures

Council-focused measures, such as Council open-space irrigation efficiency audit and retrofit, are attractive as they drive community acceptance and Council is seen to be leading by example. An explanation of each of these measures is provided in the table below.

Table 22: Council-focused short-list measures

MCA rank	Measure	Explanation
2	**Council open space irrigation efficiency audit and retrofit**	Targeted at Council owned parks and reserves to improve turf management and reduce water use. The actions include adding irrigation controllers, irrigation equipment repair and update, metering of the water supplied for irrigation (most important).
8	**Council open space irrigation optimisation**	Work with Council Parks to develop a consistent and exemplary approach for irrigation optimisation, especially timing of watering, no watering of hard surfaces, no watering of non-essential turf, e.g., medians.
15	**Mandatory council facility water audits including operational use**	All council facilities (public toilets, council offices, community halls, swimming pools, wastewater treatment plant, etc.) to be required to undertake a water audit and to implement measures with an approved pay-back period.

3.6.2.2 Educational measures

Educational measures (Table 23) are those that centre on educating and communicating with the community to increase awareness and understanding of demand management. These measures can help generate buy-in and hence change customer behaviour.

Table 23: Educational short-list measures

MCA rank	Measure	Explanation
3	**Residential outdoor water efficiency education programme**	Free residential outdoor water efficiency education programme for all homes. Communications social media programme plus more traditional efforts including poster contests, speakers to community groups, website, demonstration gardens and printed educational material such as bill inserts.
7	**Customer communication**	Customer communication programme to raise awareness, improve water literacy, change customer water use behaviour and build a water conservation ethic.

3.6.2.3 Regulatory measures

Regulatory measures (Table 24) are regulatory and policy driven measures that mandate or encourage customers to use water more efficiently.

Table 24: Regulatory short-list measures

MCA rank	Measure	Explanation
4	**Excess water use and enforcement**	Address extraordinary water use through updating the existing water restrictions framework and enforcing the bylaw. Could be modelled on Tauranga City Council's Water Watchers Plan introduced in 2021 to encourage wise use of water outdoors all year and effective enforcement.
5	**Pipe leak repair remission policy**	Provide financial assistance for residential customers to repair leaks in private property pipes between the property boundary and the house. These leaks could be visible or hidden and identified through metering. Note: this measure is contingent upon metering and volumetric charging. If the current charging model is retained, this measure will not be applied.
6	**Mandatory open space irrigation efficiency audit and retrofit**	Irrigation water users above a prescribed threshold will be required to undertake a mandatory audit and retrofit of options with an approved pay-back period.
10	**Water efficient landscape design standards (and working with retailers)**	Develop and enforce Water Efficient Landscape Design Standards for new residential. Standards specify that development projects subject to design review be landscaped according to climate appropriate principles, with drought tolerant plant selection, efficient irrigation systems and smart irrigation controllers. In parallel, Council to work with nurseries to ensure that they can promote drought tolerant plants and have sufficient seedlings available.

MCA rank	Measure	Explanation
12	**Mandatory school water audits**	Audit of schools, including outdoors, and recommendation for retrofit. Cost of retrofit would need to be met by Government. Could also include training materials for improving water literacy.
13	**Voluntary hotel audit**	Hotels offered a free water audit with recommendations on options with an approved pay-back period.

3.6.2.4 Physical measures

Physical measures (Table 25) are the capital-intensive short-listed measures, covering metering plus a two-part charge, improving DMA monitoring and pressure management for the network. Given the scale of investment associated with these measures, additional analysis was undertaken on each to ensure they are achievable, and likely to generate the level of water demand savings anticipated by this business case. Key detail is summarised in appendices as follows: water charge analysis (Appendix 12) and pressure management (Appendix 13).

Table 25: Physical short-list measures

MCA rank	Measure	Explanation
1	**Universal customer metering and a two-part charge (fixed plus volumetric)**	Implementation of universal water metering through installation of meters on all unmetered water connections, assuming the Hāwea unit cost for supply and installation of smart meters, i.e. AMI. In reality, a mix of meters will likely be installed across the networks including manual, AMR, and AMI meters. A simple initial approach is assumed of a fixed charge with uniform volumetric charge and no base allowance to ensure this is practical for rating staff to manage.
9	**Improve DMA monitoring and proactive leak detection and repair**	Improve the DMAs, including to renew meters if necessary and install new meters to divide large DMAs into smaller areas. Capture system parameters for each DMA and actively use night flow monitoring to prioritise leak detection surveys to identify, locate, diagnose and repair network and private leaks. DMA improvements are expected to take approximately 2-3 year to implement, with indicative timing for relevant schemes below: • Wānaka, Hāwea and Arrowtown DMAs – due for completion 2027 • Frankton DMAs – 2028 • Queenstown DMAS – 2028-2029 In addition to DMA improvements, improve collection, handling, analysis and presentation of leakage data. Improve leak repair time and processes
11	**Non-potable water for construction**	Install bulk supply points for non-potable water for dust suppression and pre-occupation irrigation. This has been applied in Auckland, where Watercare has bulk water supply points for public health and Tauranga, where the City Council has a year-round ban on using potable water for dust suppression.
14	**Pressure management for the network**	Design and install cost effective pressure management areas to reduce bursts, extend pipe life and reduce leakage volume. Pressure management has been considered at a scheme level based on the areas of high pressure identified in the System Performance Assessments from the hydraulic models. A pressure management assessment was undertaken at

MCA rank	Measure	Explanation
		a pressure zone level for the Wanaka scheme only, to inform the economic case. Key findings are summarised in Appendix 13. A summary of pressure management opportunities by scheme is below. This is indicative-only. Pressure management opportunities by scheme will require further investigation, to understand potential water savings versus the cost of implementation. • **Schemes with some opportunity for pressure management:** Queenstown (particularly the CBD) through re-zoning and reconfiguration of the network utilising Pressure Reducing Valves (PRVs), and Hāwea, where southern areas could be supplied through PRVs on existing watermains. • **Schemes with limited opportunity for pressure management**: Wānaka – some pressure reduction work may be possible in the Beacon Point area, along with optimising existing PRV settings. Arthur's Point – pressure could be reduced to an area on the southern side of highway but constrained by topography and network elsewhere. • **No opportunity for pressure reduction at this stage**: Arrowtown, Cardrona, Luggate, Lake Hayes, and Glenorchy.

3.7 Short-list evaluation

Short-list evaluation used a benefit-cost ratio (BCR) methodology, to evaluate cost-effectiveness. This process identified which measures perform the best, with combinations of the strongest measures then developed into programme scenarios in Section 3.8.

The results of this cost-benefit analysis are provided in Table 26 below, with measures sorted in descending order from highest BCR to lowest BCR. Ten of the fifteen measures have a BCR of more than one, meaning their benefit outweighs the cost, and are therefore carried forward. Educational measures performed strongest, reflecting their low-cost and ease of implementation. Physical measures are more capital intensive but achieve a high volume of water savings so remain strongly positive.

Five measures returned a BCR of less than one. These measures (measures 14, 6, 10, 11 and 15) were eliminated from further consideration.

BCRs may understate the benefit achieved through short-list measures. Capital costs were derived based on the Capital Plan. The capital plan, from Council's Long-Term Plan 2024 – 2034, assumes there is a 30% reduction in water demand in the short-term due to universal water metering and volumetric charges. As such, the cost of supply is currently underrepresented.

Please refer to Appendix 14 for the calculations supporting information in Table 26.

Table 26: Cost-benefit analysis results - short-listed measures

MCA Rank	Measure Description	Total Cost ($m FY26)	Annual water savings (m^3)	Levelised cost ($/m^3$)[52]	BCR*
Measures with BCR more than 1					
3	Residential outdoor education	$1.2	79,347	$0.40	8.6

[52] Levelised cost for a measure is the net present value of costs divided by the net present water savings volume

MCA Rank	Measure Description	Total Cost ($m FY26)	Annual water savings (m^3)	Levelised cost ($/m^3$)[52]	BCR*
7	Customer communication	$1.8	115,205	$0.42	8.0
4	Excess water use and enforcement	$1.5	63,477	$0.59	5.7
2	Council open space irrigation audit and retrofit	$0.1	6,833	$0.62	5.5
9	Improve DMA monitoring and proactive leak detection & repair	$21.6	1,036,562	$0.72	4.7
12	Mandatory school water audits	$0.4	15,204	$1.53	2.2
13	Voluntary hotel audit	$0.9	30,911	$1.75	1.9
1	Universal metering with 50-50 charge	$100.1	2,710,498	$1.76	1.9
5	Pipe leak repair remission policy	$1.0	15,422	$1.83	1.8
8	Council open space irrigation optimisation	$0.40	4,057	$2.68	1.3
Measures with a BCR less than 1					
14	Pressure management for the network	$17.6	165,850	$5.66	0.6
11	Non-potable water for construction	$49.0	115,205	$11.52	0.3
15	Mandatory council facility water audits including operational use	$1.6	3,003	$25.45	0.1
10	Water efficient landscape design standards	$7.2	6,447	$28.98	0.1
6	Mandatory irrigation audit for large users	$4.2	5,088	$29.89	0.1

*Note: Shortlist evaluation used some different assumptions and metrics than the final scenario evaluation, hence measures had different BCRs than in final scenario evaluation. Refer to the end of Appendix 15 for these metrics.

Refer to Appendix 14 for explanation on the estimation of cost inputs for the BCR, both costs and avoided costs (benefits).

3.7.1 Results of short-list evaluation

The short-list evaluation confirmed the following 10 measures to carry forward to programme scenarios (Table 27). The other five measures returned a BCR of less than one and were eliminated from further consideration

Table 27: Short-list measures carried forward to programme scenarios

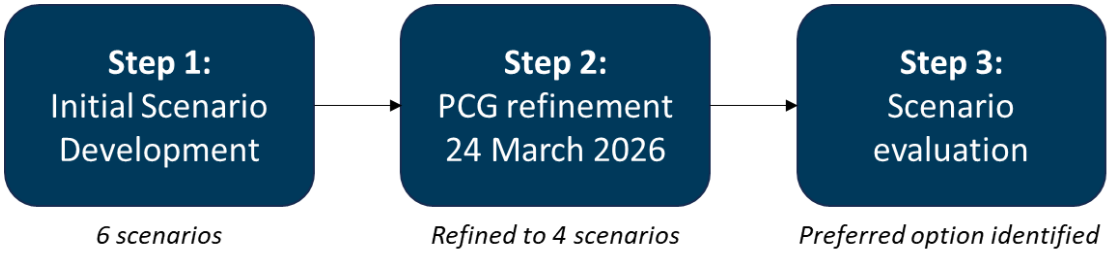
MCA rank	Measure Description	Benefit cost ratio (BCR)
3	Residential Outdoor Education	8.6

MCA rank	Measure Description	Benefit cost ratio (BCR)
7	Customer communication	8.0
4	Excess water use and enforcement	5.7
2	Council Open Space Irrigation Audit and Retrofit	5.5
9	Improve District Metered Area Monitoring and Proactive Leak Detection and Repair	4.7
12	Mandatory school water audits	2.2
13	Voluntary hotel audit	1.9
1	Universal Metering with 50-50 charge	1.9
5	Pipe leak repair remission policy	1.8
8	Council open space irrigation during restrictions	1.3

3.8 Scenarios

This section outlines the process of developing and evaluating programme scenarios to identify the recommended option. The process followed three steps: initial scenario development by the project team, refinement through PCG engagement, and evaluation of finalised scenarios for cost-effectiveness and delivery against programme objectives (Figure 19). The recommended programme scenario is outlined in Section 3.8.2.

Figure 19: Scenario development process



Six draft scenarios were initially developed: a basic, medium and high investment scenario, each with and without metering and volumetric charging. A 'do minimum' scenario, i.e., continuing with the status quo, was ruled out for failing to meet the Council's core legislative requirements as set out in the Strategic Case.

These six scenarios were ordered from 'do least' to 'do most', with the most cost beneficial measures (those with the highest BCRs) in the do least/basic scenario. Higher investment scenarios build on this foundation by adding measures with lower, but still positive, BCR scores. These draft scenarios were tested with the Project Control Group on 24 March 2026, who indicated that priorities beyond cost-effectiveness alone should inform the final scenarios. As such, six additional considerations were incorporated:

- **Leak management**: network leakage is identified as a significant driver of water demand. The water balance (see water balance spreadsheet) identifies schemes with up to 57% leakage as a proportion of total annual demand.[53]
- **Council-focused measures:** Council leading by example is a programme objective and important for community acceptance.
- **Targeting excess use:** peak demands pose a core challenge to safe and reliable water supply, (see 2.2.2.1).
- **Metering:** modelling of draft scenarios indicated scenarios with metering deliver more than double the annual average water savings than non-metering equivalents. This, combined with legislative prohibition on rateable value-based charging under the Local Government (Water Services) Act 2025 meant the Project Control Group agreed to reduce the number of scenarios without metering, from three to one.
- **Pressure Management:** as this is a demand management programme, the BCRs are calculated based on water savings. Pressure Management for the network (Measure 14) has a BCR of less than one, but this does not factor in other positive externalities. Positive impacts of pressure management include reducing the instance of burst pipes (and resulting maintenance) and

[53] Lake Hayes has estimated 57% leakage. Glenorchy has 40% and Arrowtown and Queenstown have 32%. The Lake Hayes figure excludes Lake Hayes Estate and Slope Hill and only considers the properties supplied by the Lake Hayes water take (and not the Shotover County bore, which is part of the Quenstown scheme). This 57% leakage figure could theoretically include high legitimate night use (e.g., irrigation) in addition to network and private property leakage, however as the measurement is from May irrigation use is considered an unlikely contributor to the high leakage measurement.

extending the life of pipes which helping to optimise current water supply assets. Therefore, Pressure Management is included in the scenarios, noting that the benefits and costs of implementing this measure will be assessed on a scheme-by-scheme basis and require more detailed analysis and modelling

- **Timing:** timing of implementation, including speed of roll-out, was included as a consideration.

Detailed information on the scenario development process is in Appendix 15.

3.8.1 Programme scenarios

Based on the above feedback, the scenarios were refined into four programme scenarios for detailed evaluation – basic, basic plus metering, do more, and do more (faster). These scenarios were further refined with consideration of implementation timing, reflecting WSCCO establishment phasing and sequencing dependencies between measures.

Final scenarios are outlined in Table 28 with detailed descriptions below the table.

Figure 20: Key

✓	Measures originally in scenario
✓	Additional measures incorporated into scenarios following short-list evaluation

Table 28: Measures included in final scenarios

#	Scenarios	1	2	3	4
1	Universal metering with 50-50 charge		✓	✓	✓
2	Council open space irrigation audit and retrofit	✓	✓	✓	✓
3	Residential outdoor education	✓	✓	✓	✓
4	Excess water use and enforcement	✓	✓	✓	✓
5	Pipe leak repair remission policy		✓	✓	✓
6	Mandatory open space irrigation efficiency audit and retrofit			✓	✓
7	Customer communication & awareness	✓	✓	✓	✓
8	Council open space irrigation optimisation	✓	✓	✓	✓
9	Improve DMA monitoring and proactive leak detection and repair	✓	✓	✓	✓
12	Mandatory school water audits			✓	✓
13	Voluntary hotel audit			✓	✓
14	Pressure management for the network			✓	✓
15	Mandatory council facility water audits including operational use	✓	✓	✓	✓

Scenario 1: Basic

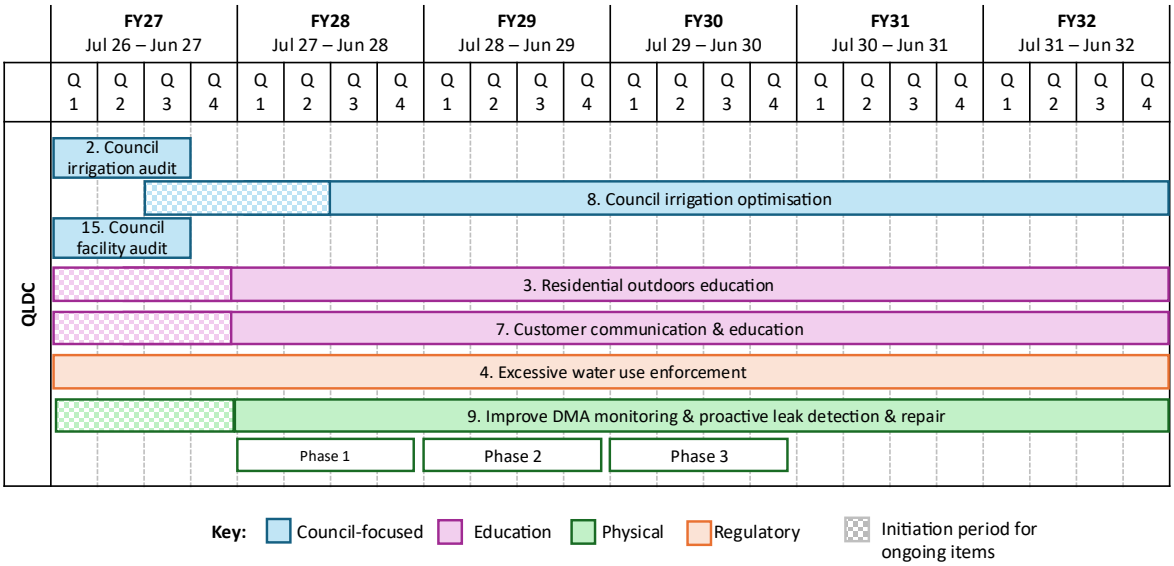
The refined basic scenario prioritises measures that deliver strong cost-effectiveness with immediate impact and low implementation complexity. Improving DMA monitoring and proactive leak management (Measure 9) sits at its core, reflecting the significance of network loss as a demand driver.

The scenario includes foundational demand management measures that can be implemented ahead of WSCCO establishment. Excess water use and enforcement (Measure 4) is added as a priority given

its role in messaging around valuing water, alongside Council-focused measures across all scenarios, reflecting the programme objective of Council leading by example.

Figure 21 below outlines high-level indicative timing of Scenario 1, including initiation periods for ongoing measures. All Scenario 1 measures are assumed to commence from July 2026, aside from Council irrigation optimisation (Measure 8) which would commence in FY 2028 following completion of the Council irrigation audit (Measure 2). All measures extending beyond FY32 are in ongoing operation.

Figure 21: Indicative timing - Scenario 1



Scenario 2: Basic, plus metering

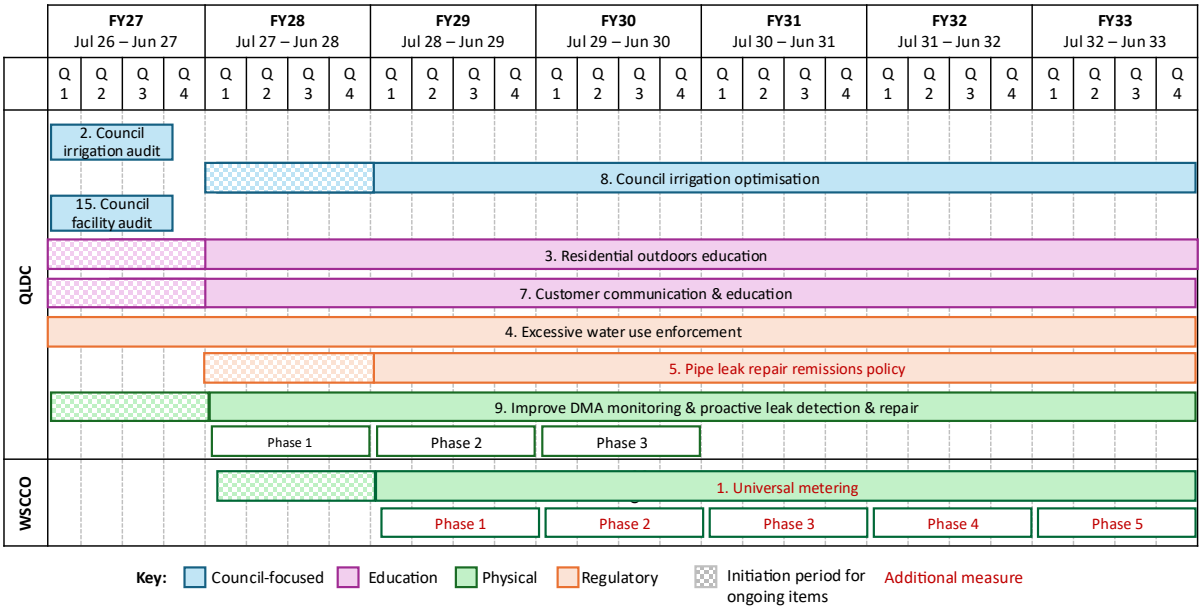
This builds on Scenario 1 with the addition of Universal metering (Measure 1) and the Pipe leak and repair remission policy (Measure 5). Metering installation is staggered across five, one-year phases, from July 2028 (1 year after WSCCO establishment) at an average roll out rate of 3500 meters per phase/annum.[54] Schemes where consented raw water takes are exceeded (or close to being exceeded) and/or where leakage is high will be prioritised in the roll out.

Measure 5 is sequenced with metering due to its dependency on meters for identification of leaks on customer private pipes.

Figure 22 below outlines high-level timing for Scenario 2.

[54] 3502 roll out rate was determined using Hāwea smart meter data.

Figure 22: Indicative timing - Scenario 2



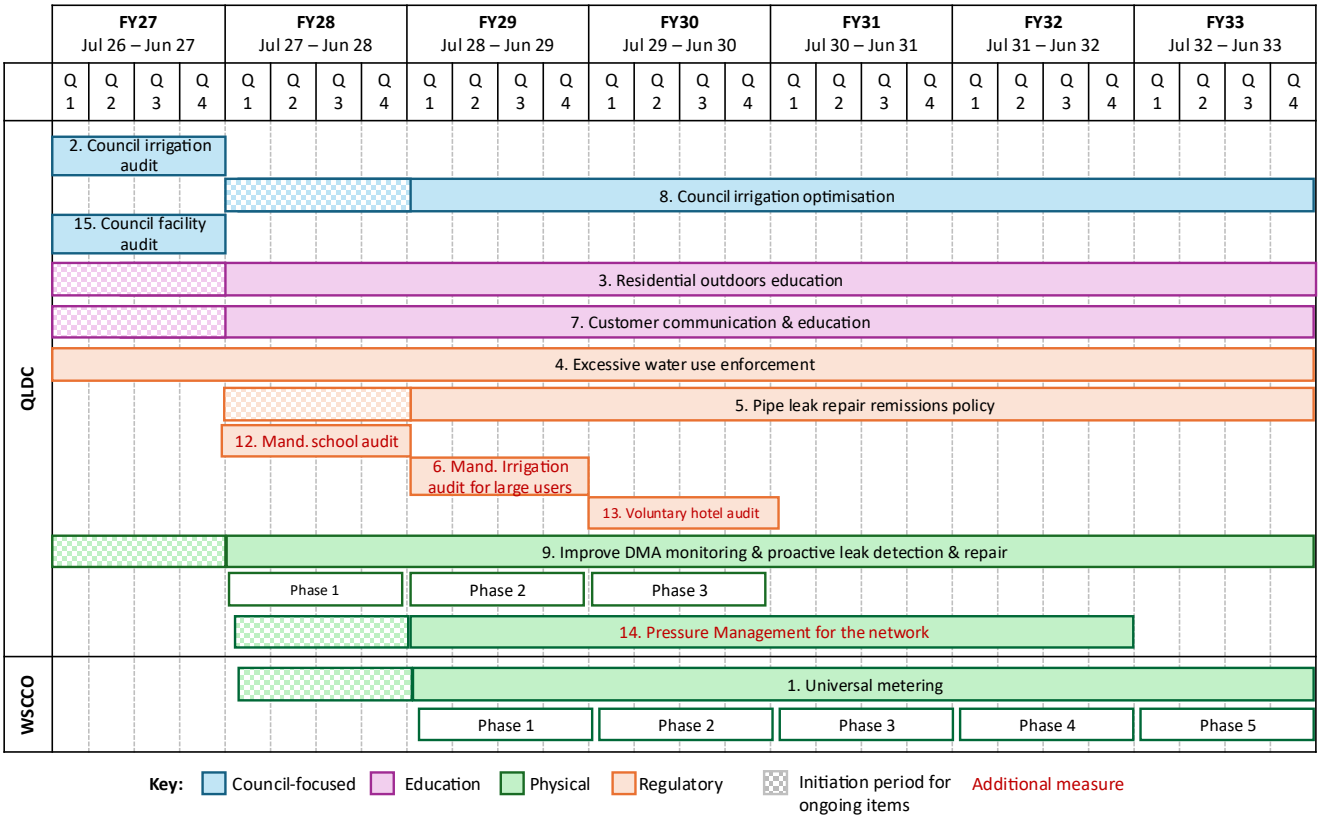
Scenario 3: Do more

Builds on Scenario 2 by extending the programme's reach across a broader range of customer types. Mandatory irrigation audits, school water audits and voluntary hotel audits are added, recognising that non-Council customers represent a significant untapped opportunity for demand reduction. Council-focused measures and leak management remain core to this scenario, consistent with the programme objectives established across all scenarios.

Pressure Management (Measure 14) is also added. Pressure management opportunities by scheme will require further investigation, to understand potential water savings versus the cost of implementation.

Metering follows the same five-phase rollout as Scenario 2, with the additional audit measures sequenced across three years from July 2027 — one measure per year. Pressure management is rolled out in line with metering.

Figure 23: Indicative timing - Scenario 3



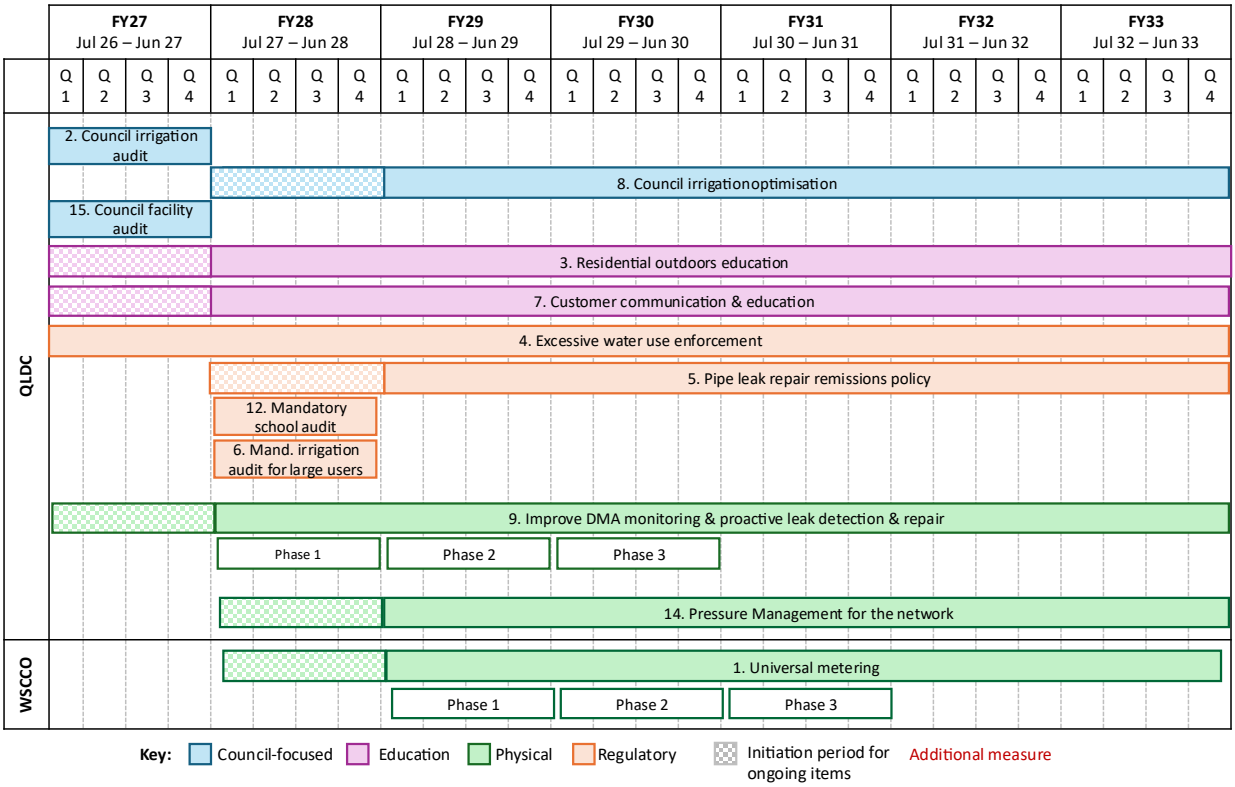
Scenario 4: Do more, faster

This scenario tests the cost and demand implications of compressing the implementation timeline.

It is the same as Scenario 3, with an accelerated implementation pace. Metering is rolled out across three one-year phases from July 2028 at an average rate of 5,000 meters per annum, compared to 3,500 in Scenarios 2 and 3.

The non-Council audit measures – mandatory irrigation audits, school water audits and voluntary hotel audits – are implemented simultaneously from July 2027 rather than sequentially.

Figure 24: Indicative timing - Scenario 4



These four programme scenarios are evaluated below.

3.8.2 Scenario evaluation

The total estimated cost, annual average water savings, levelised cost per cubic metre of water avoided and BCR for each programme scenario was assessed. Results of this evaluation are provided in Table 29, with evaluation metrics and assumptions explained below Figure 25.

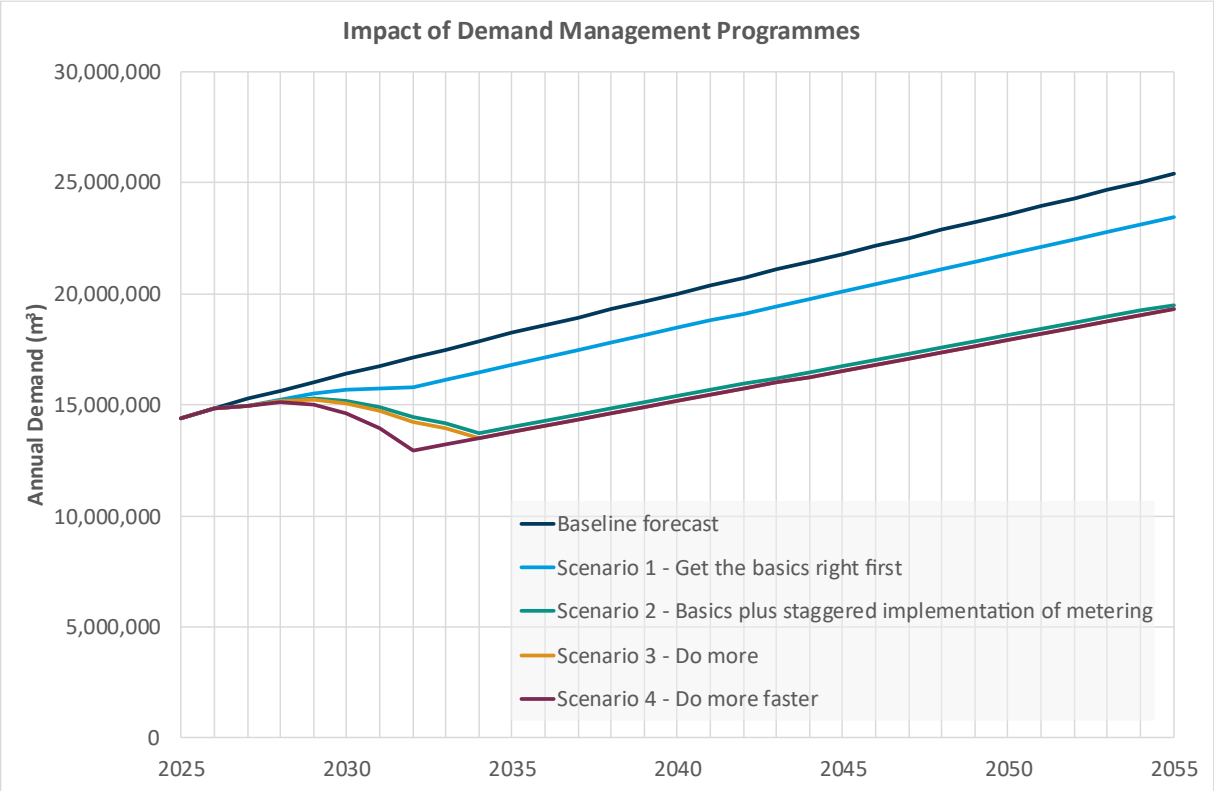
Table 29: Results of scenario evaluation

Scenario	Total costs[55] ($m FY26)	Present value costs ($FY26)	Annual average water savings (m^3)	Est annual water savings post metering (%)	Levelised cost ($ spent per m^3 of water saved	BCR
Scenario 1 - Basic	$28.2	$20,245,307	1,417,000	7.8%	$0.69	8.52
Scenario 2 – Basic plus metering	$129.3	$99,704,096	4,021,000	23.1%	$1.21	4.83
Scenario 3 – Do more	$152.4	$118,608,838	4,210,000	24.2%	$1.38	4.26
Scenario 4 – Do more, faster	$152.1	$119,078,713	4,325,000	24.2%	$1.34	4.39

[55] Total costs exclude capex requirements for additional FTEs, which was only calculated for the preferred option in the Financial Case.

The annual water demand forecast to 2055 (FY56) of each scenario, compared to the baseline, is illustrated in the figure below. Scenarios 2 through 4 have relatively similar impacts on demand as compared to Scenario 1.

Figure 25: Impact of demand management scenarios on annual water demand forecast to 2055



Evaluation metrics / assumptions

Key assumptions for scenario evaluation are outlined below. For more detailed workings, please refer to the accompanying Water Balance spreadsheet.

- **Future baseline demand**: Forecasts of future baseline demand (no demand management measures) have been prepared on the basis that future demand will grow in direct proportion to population growth. See Appendix 16 for details on demand forecast.
- **Discount rate:** applied the New Zealand Treasury's guidance for non-commercial/ social proposals, with a recommended discount rate of 2%.[56]
- **Inflation:** No inflation was applied as all costs in the model are real costs
- **Long-run marginal cost (LRMC):** of water supply is assumed to be $5.60 per m^3 and for wastewater $0.27 per m^3. The summed LRMC ($5.87 per m^3) is used in calculations. Details on determining LRMC estimates are in Appendix 14.
- **Levelised cost:** for a scenario is the net present value of costs divided by the net present water savings volume.
- **Benefit-cost ratio**: finally, to calculate the BCR for a scenario, the LRMC of water and wastewater together ($5.87) is divided by the levelised cost of water for that scenario.

Results summary

All scenarios return a strongly positive BCR, confirming that any scenario would be cost-beneficial.

[56] Treasury Circular 2024/15: Updated Public Sector Discount Rates for Cost Benefit Analysis

Scenarios containing universal customer metering (2, 3, 4) deliver more than double the annual water savings than the non-metering scenario (1), from 1.4 million to over 4 million cubic meters saved annually - reflecting metering's role in enabling consumption-based pricing and improving household-level leak identification, though at significantly higher cost.

Scenario 4 is marginally more cost-effective than Scenario 3 at 4.4 versus 4.3, suggesting faster implementation reduces costs compared to a staggered rollout. However, the potential cost savings are not substantial, and this evaluation does not include capacity and delivery risks of a faster roll out. These would require further evaluation to better understand the value versus risk trade-off of accelerating delivery.

Scenario 1 returns the highest BCR at 8.5, reflecting its lower cost base, but delivers marginal impact on overall water consumption compared to the metering scenarios.

A forecast of water savings, wastewater savings and costs per year (2025 (FY26) to 2055 (FY56)) is in Appendix 16.

3.9 The preferred scenario

This section presents the recommended programme scenario, identified through assessment of the four refined programme scenarios against indicative costs and benefits and delivery against the three Investment Objectives.

The water charging model analysis developed in parallel is set out in section 3.5.3. This analysis provides informed direction to the WSCCO on the pricing framework that the recommended programme could operate within. Water charge analysis is provided as a starting point for further review and implementation by the WSCCO, once established. As such, a recommended future water charge structure is not identified as part of the preferred scenario.

3.9.1 The preferred option

Based on the scenario assessment, the preferred option is Scenario 2 – Basic, plus metering. It was selected for its strong balance between affordability, impact and deliverability. The table below shows the analysis supporting this preference.

Table 30: Scenario 2 - Cost Benefit Analysis

Scenario	Total costs ($m FY26)	Present value costs ($FY26)	Annual average water savings (m^3)	Est annual water savings post metering (%)	Levelised cost ($/m^3$)	BCR
Scenario 2 – Basic plus metering	$129.3	$99,704,096	4,021,000	23.1%	$1.21	4.83

The rationale for this decision is provided below.

3.9.2 Selection rationale

The selection rationale outlines the logic in selecting Scenario 2 as the preferred scenario.

Policy, legal and regulatory framework support metering and volumetric charging

There is a strong case for the preferred scenario to include metering and volumetric charging, with policy, legal, and regulatory frameworks all signalling the effectiveness and importance of these measures. Under the Local Government (Water Services) Act 2025, Council is legally obligated to transition away from rateable-value based charging for water supply (see 2.1.4.1). The Commerce Commission's Information Disclosure for Water Services requires Council to actively work to improve monitoring and management of water demand and water loss (see 2.1.4.1). Metering and volumetric charging directly support compliance with these requirements.

At a local level, Council has signalled a clear commitment to volumetric charging in the 2025 Water Services Delivery Plan (see 2.1.4.3). This is supported by benchmarking analysis (see 3.5.3) which shows that the dominant direction for water charge models in New Zealand is toward utility-style pricing that combines volumetric charges with supporting fixed components.

Metering with volumetric charging supports programme Investment Objectives

Metering and volumetric charging contribute to addressing the Problem Statements (2.2.2) and directly supports the Investment Objectives (2.2.3) (which are the inverse of the problem statements). For example:

- Metering and volumetric charging will enable Council/WSCCO to manage peak demand, as most customers will be price sensitive and use less water when their water bills are connected to their

actual consumption, addressing Problem Statement 1 – peak demand exceeds infrastructure capacity.

- Together, metering and volumetric charging enable a user-pays model, addressing Problem Statement 2 – no incentives for efficient water use and inequitable cost distribution (see 2.2.2.2)
- Council/WSCCO will develop a more informed understanding of water loss and consumption in the district through the data provided from meters. This will enable provision of more efficient water services, addressing Problem Statement 3 - Limited ability to understand & manage water loss & consumption.

Metering and volumetric charging drives programme water savings and programme efficacy

In shortlist evaluation (Table 26), universal customer metering with volumetric charging delivers the largest absolute water savings of any shortlisted measure by a significant margin. Metering delivers approx. 2.7 million m^3 annual water savings, which is approx. 2.7 times more water savings than the next closest measure, DMA monitoring and proactive leak management with 1 million m^3 annually.

In addition to providing the bulk of programme water savings, metering enhances the efficacy of other measures such as leak detection, excessive use and enforcement, and the water audits. Metering provides the information to support these measures, improving network insight.

Given the above three points, metering with a volumetric charge must be in the preferred scenario

Universal metering is essential for equitable pricing, improved network insight and sustained demand reduction. As such, the PCG agreed the preferred scenario must include metering. Therefore, Scenario 1 – Basic, is excluded from consideration.

Scenario 2 best balances affordability, impact and deliverability of the metered scenarios

Once Scenario 1 is ruled out, there are three remaining scenarios, Scenarios 2, 3, and 4. Scenario 2 has the highest benefit-cost ratio, delivering high water savings for the lowest cost. Scenarios 3 and 4 deliver marginally higher annual average water savings (4 million m^3 for Scenario 2, 4.2 and 4.3 million m^3 for Scenarios 3 and 4) but at significantly higher costs. For example, Scenario 4 delivers approximately 8% more water savings than Scenario 2 but costs approximately 19% more.

Scenario 2 is also less complex than Scenarios 3 and 4, as there are less projects implemented and implementation is more phased. Given Council operational capacity and capability is a key implementation risk (6.6.1), lower complexity is preferred to reduce programme risk profile.

Note: The choice of metering measure(s) to apply in schemes will be determined through more detailed analysis as the WSCCO is established.

3.9.3 The mix of projects

The projects in Scenario 2 are:

- **Council measures (Project 1):** Council open space irrigation audit and retrofit, Council open space irrigation optimisation, and Mandatory council facility water audits including operational use.
- **Education (Project 2):** Residential outdoor water efficiency education programme, and Customer communication programme.
- **Regulatory (Project 3)**: Excess water use and enforcement, and Pipe leak repair and remission policy.
- **Active leak management (Project 4)**: DMA monitoring and proactive leak detection and repair.

- **Universal metering (Project 5)**: Universal customer metering and volumetric charging.[57]

See section 3.6.2 for more information on individuals measures and section 6.2 for timing of projects.

3.9.4 Indicative costs and benefits

The total capital and operating costs (undiscounted) of the programme is $131,63,325 (real cost) over the 30 years of the expected lifetime of the programme (see Financial Case).

The Senior Responsible Owner has signified his agreement to the indicative cost and benefit estimates of the proposal.

[57] Specific water charge to be applied will be determined through more detailed analysis as the WSCCO is established / DBC is developed.

4 Commercial Case

The Commercial Case describes the proposed procurement arrangements for delivering the preferred scenario, as described in the Economic Case.

4.1 Packaging

There are five projects in the Water Demand Management Programme (Programme), as set out in Table 31.

Table 31: Projects in the Programme

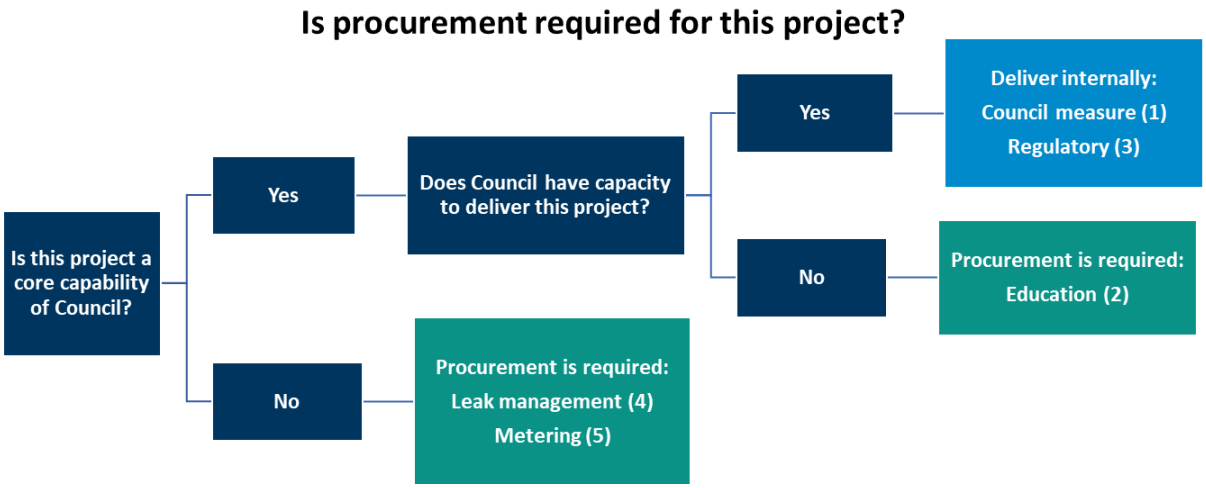
No.	Project	Measures in project
1	**Council measures**	• Council open space irrigation efficiency audit and retrofit • Council open space irrigation optimisation • Mandatory council facility water audits including operational use
2	**Education**	• Residential outdoor water efficiency education programme • Customer communication programme
3	**Regulatory updates**	• Excess water use and enforcement • Pipe leak repair and remission policy
4	**Active leak management**	• DMA monitoring and proactive leak detection and repair
5	**Universal metering**	• Universal customer metering and volumetric charging

The Programme will be delivered by the Council and WSCCO (see 6.1 for explanation). Some projects (or parts of projects) will be delivered by external suppliers, where their capability and capacity is required.

4.2 What needs to be procured?

The Council measures and Regulatory updates (Projects 1 and 3) will be resourced and managed in-house, requiring no procurement of goods, works, or services. Elements of Education, Active leak management and Metering (Projects 2, 4 and 5) will be procured. Decisions on if procurement is required are based on scope, and where that scope is a core competency of council (e.g., policy, managing its own facilities) then it is not needed. Figure 26 illustrates the decision process.

Figure 26: Procurement decision tree



The remainder of this Commercial Case covers the procurement strategy (4.3) and other commercial considerations (4.4 onwards) for the Education, Active leak management and Universal metering projects (2, 4, and 5). Projects 1 and 3 are not discussed further as they do not require procurement.

4.3 Procurement strategy

A Procurement Strategy provides a high-level view of procurement activities. More detailed Procurement Plans will be developed for Projects 2, 4 and 5 in the next stage of planning, post approval of this Business Case. For metering (Project 5), the procurement approach will be informed by early market engagement and captured in the Detailed Business Case (DBC), which the WSCCO will endorse.

4.3.1 Procurement objectives

Objectives from Procurement, in line with Council's Procurement Policy, are to:

- Optimise public value,
- Support the delivery of Council objectives through efficient and effective procurement, and
- Build Council's procurement capability and capacity.[58]

The Investment objectives are also a key consideration. Together, these objectives are core factors in determining the procurement method.

4.3.2 Required goods, works and services

Specific procurements for each project will be determined through detailed planning. Anticipated goods, works and services by project are provided below. These are indicative only.

Project 2: Education

Whilst external communication is a Council capability, procurement is required both for capacity and to access expertise in public water savings education campaigns.

This provider will support the implementation of the outdoor water efficiency education and customer communication programmes. The selected communications partner will be responsible for developing a comprehensive Communications Strategy and will support stakeholder engagement in line with the Significance and Engagements Policy. The internal team will work with the partner to provide oversight and for stakeholder engagement (per the Significance and Engagements Policy.

Table 32: Project 2 - procurements

Item	Description
Communications services	A communications partner to develop the communication strategy and materials, in collaboration with Council, and to support implementation of the communications campaigns as agreed with Council.

Project 4: Active leak management

Council will procure a DMA meter provider and a field operator, responsible for installing new meters to divide large DMAs into smaller areas and renewing meters (if necessary). These will not be separate procurements, rather both elements provided by one supplier. For the first phase(s)

[58] Queenstown Lakes District Council Procurement Policy, page 2.

installation and supply of flow meters will be delivered by Veolia, who currently have a contract with Council. Installation for the first phase is 2026 to 2027. [59]

Once DMAs are renewed, leak detection activities can commence to identify, locate, diagnose and repair network and private leaks. Council / WSCCO operations team will identify these leaks, but there is potential to procure a provider to undertake the leak repair works. This includes the possibility of awarding this work to an existing supplier. This will be confirmed through more detailed planning.

Table 33: Project 4 - procurements

Item	Description
DMA meter provider	• Supplies the physical meters • Typically integrates meters with the telecommunications solution (if smart meters)
Field operator	• Installs commissions and tests meters • May provide ongoing maintenance or leak detection
Leak repair	• Repairs network and private leaks, responding to leaks identified by Council / WSCCO • Note: to streamline processes, it is likely Council/WSCCO would award this work via an existing contract or other mechanism (i.e., this would be new scope for an existing supplier, rather than a new procurement)

Project 5: Universal metering

The WSCCO will procure a smart meter vendor(s) to provide and install smart meters across the district, with potential for management services too. In the interim, Council will continue to require meter installation in all new connections, as per the code of practice. This means that in reality, the smart meter vendor(s) will not have sole responsibility for meter installation. Meters that are functioning and do not require replacement will not be replaced through the Programme.

Across the smart meter market, vendors vary in their service offerings and levels of integration. The main vendor types are:

- **Hardware vendor only**: provides the physical metering devices only.
- **Software vendor only**: provides smart metering software solutions only.
- **Hardware and software vendor:** provides both physical metering devices and the associated software solution.
- **Data as a Service vendor**: provides data management and analysis services, integrating with existing hardware and software systems.
- **Metering and Maintenance**: suppliers that provide hardware, software, maintenance and support services.
- **Metering as a Service vendor**: provides an end-to-end fully managed solution typically combining hardware, software and management services. This is a fully outsourced model or a 'turnkey' solution, where the WSCCO pays a monthly, per-meter fee for fully managed smart metering.

[59] Council is currently investigating the Wānaka, Hāwea and Arrowtown schemes to ensure appropriate DMA configuration and location of flow meters.

Whether one vendor or multiple vendors is selected is dependent upon both the market's response and the WSCCO's preferred level of integration. It is likely that WSCCO will seek more integrated service solutions due to current in-house capability, to reduce the risk profile of delivering this project.

Table 34 outlines the procurements required to enable universal customer metering and volumetric charging. A single vendor may deliver multiple services (or the full suite) so each row may not be a separate procurement.

Table 34: Project 5 - procurements

Item	Description
Telecommunications provider	• Provides the communication solution for the smart meters, e.g., SIM/network modules or Narrow-band IoT • May include network planning, (e.g., GIS mapping and signal testing) • May provide ongoing connectivity services
Smart meter provider	• Supplies the physical meters. Likely AMI with AMR in areas with connectivity issues (noting this decision sits with the WSCCO). Includes meter housings (underground and/or above ground) • Typically integrates meters with the telecommunications solution (often working with the telecommunications provider)
Head End System or Device Management provider	• Provides a Head End System or Master Data Management solution, which collects detailed usage data and supports advanced analytics (e.g., leak detection and consumption monitoring)
Field operators	• Installs, commissions and tests meters • May provide ongoing maintenance and repairs
System integrator	• Integrates the smart metering system (software/platform) with Council/WSCCO's systems • Links meters to e.g., billing, apps, and data warehouses.
Business integrator	• Provides project delivery and integrating smart metering into WSCCO operations (this may be delivered in-house, the DBC will confirm)
Smart Meter Operations Centre provider	• The operations centre is a centralised, digital control hub managing data, network health and field operations in real time
Other services or systems	• Ongoing maintenance and repairs, ongoing connectivity services • Customer support and billing services

The procurement method for these procurements is set out in 4.3.3 below.

4.3.3 Procurement method

The indicative preferred approach to the supplier market for the Education, Active leak management, and Universal metering projects are:

- **Project 2 | Education:** single stage approach for Communications Partner. May procure through panel or existing relationship, depending on the value of the contract.
- **Project 4 | Active leak management:** single-stage, open market approach for DMA improvements. Potential to procure leak repair service to be considered in next planning phase.

- **Project 5 | Universal metering:** two-stage, open market approach. Request for Information (RFI) to inform final procurement approach, followed by Request for Proposal (RFP). RFP structured to enable market innovation.

All procurements will be confirmed through detailed planning and will align with Council's Procurement Policy and Guidelines.

Project 2: Education

The initial implementation cost for the project is estimated to be approximately $165,000. The split of this cost between Council/WSCCO and the Communications Partner is currently undecided.

Per the Procurement Policy, if the estimated whole of life spend for procurement of the Communications Partner is less than $100,000, all sourcing methods are available. If the procurement exceeds this $100,000 threshold, Council is obligated to take an open market approach.[60]

If the procurement is under the $100,00 threshold, Council has flexibility to source Communications Partner via an existing relationship, panel or direct appoint. If an open market approach is taken, the proposed procurement method is to release an RFP to the market in August 2026, evaluate supplier responses and select a partner in September – October 2026.

The Communications Partner will be engaged for a 6-month period until the end of March 2027, at which point the Communications Strategy will be complete. From April 2027 onwards, Council may choose to out-source part of the ongoing education campaign. Refer to Figure 32 for a visual of the timeline.

Project 4: Active leak management

The initial implementation costs of this project are anticipated to total near $2 million across 5 years. The contract size will therefore necessitate an open market approach. A Procurement Plan will be developed for this project, therefore the approach below is indicative.

This Commercial Case assumes a single-stage, open market approach. Council will procure supplier(s) through releasing an RFP to the market in September 2026, with responses evaluated in October and November. Contract award will occur by the end of 2026. The supplier(s) will be engaged for approximately 5 years of phased implementation, starting in 2027. Refer to Figure 34 for a visual of the timeline.

The procurement plan will determine whether leak repair works are in the scope of this procurement or under an existing contract. However, it is expected that following completion of the DMA aspect of the project, future leak repair will be procured separately.

Project 5: Universal metering

This is the most significant procurement, with initial implementation costs forecast at approximately $55 million and high complexity (and therefore risk) in delivery. As such, a two-stage procurement approach is recommended to de-risk the project, and maximise opportunity to market participants to demonstrate how they can best meet Council's requirements.

The procurement approach outlined below is indicative. Ultimately, the RFI will inform the DBC's recommended commercial approach to market. Council, while responsible for the Programme (too 30 June 2026), will help to expedite the process through early planning in consultation with the WSCCO board.

[60] Procurement Policy, page 7.

Stage 1: Request for Information

First, an RFI in late 2026 to gather information from suppliers on market capabilities, available technologies and potential solutions. There are a range of different providers and ways services can be packaged. Given this plurality, the RFI will state programme requirements and the outcomes the programme is seeking to achieve, leaving it to the market to show how they would address the requirements.

This approach will allow for a well-informed view of how Council/WSCCO could procure metering. Information gathered through the RFI process will inform the DBC commercial approach and RFP development (early 2027), shaping what is requested from the market. RFI information will also help shape the final preferred solution in the metering DBC, as these workstreams run in parallel.

Stage 2: Request for Proposal

The RFP will be released to the market for August - September 2027, following WSCCO endorsement of the DBC and preferred solution in July. The RFP will specify the WSCCO's preferred approach, detailing what services are insourced and which are outsourced, based on RFI feedback. The RFP will be structured to enable market innovation, such as alternative phasing or new technologies, which can improve value for money and/or reduce implementation costs or risks.

At this stage, it is anticipated that the WSCCO will be seeking one respondent (who could represent multiple suppliers or an integrated solution) to deliver all phases. Separate procurement of goods, works and services is unattractive as it would increase management costs and require a high level of coordination by Council/WSCCO, in an area where the team has limited capability. Different suppliers delivering different phases is also not attractive as this increases interoperability and integration risks. This proposition is eliminated from further consideration given the relatively small district population.

Contract award

RFP responses will be evaluated over the final quarter of 2027 with the preferred supplier awarded the contract in early 2028. This leaves approximately 5 months of planning before Phase 1 metering is rolled out, starting July 2028. The supplier will be contracted to deliver all 5 phases of work, across 2028 to 2033. Refer to Figure 35Figure 32 for a visual of this timeline.

4.3.4 Initial market assessment

An initial desktop assessment of attractiveness of the proposed procurements to the supplier market is:

- **Project 2 | Education:** relatively attractive to the supplier, offering 6 months to develop a Communications Strategy. There are multiple Communications and Public Relations firms operating in Queenstown, as well as optionality to source a contractor from elsewhere in New Zealand. Various suppliers will be able to deliver this, given the medium size of the contract (TBC up to c. $165,000) and scope of work.
- **Project 4 | Active leak management:** Council has existing relationships with suppliers who could deliver elements of this project. For example, Aqua Analytics for leak detection and some repairs, and Veolia for other repairs of visible leaks. There are multiple additional suppliers active in the market who could tender for this project too.
- **Project 5 | Universal metering:** there is anticipated to be significant interest in Metering (Project 5). This is a high-value contract (c. $55 million) and benchmarking (3.5.3) shows that current New Zealand practice is moving towards volumetric charging, and hence metering. This means the market is likely prepared for these programmes of work. This will be tested further through the RFI phase.

4.4 Contract provisions

A standard approach, consistent with other Council capital works projects, will be adopted for contract provisions. The best form of contract for each project will be confirmed through detailed planning (Projects 2 and 4) or the DBC (Project 5).

Contract terms will be consistent with the project timelines (see 6.2.1).

4.5 Potential for risk sharing

The Council Procurement Policy states that responsibility for managing risks should be with the party – either Council/WSCCO or the supplier – that is best placed to manage the risk, and parties should work together on risk mitigation strategies.

This Programme, particularly metering (Project 5) contains a high level of well-defined risk. There are risks related to physical installation and planning such as approach to Multi-Unit Developments, accessing properties, and complexity of works in live environments, such as on roads. There are also service risks such as relating to new and complex information systems, telecoms, billing and customer service. These risks are relatively predictable and quantifiable. As such, risks will be understood by respondents and appropriately priced.

Risk sharing will be determined in collaboration with suppliers, based on their understanding of the specific risks and risk profiles of each project. Risk sharing mechanisms will be applied where appropriate.

5 Financial Case

The Financial Case outlines the programme financial implications of the preferred Scenario (3.9) and demonstrates that the overall programme is affordable. It also outlines the funding requirements for the individual projects, as identified in the Management Case (6).

5.1 Programme costs

Total programme costs

The total cost to deliver the Programme is estimated to be **$131.7 million** in real terms. This is $101.9 million Present Value (PV) using a 2% discount rate. No escalation has been applied. The base year for costs is FY26. The cost estimates in this Financial Case are real costs, unless specified otherwise.

The total cost includes capital expenditure (capex) over the next 10 years (FY26 - FY35) and operating and maintenance expenditure (opex) over a 30-year window (FY26 - FY56). This is explained in Appendix 14. Table 35 shows a breakdown of these costs by project.

Table 35: Total Costs ($ 2025) by Project / measure

Project	Measure	Capex ($ FY26)	Opex - FY56[61] ($ FY26)	Total cost ($ FY26)	Total PV costs ($ FY26)
Project 1: Council focus	Council facility irrigation audit	$14,400	$100,800	$115,200	$85,763
	Council open space irrigation optimisation	$14,400	$388,800	$403,200	$288,775
	Mandatory council facility water audits including operational use	$12,600	$1,589,521	$1,602,121	$1,383,979
	Total	$41,400	$2,079,121	$2,120,521	$1,758,517
Project 2: Education	Residential outdoor education	$41,600	$1,202,262	$1,243,862	$894,911
	Customer communication	$123,200	$1,654,665	$1,777,865	$1,299,034
	Total	$164,800	$2,856,927	$3,021,727	$2,193,945
Project 3: Regulatory	Excess water use and enforcement	$61,600	$1,400,386	$1,461,986	$1,060,479
	Pipe leak repair remission policy	$28,800	$972,000	$1,000,800	$715,286
	Total	$90,400	$2,372,386	$2,462,786	$1,775,765
Project 4: Leak Mgmt	Improve DMA monitoring and proactive leak detection & repair	$1,968,900	$19,597,626	$21,566,526	$15,232,367
Project 5: Metering	Universal customer metering w 50-50 tariff	$55,348,902	$44,790,364	$100,139,266	$78,743,503
Council project overheads (additional FTE)		$2,372,500	$ -	$2,372,500	$2,190,586
Programme total		**$59,986,902**	**$71,696,423**	**$131,683,325**	**$101,894,682**

[61] Total impact over 30 years (FY26 – FY56), not annualised.

Capex and opex cashflow by year, as well as available funding sources, are discussed below

5.1.1 Capital expense requirements

The total forecast Programme capex is $60 million. The majority of this is from Metering (Project 5) at $55.3 million. Active leak management (Project 4) is second with approx. $2 million in capex. Table 35 sets out total capex by measure and project. Table 37 and Table 38 set out the capex cashflows per annum, per project.

It is assumed that internal additional salary costs are included in the Programme as capital expenses. These costs are estimated to total approximately $2.4 million. Table 36 provides a breakdown of this figure.

Table 36: Additional salary costs (capex)

Role	FTE	Cost per FTE pa	Number of years	Total cost
Programme Manager	1	$185,000	6	$ 1,110,000
Project Manager (Metering)	1	$140,000	6	$ 840,000
Business lead (project 1)	0.3	$130,000	1	$ 39,000
Business lead (project 2)	0.5	$130,000	1.5	$ 97,500
Business lead (project 3)	0.3	$130,000	1.5	$ 58,500
Business lead (project 4)	0.5	$130,000	6.5	$ 227,500
Total	**3.6**	**$533,000**	-	**$ 2,372,500**

Funding for capex is discussed in 5.3 below.

5.1.2 Operating expenditure requirements

The total forecast Programme opex is $71.7 million. Opex requirements include ongoing operational and maintenance costs once the projects are delivered. For example, Education (Project 2) has ongoing opex totalling approx $2.9 million ($ FY26) to FY56. This will be absorbed and addressed through prioritisation of internal communications resource. This is also applicable to Pipe leak repair and remissions (part of Project 3).

Initial forecasts of Metering (Project 5) opex is approx. $44.8 million ($ FY26) to FY56

5.1.3 Capex and opex cashflows by year

Table 37 (FY27 – FY40) and Table 38 (FY41 – FY55) outline the capex and opex cashflow requirements by project and year across the 30-year span of the programme.

Table 39 shows LTP water demand management funding allocations to FY32. In every year with LTP funding (FY26 – FY32) there is more LTP funding than forecasted capex for the Programme.

Table 37: Programme cashflow summary (FY27 - FY40)

			$295,327	$2,209,664	$9,678,038	$9,688,979	$9,627,721	$9,631,463	$9,635,205	$9,621,797	$9,625,538	$2,699,798	$2,722,404	$2,726,070	$2,729,736	$2,733,401
Project	**Exp**	**Total** FY27-FY56	**FY27**	**FY28**	**FY29**	**FY30**	**FY31**	**FY32**	**FY33**	**FY34**	**FY35**	**FY36**	**FY37**	**FY38**	**FY39**	**FY40**
Project 1	Cap	$41,400	$-	$27,000	$14,400	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$2,079,121	$-	$1,033,454	$23,460	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860
Project 2	Cap	$164,800	$-	$164,800	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$2,856,927	$-	$27,190	$93,757	$94,323	$94,890	$95,456	$96,022	$96,589	$97,155	$97,722	$98,242	$98,763	$99,284	$99,804
Project 3	Cap	$90,400	$-	$61,600	$28,800	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$2,372,386	$-	$1,942	$49,423	$85,463	$85,504	$85,544	$85,584	$85,625	$85,665	$85,706	$85,743	$85,780	$85,817	$85,855
Project 4	Cap	$1,968,900	$-	$328,150	$328,150	$328,150	$328,150	$328,150	$328,150	$-	$-	$-	$-	$-	$-	$-
	Op	$19,597,626	$119,827	$123,528	$126,663	$129,798	$132,933	$136,067	$139,202	$778,337	$781,472	$784,607	$787,715	$790,823	$793,930	$797,038
Project 5	Cap	$55,348,902	$-	$-	$7,906,986	$7,906,986	$7,906,986	$7,906,986	$7,906,986	$7,906,986	$7,906,986	$-	$-	$-	$-	$-
	Op	$44,790,364	$-	$-	$716,400	$716,400	$716,400	$716,400	$716,400	$716,400	$716,400	$1,693,904	$1,712,845	$1,712,845	$1,712,845	$1,712,845
Over heads	Cap	$2,372,500	$175,500	$442,000	$390,000	$390,000	$325,000	$325,000	$325,000	$-	$-	$-	$-	$-	$-	$-
Prog. total	Cap	$59,986,902	$175,500	$1,023,550	$8,668,336	$8,625,136	$8,560,136	$8,560,136	$8,560,136	$7,906,986	$7,906,986	$-	$-	$-	$-	$-
	Op	$71,696,423	$119,827	$1,186,114	$1,009,702	$1,063,843	$1,067,585	$1,071,327	$1,075,069	$1,714,810	$1,718,552	$2,699,798	$2,722,404	$2,726,070	$2,729,736	$2,733,401

Table 38: Programme cashflow summary (FY41 - FY55)

		$2,737,067	$2,740,733	$2,744,398	$2,775,297	$2,836,528	$2,897,760	$2,961,189	$3,022,429	$3,083,669	$3,144,909	$3,156,613	$3,168,248	$3,179,883	$3,191,518	$3,203,153	$3,214,788
Project	**Exp**	**FY41**	**FY42**	**FY43**	**FY44**	**FY45**	**FY46**	**FY47**	**FY48**	**FY49**	**FY50**	**FY51**	**FY52**	**FY53**	**FY54**	**FY55**	**FY56**
Project 1	Cap	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860	$37,860
Project 2	Cap	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$100,325	$100,845	$101,366	$101,886	$102,407	$102,927	$103,449	$103,971	$104,493	$105,015	$105,536	$106,058	$106,580	$107,102	$107,624	$108,145
Project 3	Cap	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$85,892	$85,929	$85,966	$86,003	$86,040	$86,078	$86,115	$86,152	$86,189	$86,227	$86,264	$86,301	$86,339	$86,376	$86,413	$86,450
Project 4	Cap	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$800,146	$803,254	$806,362	$809,470	$812,578	$815,686	$818,801	$821,916	$825,031	$828,146	$831,261	$834,377	$837,492	$840,607	$843,722	$846,837
Project 5	Cap	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$1,712,845	$1,712,845	$1,712,845	$1,740,078	$1,797,644	$1,855,210	$1,914,964	$1,972,530	$2,030,096	$2,087,662	$2,095,692	$2,103,653	$2,111,614	$2,119,574	$2,127,535	$2,135,496
Overhead	Cap	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
Program total	Cap	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-	$-
	Op	$2,737,067	$2,740,733	$2,744,398	$2,775,297	$2,836,528	$2,897,760	$2,961,189	$3,022,429	$3,083,669	$3,144,909	$3,156,613	$3,168,248	$3,179,883	$3,191,518	$3,203,153	$3,214,788

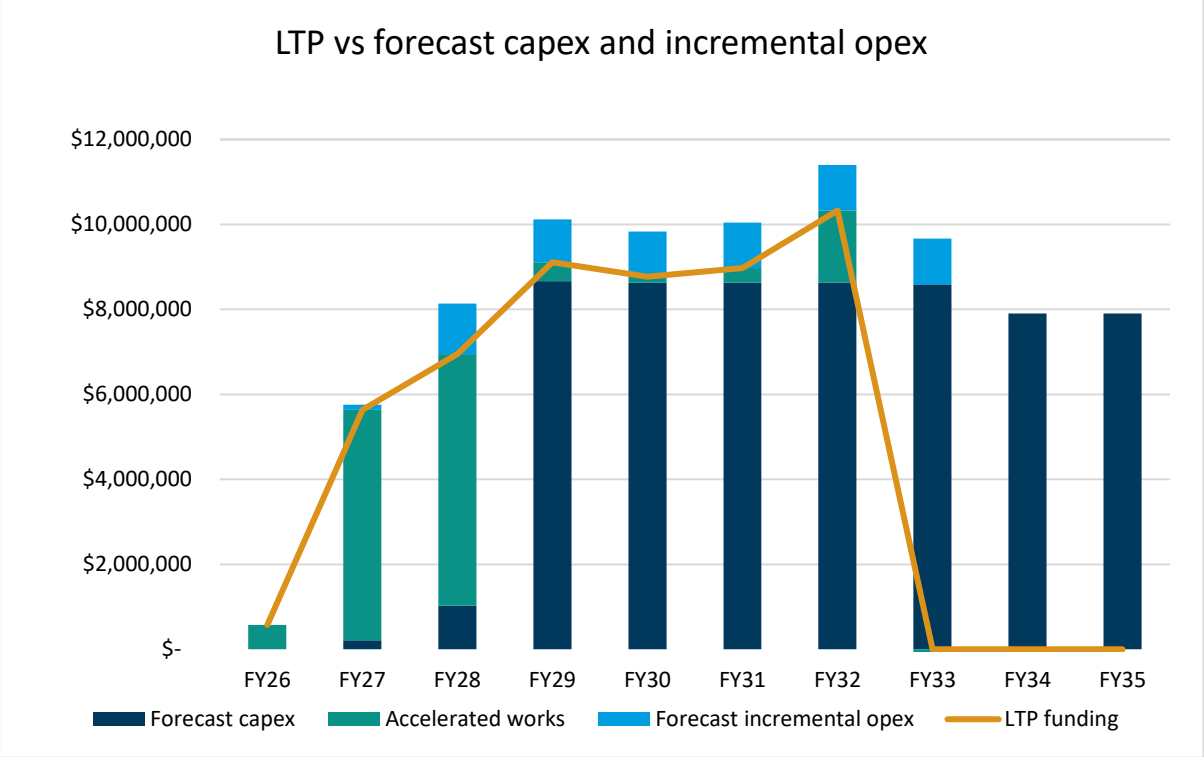
Table 39: LTP funding allocations per annum

	Exp	FY25 *actuals*	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	Total	Total (excl. FY25)
LTP Demand Management Allocations	Cap	$1,251,265	$572,058	$5,637,400	$6,950,682	$9,110,127	$8,770,670	$8,974,124	$10,328,724	$-	$51,595,051	$50,343,786
Remaining allocations after prog capex	Cap	N/A	$572,058	$5,429,400	$5,927,132	$441,791	$145,534	$413,987	$1,768,588	-$8,560,136	N/A	$6,170,855

Figure 27 illustrates the LTP funding versus forecast capex and incremental opex across the LTP funding period (allocations to FY32). LTP allocations are for capex specifically. The figure also shows the accelerated works package. This is the difference between LTP funding and forecast programme capex per financial year.

Accelerated works will be managed by the Programme Manager and will deliver high priority programme work. The Lake Hayes scheme is the first priority under accelerated works due to extremely high leakage in the scheme. This accelerated works includes the remaining approx. $5.4 million LTP funding after programme allocations in FY27 in Table 39 above. This $5.4 million will be spent on prioritised water demand management activities. This includes DMA updates with flow meters in Wānaka, Arrowtown and Hāwea (see Table 25), ensuring full customer metering in Lake Hayes scheme which has extremely high leakage, meters for bulk supply to private schemes, investigating pressure management opportunities and potential for metering in Arrowtown.

Figure 27: LTP vs forecast capex and opex



5.2 Funding availability

A core source of funding for the Programme is the 2024 – 2034 Queenstown Lakes District Council Long Term Plan (LTP).[62] The LTP outlines Council's 10-year plans, costs and funding, provisioning approximately $51.59 million (inflation adjusted) for implementing water demand management across the district over FY25 to FY32.

The latest revision of the LTP capital plan from early 2026 allocates $50.3 million (budgets inflated to funding year, based on 2025 inflation) for water demand management from FY26 to FY32 (1.3 million (actuals) was spent in FY25). These costs are split across Queenstown, Wānaka, Hāwea, Arthur's Point, Arrowtown and Lake Hayes. Luggate, Cardrona and Glenorchy are excluded as Luggate and

[62] 2024 – 2034 Long Term Plan.

Glenorchy have the smart metering pilot, and Cardrona is a new scheme. Refer to Appendix 18 for split of funding per annum to FY34.

The LTP assumes a 30% reduction in water demand through universal customer metering and volumetric charging. This means a lot of the benefits in the Economic Case have already been considered in the forward financial forecast in LTP.

The metering opex figure is indicative only and will be further investigated through the DBC and WSCCO decision making, to determine the preferred metering and water charge solution. The Procurement and RFI structure (see 4.3.3) will also help to determine the future operational model for metering.

It is anticipated that metering opex will be recovered through the volumetric water charges, and this will be addressed through the DBC alongside consideration of WSCCO funding more generally.

5.3 Overall affordability

The total capex and opex costs (undiscounted) of the programme is $131,683,325 (real cost) over the 30 years of the expected lifetime of the programme.

The capex is affordable as it is funded through the LTP allocations. Capex for the Programme is estimated to be $60 million, including additional FTE. There is a funding gap after LTP allocations of approx. $9.7 million (noting that Programme capex is forecast to FY33, whereas LTP allocations are forecast to FY32).[63]

This current funding gap can be attributed to Metering (Project 5), which represents the most significant cost, totalling $55.3 million capex and $44.8 million for opex. A more comprehensive view of costs will be developed and affordability confirmed as part of the DBC and WSCCO set up. If required at this time, it may be necessary to slow the roll out of metering to work within affordability constraints of the WSCCO. In the interim, there is sufficient capital available to complete the other projects and progress the DBC.

There are also significant opex requirements, estimated at $71.7 million over the forecast period to FY56. Approximately 62% of opex ($44.8 million) is metering, the funding for which will be confirmed by the WSCCO in the DBC. It is anticipated that, once operational, there will be some level of cost recovery through water charges. The remaining 38% of opex ($26.9 million) will be funded through prioritisation of internal resource (i.e., existing opex) or WSCCCO revenue.

The cost to customers is to be confirmed through the Metering DBC. Greater value for customers is a key consideration in determining the final approach to metering and water charges.

[63] It is important to note that LTP allocations are generally confirmed for the immediate, years 1 to 3, however after about year 3 tend act as a forecast. Further,

6 Management Case

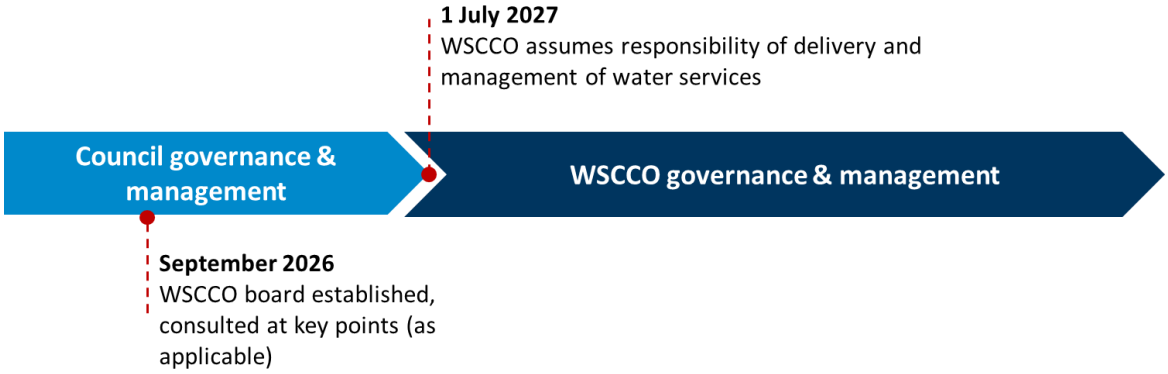
The purpose of the Management Case is to describe the arrangements that will be put in place to ensure successful delivery of the programme and to manage risk.

6.1 Programme governance and management

Council and the ELT is responsible for Programme governance and management until 1 July 2027, when the WSCCO is operational. From 1 July 2027 onwards, responsibility for the Programme transfers to the WSCCO (Figure 28). The only exception is responsibility for the Three Waters bylaw (part of Project 3), which Council will retain. However, Council may choose to delegate administration and enforcement to the WSCCO, so all projects in the implementation phase are assumed to be under the remit of the WSCCO.[64] Council will work collaboratively with the WSCCO on the Three Waters bylaw.

The WSCCO Board is expected to be set up by late 2026. At this point, Council-led Programme governance (section 6.1.2) will regularly consult with the WSCCO board, to drive a smoother transition. To mitigate the impacts of the changeover, Programme governance will remain as consistent as possible across the two phases.

Figure 28: Programme governance responsibility



The following sections outline the governance and management arrangements during Business Case development and Programme implementation, including governance structure, and roles and responsibilities.

6.1.1 Business Case governance

In December 2025, a PCG of senior leaders and subject matter experts from across Council was formed to oversee the development of this PBC. The PCG's purpose was to guide strategic direction, provide technical input, aid in day-to-day decision making and endorsement prior to ELT and Council consideration. See Appendix 1 for a list of PCG members.

The PCG forms part of the Programme governance team (described in 6.1.2), who assume responsibility for the Programme upon Business Case completion and approval.

6.1.2 Programme governance

There are two phases of programme governance, Council and WSCCO. The governance arrangements for each are set out below.

[64] Under the Local Government (Water Services) Act 2025, Council is able to delegate preparation and consultation of some required water plans to the WSCCO. These water plans are linked to the Three Waters bylaw.

Council-led governance (to 30 June 2027)

Once the Business Case is approved, the Programme will be governed by a Senior Responsible Owner (SRO) and Programme Manager, with work overseen by the existing Council Property and Infrastructure oversight system. This includes the PCG and the Engineering Control Group. Governance arrangements are:

- **SRO:** the senior leader ultimately accountable for the Programme's delivery and benefits. The SRO has authority to make programme decisions, such as to pause or stop any part of the programme.
- **Programme Manager**: responsible for the day-to-day-leadership of the Programme and the accelerated works package.
- **PCG:** Governance sign-off.
- **Engineering control group:** technical sign-off.

WSCCO-led governance (from 1 July 2027)

Once the WSCCO is operational, a Programme Board will be responsible for governance. This Board will govern all five projects within the Programme, excluding part of Project 3, the Three Waters bylaw update.

The Programme Board consists of the SRO and Programme Manager, plus relevant Council/WSCCO leaders and subject matter experts, as set out below:

- **Business Owners(s)**: responsible for managing the operational impacts of change, ensuring new processes, technologies and structures are adopted effectively to realise benefits (see 6.4). As the projects impact different parts of Council/WSCCO we expect there may be more than one business owner.
- **Project Leaders (for current projects):** A Business Leader or Project Manager for each live project. Metering (Project 5) has a Project Manager as the size and complexity of investment is significant and requires a full-time, dedicated resource. There is potential for Active leak management (Project 4) to also have a Project Manager due to the scale. Other projects have business leads as they are lower complexity and can be managed through Council's current internal capability.
- **Key stakeholders**: as the PCG transfers into the Programme Board, some PCG members representing relevant Council/WSCCO business areas, such as finance and communications, may continue as key stakeholders.

Further details on Programme Board membership are in Table 40. There is limited information on Board members in Phase Two (WSCCO) as this will be determined by the WSCCO board, but an effort will be made to maintain consistency as much as possible.

Table 40: Programme Board Members

Role	Detail
SRO	Brent Pearce Strategy and Planning / Infrastructure
Programme Manager	Helen Beaumont Strategy and Planning / Infrastructure Programme Manager responsible for accelerated works package (early, prioritised roll out of demand management measures)
Business Owners	• Council measures (Project 1): Roger Davidson, Property Director

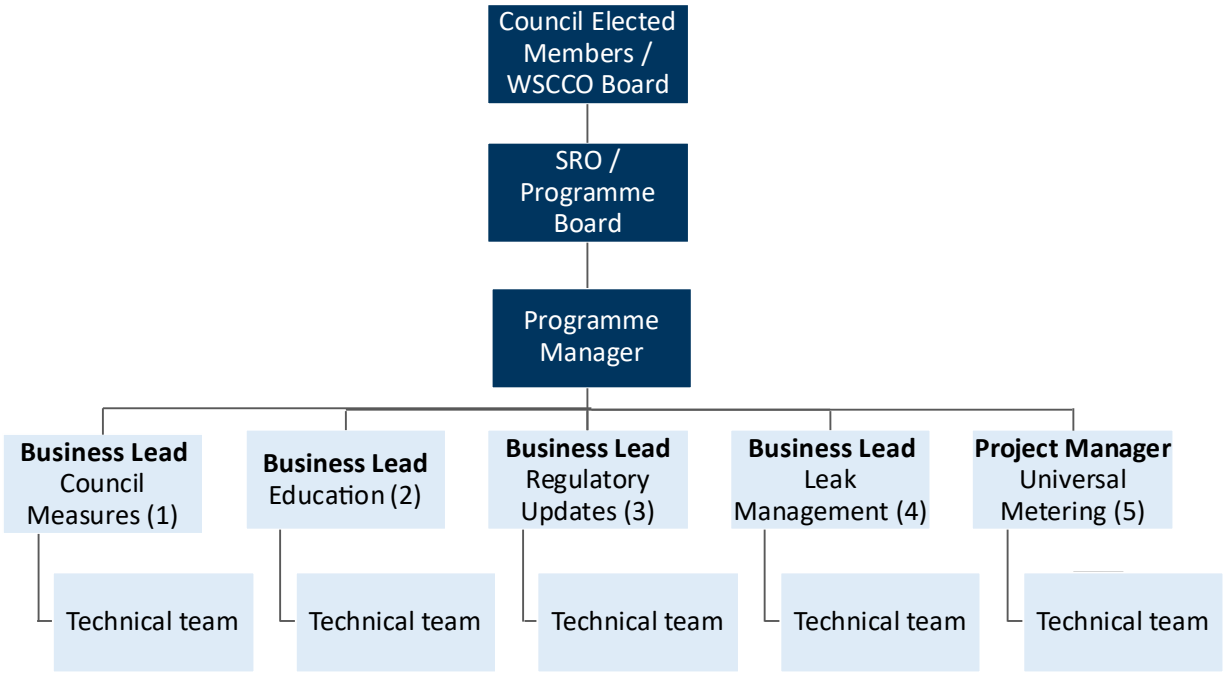
Role	Detail
	• Education (Project 2): Rebecca Pitts, Engagement and Communications Manager • Regulatory (Project 3): Carrie Williams, Policy Manager • Active leak Management (Project 4): Simon Mason, Infrastructure Operations Manager
Project Leads for current projects	Business Leads for the following: • Council measures (Project 1) – [TBC] • Education (Project 2) - Tasha Black, Senior Communications Advisor[65] • Regulatory updates (Project 3) – Luke Place, Principal Policy Advisor • Active leak Management (Project 4) – Andy Hart, Operations and Contracts Manager Project Manager for Universal metering (Project 5) – [TBC]
Representatives of corporate functions (formerly PCG)	Representatives include: • Carrie Williams (Strategy & Policy) • Simon Mason (Infrastructure Operations) • Sultan Akhmatov (Asset Management) • Jesse Taylor: Investment Advisory • Tasha Black (Communications) • Victoria Harper (Financial Services)* Note Financial services representative could change to come from within WSCCO

6.1.2.1 Governance structure

The proposed governance structure for this Programme is set out in Figure 29. The SRO reports to the Council ELT (to 30 June 2027) and the Programme Board reports to the WSCCO Board (1 July 2027 onwards), who provide endorsement and approval as needed.

[65] This role may be contracted out to Communications Partner.

Figure 29: Programme governance structure



The roles and responsibilities of the three governance layers are discussed below.

6.1.2.2 Governance roles and responsibilities

Prior to WSCCO establishment, the existing governance structures within Council's Property and Infrastructure division will be applied.

Table 41 outlines the respective roles and responsibilities of the Programme Manager, Programme Board and the WSCCO Board.

Table 41: Roles and responsibilities - Programme Board and Executives

Parameter	Programme Manager	Programme Board	WSCCO Board (or Delegate where applicable under Delegated Financial Authorities Policy)
Scope	Accountability for delivering within approved scope	Approve scope changes within agreed tolerances	Approve escalated changes only (outside agreed tolerances)
Budget	Accountability for delivering within approved budget	Endorse requests to any delegated financial authority	Approves any Business Case updates, drawdowns, reallocations or funding shifts across projects Approves use of contingency funds
Change Requests	Accountability for delivering as agreed, otherwise escalating changes to Board	Approves minor changes within tolerance	Approves major changes affecting programme outcomes or requiring reapproval
Procurement	Accountability for day-to-day oversight of procurement and contracts	Approves project-level contracts, aligning with programme strategy	Approves Procurement Plans ahead of procurement

Parameter	Programme Manager	Programme Board	WSCCO Board (or Delegate where applicable under Delegated Financial Authorities Policy)
Resourcing	Approves resource allocation as outlined by Programme Manager / Business Lead	Oversees programme to ensure resource allocation is being used as intended	Approves any increases or major changes to resource allocation
Risk Management	Owns day-to-day risk management	Owns and mitigates programme-specific risks	Owns escalated risks and systemic issues
Schedule and milestones	Accountability for delivering to schedule	Manages and adjusts within projects tolerances	Approves any major changes to schedule and milestones

Clarity on roles and responsibilities enables more efficient programme delivery. This extends to clarity on decisions made by Council ELT versus the WSCCO Board, as explained below.

Defining Council vs. WSCCO decisions

This programme is occurring at a time of significant organisational change, when responsibility for delivering and managing water services is shifting from Council to the WSCCO. Due to this transition, programme governance and management changes hands partway through the programme.

Clarity on which decisions are made by Council and which by the WSCCO will help prevent programme delays from the handover. Table 42 sets out these decisions.

Table 42: Council or WSCCO decision?

Parameter	Council decision *Now - 30 June 2027*		WSCCO decision *1 July 2027 -*
	Councillors	**Organisation**	
Business Case	Approve PBC		Approve DBC for Universal Customer Metering
Procurement		Approve Procurement Plan for Education and Active leak management (Projects 2 and 4)	Endorse Procurement Plan for Universal Metering (Project 5)
Project Plans (Projects 1 to 4)	Approval of project plans for Projects 1-4		
Communications	Kept up to date with Communications Strategy	Approve Communications Strategy	Endorse approach to mock billing communications
Universal metering	Endorse decision to implement universal customer metering subject to consultation under Significance & Engagement Policy	N/A	Approve decision on approach to metering following consultation process, including which meter type(s) will be implemented, and where other type(s) may be implemented by exception (e.g., due to connectivity)

Parameter	Council decision *Now - 30 June 2027*		WSCCO decision *1 July 2027 -*
	Councillors	**Organisation**	
	N/A	N/A	Endorse approach to shared meters in properties, e.g., body corporates, Multi-Unit Developments, and Commercial
Volumetric charging	Endorse decision to implement volumetric charging subject to consultation under Significance & Engagement Policy		Approve final water charge structure following consultation process
Existing water supply agreements	N/A	N/A	Approve approach to existing water supply agreements, e.g., Millbrook.

6.1.3 Programme management

The Programme will be managed following Council's standard procedures for projects and programmes, applying the Programme Management Office's Assurance Management Framework. This framework checks that Programme delivery aligns with strategic objectives, budget and risk tolerances. Key activities in the framework include:

- Stage-gate reviews,
- Audits on process, financial approach, risk and performance,
- Assurance reviews (see 6.7), and
- Regular reporting on cost, schedule, and risk.[66]

6.2 Programme plan

Planning has been carried out at an indicative level for the Programme. Detailed planning will be undertaken by the project teams (Projects 1, 2, 3 and 4) and during development of the DBC (Project 5).

6.2.1 Programme timelines

The sections below provide a high-level view of the timeline for each of the five projects. These timelines are indicative, reflecting thinking at the time of submission and are subject to change as the Programme progresses. Final milestones will be set in the Project Plans for Projects 1-4, and the DBC for Project 5. Figure 30 is the key for the timelines.

[66] PMO Assurance Management Framework

Figure 30: Key for project timelines

Pre-implementation and delivery *(planned)*	**Pre-implementation and delivery** *(contingency)*	**Operational phase**	**Milestones / decision points**

Project 1: Council measures

The Council project commences upon Business Case approval, with audits of council facilities and open space irrigation, followed by retrofits (if required) for open space. All audits are planned to be complete by the end of 2026, so that efficiency measures can be implemented over the summer months, when peak demand is highest. Similarly, planning for irrigation optimisation spans January to November 2027, so that measures are in place during the summer months. The fast start to this project means Council will show quick progress on managing Council-driven water demand, which is anticipated to aid in community acceptance of the Programme. Figure 31 shows indicative timing and milestones for Project 1.

Figure 31: Project 1 - timeline

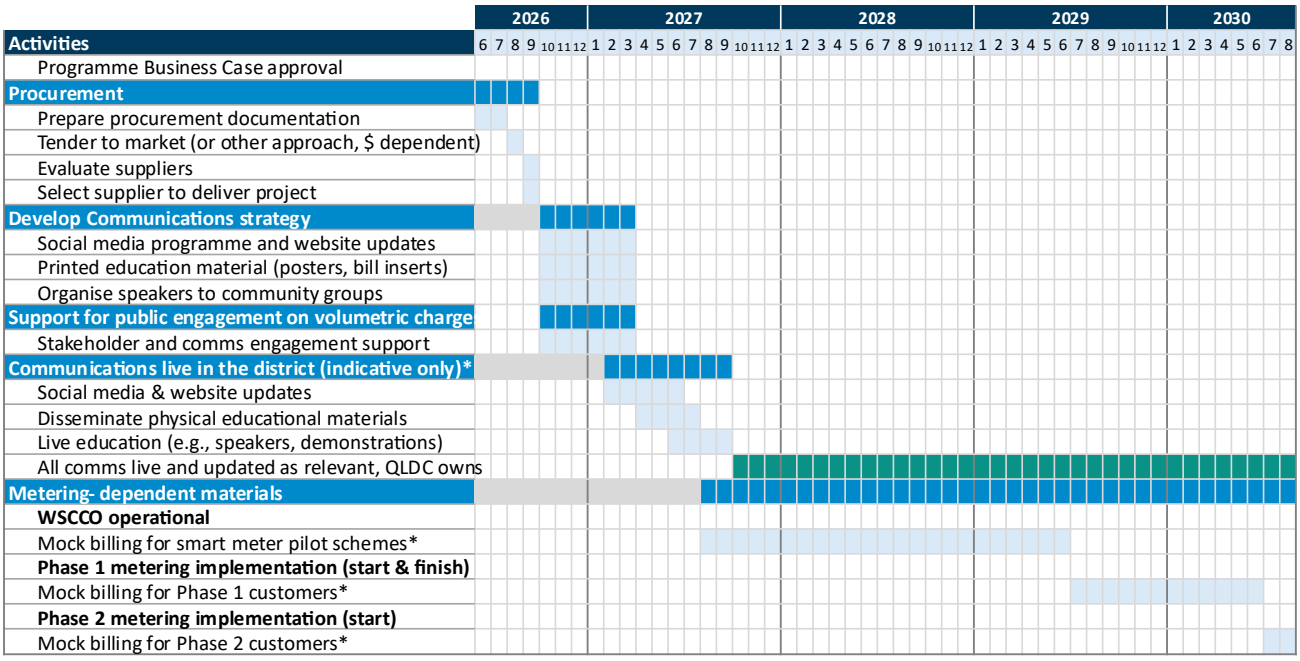
	2026						2027												2028						
Activities	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7
Programme Business Case Approval	▲																									
Council open space irrigation efficiency audit and retrofit																										
Audits of Council open space (Parks & reserves, sport fields)																										
Procure meters (if necessary)																										
Retrofit (meters, irrigation controllers etc.)																										
Mandatory council facility water audits incl. operational use																										
Audit of Council offices																										
Audits of Sport & Recreation, Aquatic Facilities																										
Audits of community halls & venues, public toilets																										
Audits of wastewater treatment plants																										
Contingency for all audits																										
Council open space irrigation during restrictions																										
Pre-implementation: develop approach for restrictions																										
Apply open space irrigation approach during restrictions																										

Project 2: Education

The Education project commences with procurement of a communications partner (4.3.2) who will be responsible for developing the Communications strategy. There is 6 months to develop the strategy, including support for public engagement on volumetric charging per the Significance and Engagement Policy 2024. Communications go live in the district from early 2027, with handover of communications fully back to Council/WSCCO by late 2027.

Timing for development of metering-dependent materials, such as mock billing, is yet to be determined. Indicatively, mock billing rolls out as soon as schemes have smart meters, but this will be confirmed through the Communications Strategy. Figure 32 shows indicative timing, milestones, and decision points for Project 2.

Figure 32: Project 2 - timeline



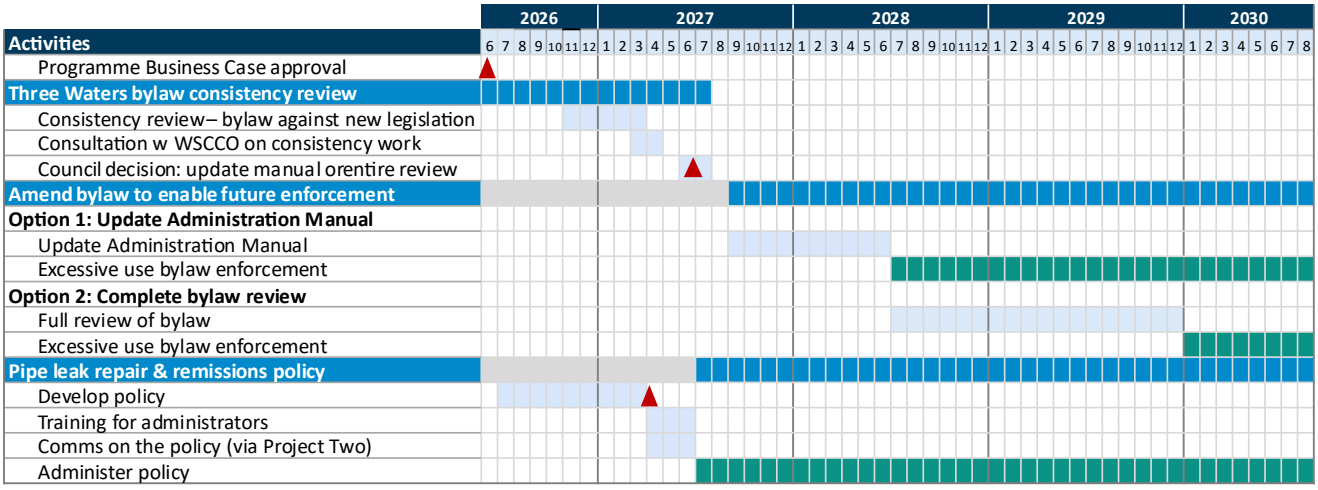
*All timing is indicative only and will be informed by the Communications Strategy

Project 3: Regulatory updates

Timing for the regulatory project is dependent upon whether the Three Waters Bylaw can be updated through the Administration Manual or requires a complete bylaw review. If enforcement of the bylaw can be enabled through updates to the Administration Manual, enforcement of excessive use can likely commence in mid-2028, in line with metering roll out. If a full review of the bylaw is required, enforcement will not commence until 2030 (full bylaw review must be completed prior to August 2030).

The pipe leak repair and remissions policy has a year-long development phase, in line with WSCCO timing, and is then administered from mid-2027 (this is when mock billing is indicatively live in smart meter pilot schemes). Figure 33 shows indicative timing, milestones, and decision points for Project 3.

Figure 33: Project 3 - timeline



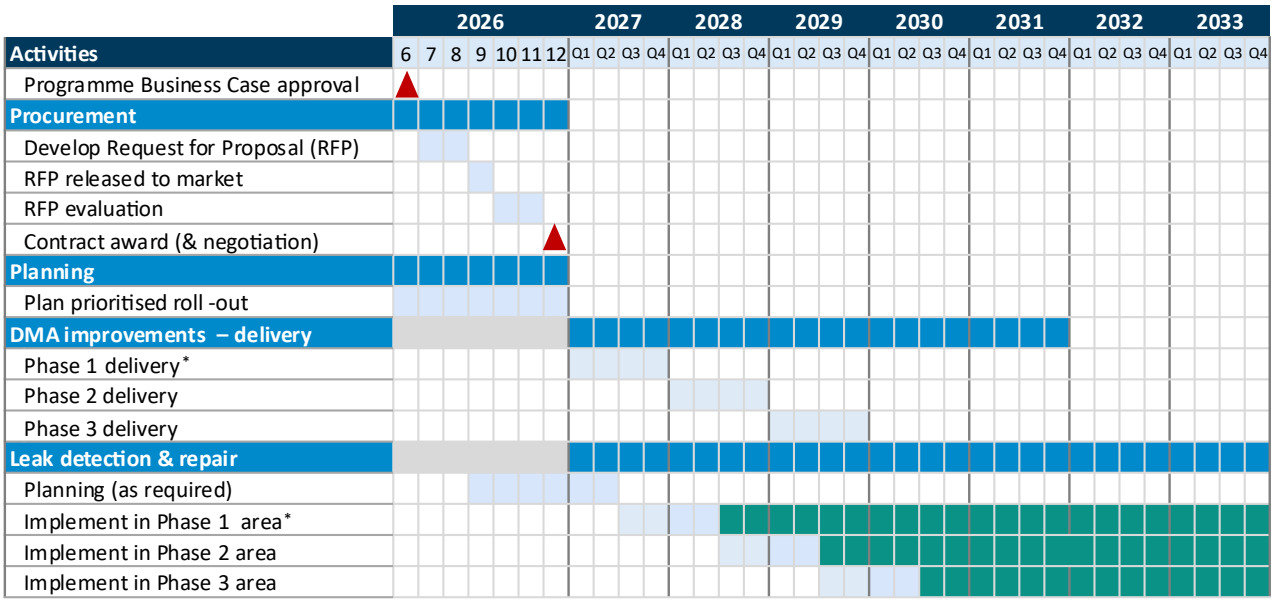
6.2.1.1 Project 4: Active leak management

The Active leak management project commences with procurement for DMA improvement services (4.3.2), with the contract awarded by the end of 2026, to enable delivery of phase 1 from the start of 2027. DMA improvements are expected to take 2-3 years, as not all schemes require DMA improvements.

Leak detection and repair is implemented in each phase the year following. Figure 30 shows indicative timing, milestones, and decision points for Project 4.

There is potential to procure a separate provider to undertake the leak repair works. This is not displayed in the timeline.

Figure 34: Project 4 - timeline



1 Phased implementation in prioritised areas.

Project 5: Universal Metering

Once this PBC is approved, a DBC (or similar) will be undertaken for universal customer metering and water charges. DBC development will run through to the WSCCO take-over date (1 July 2027), at which point the recommendations and preferred way forward will be endorsed by the WSCCO Board.

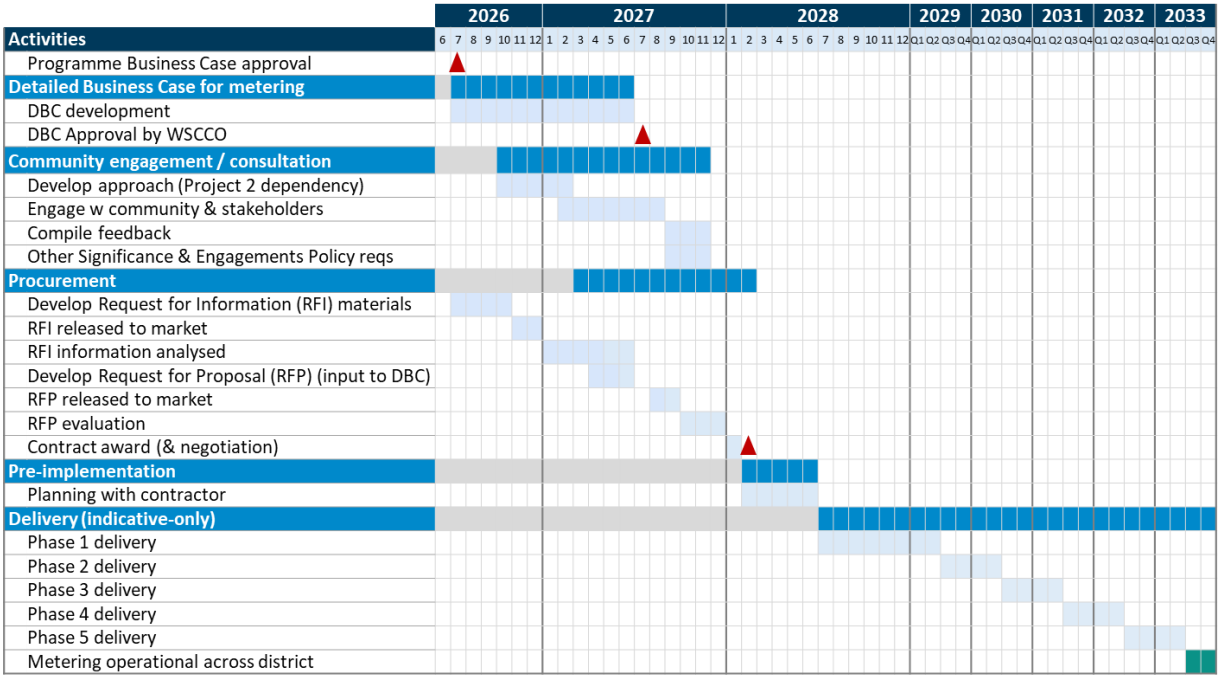
Community and stakeholder engagement will occur in parallel with the DBC, to enable feedback to inform the solution and be captured in the final document. A core part of this engagement will be ensuring Significance and Engagement Policy requirements are met.

Early procurement activities also run in parallel with the DBC. An RFI is released to the market in late 2026 and information gathered will be analysed in early 2027 to inform the procurement approach and the DBC more generally. An RFP will subsequently be released to the market with evaluation occurring in the last quarter of 2027. The preferred supplier(s) will be awarded the contract at the very beginning of 2028, allowing 6 months for pre-implementation planning between WSCCOO and the supplier(s).

Metering will be rolled out over five phases, one per year, commencing in July 2028, with smart metering operational across the entire district by mid-2033. Figure 35 shows indicative timing, milestones, and decision points for Project 5.

Note: metering timing is highly dependent upon the DBC and the WSCCOs decisions. All timing is indicative.

Figure 35: Project 5 - timeline



Note: Scale shifts from 2029 onwards, with years condensed to quarters for formatting purposes.

6.2.2 Programme milestones

Key programme milestones and decisions point dates are summarised in Table 43. Please note that projects continue in the operational phases beyond the dates outlined below.

Table 43: Key Programme milestones and decision points

Key milestone / decision point	Estimated timing
Phase One (Council)	**Jun 2026 – Jun 2027**
Asset and Infrastructure Committee / Council workshop	2 Jun 2026
PBC approval (Council Elected Members)	23 Jul 2026
Select DMA improvement supplier & contract award (Project 4)	Dec 2026
Approve Communication Strategy (Project 2)	Mar 2027
Consultation with WSCCO on bylaw consistency	Mar - Apr 2027
Decision on bylaw	Jun – Jul 2027
Phase Two (WSCCO)	**1 Jul 2027 -**
WSCCO operational (takes responsibility for Programme)	1 Jul 2027
Metering and water charging DBC approval	Jul 2027
Select metering vendor & contract award (Project 5)	Jan – Feb 2028

These milestones and decision points are correct at the time of submission and are subject to change as the Programme progresses, particularly given handover to WSCCO.

6.2.3 Workforce Planning

Internal capacity and capability were identified as key programme risks in workshops with the PCG (see 6.6.1). That is, the risk of insufficient resources and / or capability within Council/WSCCO to implement and maintain demand management solutions. A key mitigant to this risk is workforce planning.

There are two elements of workforce planning for this Programme: Full-Time Equivalent (FTE) to run the projects and FTE to manage the work in the operational stage. These are set out below.

Workforce to run Programme

The workforce required to run the Programme is in Table 44 below. These are assumed as capex in the Financial Case (5.1).

Table 44: Workforce to run Programme

Role	FTE
Programme Manager	1 FTE
Business Leads for Project 1 – 4	0.3 – 0.5 FTE per project, 1.2 – 2 FTE total
Project Manager for Universal metering (Project 5)	1 FTE
Technical resources (e.g., Procurement, Asset Management, Communications)	Will vary through the life of the project but will draw on existing FTE across Council / WSCCO business areas. This will require prioritisation against other projects.

Workforce to manage the Programme once operational

The workforce required once the Programme is operational is yet to be determined, as it is dependent on procurement and detailed planning. However, through consultation with the PCG it is understood that more capacity is required to 'operationalise' the Programme. This includes resource to:

- Oversee the pipe leak repair and remission policy (Project 3)
- Oversee Three Waters bylaw and excessive water use clauses, as well as active management and enforcement (Project 3)
- Manage metering, including financials and operations. The DBC for metering will make in-source versus out-source decisions for services. Given capacity restrictions, likely to outsource significant portion.
- Oversee or deliver ongoing education campaigns (Project 2)
- Oversee and continue to refine operational water savings (Project 1)

6.3 Organisational change management

There is already significant change underway in Council, due to the establishment of the WSCCO. It is therefore important that all the change elements of this Programme are addressed through the broader change management process and existing transformation work.

Change management is the process of organising and supporting a change process from start to finish, including engaging resources to embed and sustain the change. The change management strategy for this Programme is to anticipate key change areas (see below), plan for these changes

(e.g., increase resourcing, hire for specific capability, training) and then monitor these changes from planning through to the operational phase.

Universal metering (Project 5) is anticipated to drive organisational change in this Programme, as it is a new capability. While there is some capability built in Council, and lessons learned, through the smart metering pilot, significantly more capacity and capability required to effectively deliver this universal metering and volumetric charges.

Key business change areas

Enabling smart metering will require a new IT platform, communication hardware and ways of working. Council/WSCCO needs the capacity and capability to manage and effectively implement these new technologies, systems and processes. Key anticipated business change areas include:

- **Technology:** new software and systems will be introduced with smart metering. Operations, finance, and asset management will need to understand this technology to enable mock billing, actual billing, leak management, and communication with customers (e.g., online platform).
- **Assets:** hardware such as smart meters and DMA-specific meters will be introduced, operations and asset management will need to understand this technology for the same reasons as above.
- **Organisational capability**: new processes and ways of working will be applied at Council/WSCCO through the introduction of volumetric charging and a new billing method, and a remissions policy. To ensure capability to manage new systems and processes, Council/WSCCO will provide training and/or hire dedicated FTEs as appropriate.

Strategies to manage these key change areas will be developed as part of the change management approach.

Change management approach

The change management approach is to integrate into broader change management processes (from the Council to WSCCO transfer) whenever possible.

The [SRO] is ultimately accountable for programme change management. The Programme Manager will be responsible for planning and coordinating the overall change management approach across the Programme. This will include:

- Developing the Change Management Plan for each applicable project (as deemed necessary). These Plans will establish clear roles and responsibilities within Council/WSCCO to deliver the change.
- Identifying organisational impacts, managing stakeholder engagement, and coordinating change impact assessments.
- Ensuring integration of change management with other programme activities.
- Providing tools, training, and guidance to support change readiness.
- Reporting on change readiness, resistance, risks, and mitigation strategies.

It is expected that the Programme Manager will do this via broader change processes underway for WSCCO establishment as much as possible. However, due to the scale of Project 5, there will need to be considered change management planning as a part of implementation. This will need to be addressed by the DBC.

6.4 Benefits realisation

The key benefits that will be monitored throughout implementation are the three identified in the ILM (2.2.1). Table 45 outlines these benefits, Key Performance Indicators (KPIs) and measures. Refer to (2.3) for a description of each benefit.

Where possible, measures have been selected that Council/ WSCCO are already required to report on, in order to leverage existing information. For example, the Network and Environmental Performance Measures (NEPM) from Taumata Arowai and the Council Water Demand Management Plan measures have been used.[67]

Effective benefits realisation utilises both 'lead' and 'lag' indicators. Lead indicators are predictive and indicate if the Programme is on track to achieve the Investment Objectives and benefits. They are measured throughout implementation. Lag indicators are result-oriented and indicate if the Programme was successful post-implementation (but can also be measured during implementation). Table 45 shows the split of lead and lag indicators.

Table 45: Benefits and Key Performance Indicators

Benefit	KPIs	Measure / Notes	Lead	Lag
Safe and reliable Council water supply	KPI 1: low pressure	Number of properties below reference level of pressure (NEPM D-R18)		✓
	KPI 2: high pressure	Average system pressure (NEPM, D-R15)		✓
	KPI 3: System interruptions	Number of unplanned interruptions to the water supply, such as asset failure in the public reticulated network (NEPM, D-R7)		✓
	KPI 4: Water restriction days*	The total number of days in a reporting year during which water restrictions were in place across some or all the organisation's owned/operated supplies in the area under the district (NEPM D-R19)	✓	
Efficient and sustainable water demand	KPI 5a: water demand*	Total water supplied per demand unit (Council Water Demand Management Plan)	✓	✓
	KPI 5b: water consumption*	Average water consumption litres/capita[1]/day (Council Water Demand Management Plan and/or Climate Action Plan)[68]	✓	
	KPI 6: water consumption (future KPI)	Median residential water consumption in litres/unit/day (NEPM D-RE4) This is a future KPI as metering is required for this measure. Water consumption will be monitored through the operational phase. Results from monitoring will inform adjustments (e.g., adjustments of charges) to ensure benefits are still realised in the long term.		✓
	KPI 7: Network water loss	Infrastructure Leakage Index calculation for network water loss, to determine real loss in litres/connection/day[69] (NEPM, D-RE3)		✓

[67] Network Environmental Performance Measures and Guide 2025, Taumata Arowai. Pages 10 – 18.

[68] For Climate Action Plan, dependent upon definition of average day population. Needs to be Resident + average visitor.

[69] This measure is dependent on connection density – currently valid in eight of the networks with Cardona still to be verified. Requires >20 connections/km to use L/connection/day.

Benefit	KPIs	Measure / Notes	Lead	Lag
	KPI 8: Water supply emissions	Water supply emissions reduction (Council Climate Action Plan - 2.5 Organisational GHG emissions reporting)		✓
	KPI 9: Resource consent compliance	Failure to meet resource consent conditions (NEPM, D-EH16)	✓	
Fair and equitable charges for water supply	KPI 10: additional demand capex	Total capex by meeting additional drinking water demand (NEPM, D-ES1.1)	✓	
	KPI 11: proportional cost	Proportional cost: water use / demand unit		
	KPI 12: average bill per household	How this is measured and benchmarked is TBC. Option to benchmark against 200L average cost and other networks in New Zealand. To be determined through the DBC.		✓

*These are interim KPIs, until metering is implemented.

For each measure, the baseline will be the current state (acknowledging this may be an estimate for some indicators). The targets will be derived by benchmarking against other water service providers.

6.5 Communication and engagement plan

The recommended communications and engagement approach will be determined through development of the Communications Strategy, as a part of Project 2. It will be tailored to support the delivery of the Programme and generate community acceptance.

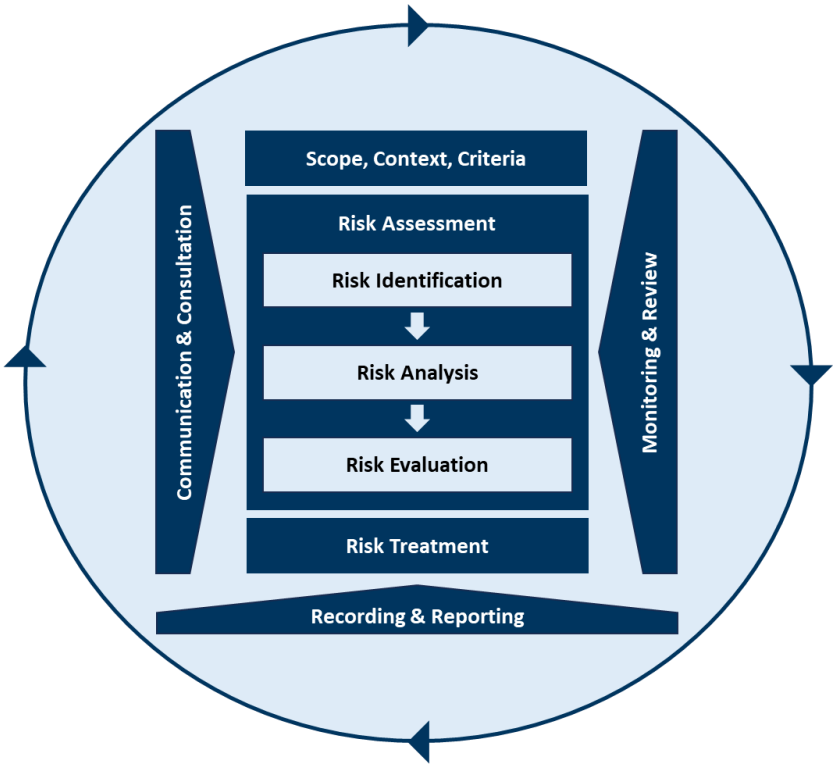
The Communications Strategy and stakeholder engagement is a crucial element of risk management. One of the key risks identified through PCG consultation is public perception and community pushback (see 6.6.1), which effective community and stakeholder engagement will help mitigate.

6.6 Risk management policies and planning

The Council Risk Management Policy is aligned with the principles and processes described within AS/NZS ISO 31000:2018 Risk Management Guidelines.[70] Key steps of Council's risk management process are shown in Figure 36.

[70] Risk Management Policy

Figure 36: Council's / ISO31000:2018 Risk Management Process



Roles and responsibilities for risk management are defined within Council's Three Lines (of assurance) Model, broadly consistent with the Institute of Internal Auditor's Three Lines Model Update 2020. Council's Three Lines model delineates responsibilities across three distinct lines of assurance (see bullets below), enhancing accountability and transparency in managing risks and achieving organisational objectives:

- Council Management
- Risk and compliance management, and
- Internal assurance (audit).

The Programme will manage risk in accordance with Council's Risk Management Policy and the Three Lines (of assurance) Model. Programme risks will be reviewed monthly by Project Teams and escalated and reported according to the delegated authority and tolerance thresholds. Very high and High residual rated risks will be included in the regular Project Status Reports presented to the Programme Board.

6.6.1 Risk register

A programme risk register was developed (Appendix 19) during the Business Case through consultation with the PCG. This risk register will be reviewed and updated as more detailed analysis is undertaken and throughout the programme. Key risks are summarised in Table 46 below.

There are significant dependencies across projects. For example, Education (Project 2) reduces the risk profile of the entire Programme, by increasing community understanding. Therefore, a key mitigation is delivering all projects, as a Programme.

Table 46: Summary of Risk Register

Current Key Risks	Risk Description	Consequence Rating	Mitigations / Actions
Community and stakeholder opposition	Public resistance to metering and volumetric charging, and outdoor water use restrictions driven by perceived costs, equity/fairness issues or limited understanding of the need for water demand management.	Medium	• Communications and education are a foundational dependency and key mitigation • Develop comprehensive communications strategy, including real data from smart meter trials. • Provide mock billing ahead of charging, to enable behaviour adjustment. • Project 4 (Active leak management) key mitigant, comms to illustrate that council is focusing on their side to reduce costs.
Internal capacity and capability	Insufficient resources and capability within Council/WSCCO to implement and maintain demand management solutions. Metering and charges are key factor as requires new software, IT systems and a culture shift. Additional complexities such as the remissions policy.	High	• Resourcing levels are considered and proposed for funding as part of the business case • Workforce planning (6.2.3) • Succession planning for key staff members
Benefits Realisation	The proposed programme does not achieve the demand reduction and efficiency gains assumed in the Business Case, due to overestimation of intervention effectiveness or incomplete implementation of supporting measures.	High	• Develop a coordinated education and engagement programme using local media and council channels to explain peak irrigation demand risks, the primary contributors to high summer use and establish clear social norms for responsible water use across all customer groups and ages. • Benefit realisation mitigation includes option to adjust pricing over time but needs further assessment • Establish clear roles and responsibilities and benefit owners (see 6.4). • Establish KPIs, rigorous accountability mechanisms, and monitoring, reporting and continuous improvement processes. • Adjust volumetric charge until the benefit is met.
Market capacity	Market has insufficient capacity to implement and maintain demand	Medium	• Early market engagement (RFI for metering)

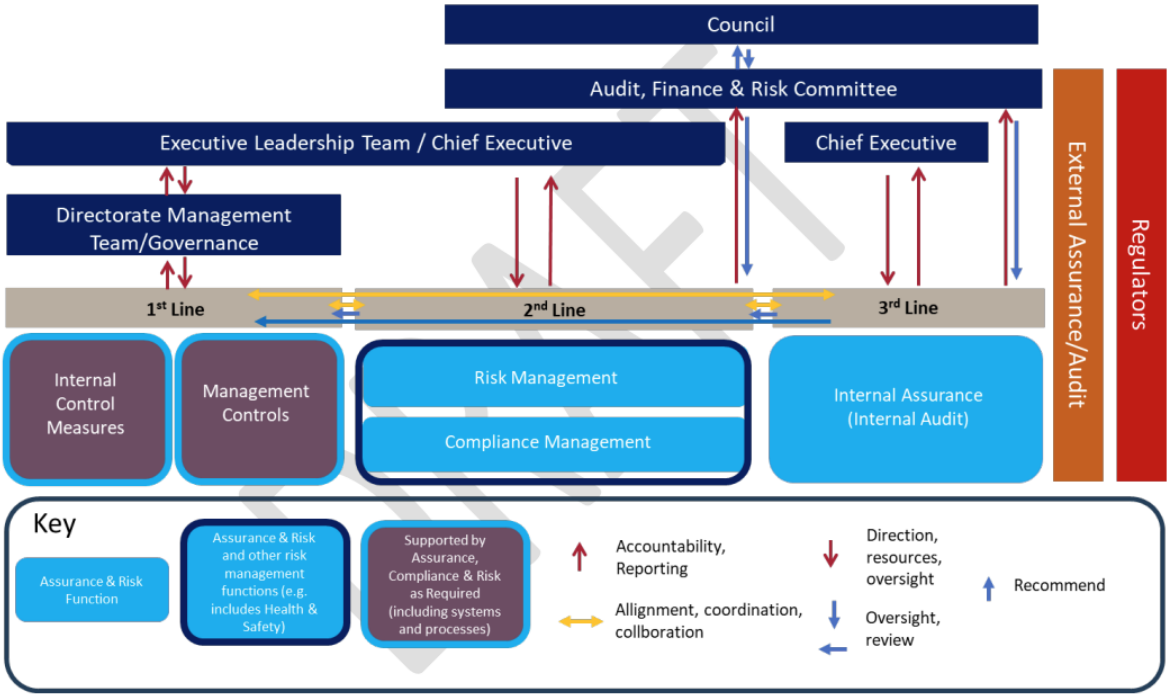
Current Key Risks	Risk Description	Consequence Rating	Mitigations / Actions
	management solutions, including metering installation and leak detection, especially given current water reforms		• Reliable forward programme of work for Active leak management and Metering (Projects 4 and 5) to enable market time to plan and react. • Explore opportunity for relationship with provider for ongoing programme.

6.7 Programme assurance and post-project evaluation

6.7.1 6.6 Assurance

Programme assurance will be carried out in accordance with Property and Infrastructure's Project Management Office Assurance Management Framework.[71] This includes following the Three Lines of Assurance model, as set out in Figure 37 and explained in 6.6.

Figure 37: Three Lines of Assurance diagram



6.7.2 Post-project evaluation

All projects are delivered in packages. At the end of each package there will be a lessons learned exercise, which will feedback into how future packages/phases are delivered. Active leak management and Metering (Projects 4 and 5) are phased, so will be adjusted throughout delivery.

Post-project evaluations for projects within the Programme will be carried out to assess the achievement of the investment objectives and realisation of benefits, and to identify any lessons learned that can be applied to future projects.

[71] PMO Assurance Management Framework

7 Conclusion / Next Steps

The Water Demand Management PBC will be submitted to Council on 23 July 2026 for endorsement. Following endorsement, Council will commence the preferred programme. First steps for programme implementation include:

- Hiring additional FTE (Table 36) to support programme delivery,
- Commencing procurement processes for the Education (Project 2) and Active leak management (Project 4) projects,
- Commencing all projects, excluding Metering (Project 5), and
- Actively managing the transition from Council to WSCCO responsibility through regular updates to WSCCO.

Metering (Project 5) is the most significant project in the programme, representing over 75 percent of total programme costs (capex and opex). Decisions on meters and water charges are also likely to be defined as 'significant' under Councils' Significance and Engagement Policy 2024, meaning decisions would be subject to the special consultative procedure.[72] As such, this project is subject to further planning prior to implementation, as outlined below.

Detailed Business Case – Metering (Project 5)

Further detailed analysis, likely a DBC, will be completed for Metering (Project 5). This DBC (or other detailed planning), will build on the work done to date to confirm strategic alignment, value for money decisions, robust commercial strategies, funding arrangements and management strategies for metering. Given the indicative nature of the work done to date, metering measures and potential water charges will be re-evaluated through the DBC.

It is anticipated that the Metering DBC will be endorsed by the WSCCO in mid-2027, to enable metering implementation soon after.

[72] https://www.qldc.govt.nz/media/1vihj1qr/qldc_significance-and-engagement-policy-final5.pdf

Appendix 1. Programme Control Group

The Water Demand Management Programme Business Case PCG provides strategic direction, technical oversight, and decision-making support for the development of a comprehensive business case.

The PCG contributes to a robust and evidence-based business case that aligns with Council's strategic objectives, enabling informed decision-making by the Executive Leadership Team (ELT) and Council.

Membership

The PCG comprises senior leaders and subject matter experts from across Council.

Table 47: PCG membership

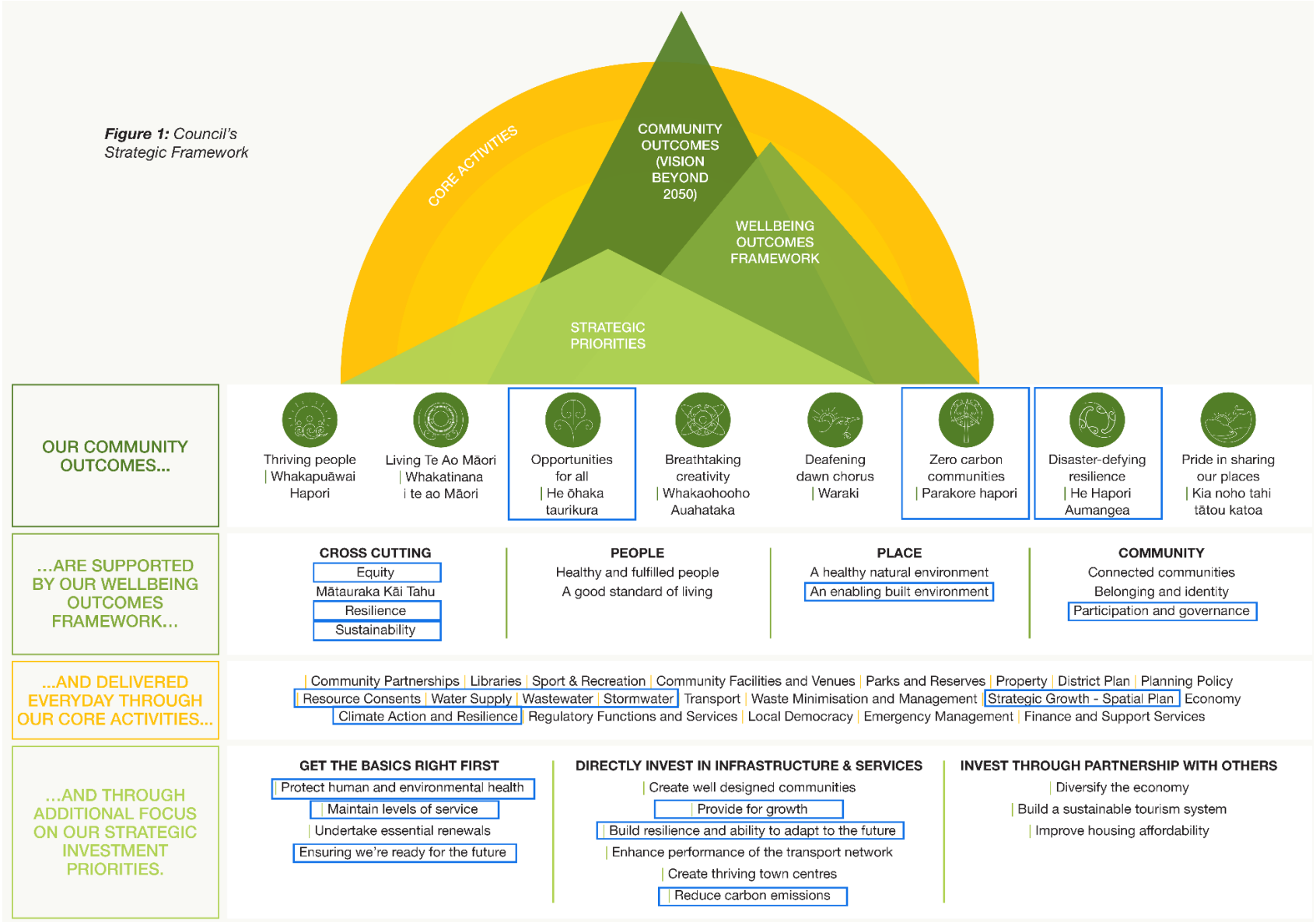
Role	Representative	Council Business Area
Chair / SRO	Brent Pearce	Strategy & Planning / Infrastructure
Programme Lead	Helen Beaumont	Strategy & Planning / Infrastructure
Member	Victoria Harper	Financial Services Manager
Member	Carrie Williams	Strategy & Policy
Member	Simon Mason	Infrastructure Operations
Member	Sultan Akhmatov	Asset Management
Member	Campbell Weal Tasha Black[73]	Communications
Member	Rebecca Dukes Jesse Taylor	Investment Advisory

[73] Tasha replaced Campbell as Communications PCG member midway through.

Appendix 2. QLDC strategic framework

The image below shows Council's strategic framework with areas specifically aligning to water demand management called out in blue boxes.

Figure 38: QLDC Strategic Framework



Appendix 3. Demand units

Demand units are used throughout this business case to understand and quantify water demand within a scheme or the network. The demand unit definitions provided below are Council definitions that align closely with the Water Services Authority - Taumata Arowai Network Environmental Performance Measures and Guide 2025 for demand units. Please note, that where demand units are referred to, that means the total number of demand units in a scheme, regardless of land usage.

Table 48: Key water demand definitions[74]

Term	Explanation

Demand unit | for all district rating units, excluding the accommodation sub-category	• This is the definition for demand units for properties within the following categories: Residential, Residential plus flat, Accommodation mixed use, Commercial, Commercial mixed use, Hydro/utility, Vacant Country dwelling plus flat, Country dwelling.
	• One demand unit is equivalent to one separately used or inhabited part ('SUIP') of a rating unit within the district
	• In this context, demand unit is applied to drinking water demand units, whereby one demand unit = one SUIP serviced by the reticulated drinking water network.
	• A SUIP is defined as:
	  ○ Any part of a rating unit that is used or occupied by any person, other than the ratepayer, having a right to use or inhabit that part by virtue of a tenancy, lease, licence, or other agreement.
	  ○ Any part or parts of a rating unit that is used or occupied by the ratepayer for more than one single use.[75]
	• These are considered to be SUIPs:
	  ○ Individual flats or apartments,
	  Separately leased commercial areas (which are leased)
	  ○ Vacant rating units
	  ○ Single rating units which contain multiple uses such as a shop with a dwelling or commercial activity with a dwelling
	  ○ A residential building or part of a residential building that is used, or can be used as an independent residence.[75]
	• These are not considered to be SUIPs
	  ○ A residential sleep-out or granny flat that does not meet the definition of an independent residence
	  ○ A hotel or motel room with or without kitchen facilities
	  ○ Individual storage garages/sheds/portioned areas of a warehouse
	  ○ Individual offices or premises of business partners.[75]

Accommodation demand unit | for all	• Accommodation is defined as commercial accommodation including hotels, motels, and campgrounds. It does not include homestays and residential visitor accommodation used less than 180 days per year.

[74] https://www.taumataarowai.govt.nz/assets/Uploads/Network-Performance/Environmental-Performance-Measures-and-Guide-2025.pdf, pages 21 – 23.

[75] https://www.qldc.govt.nz/media/0ikio3gj/2a-proposed-rates-and-charges-for-2025-26.pdf

Term	Explanation

accommodating rating units	• If, on one parcel (e.g., one hotel) separate accommodation units each have unit titles, then standard demand unit definition applies, i.e., one SUIP = one demand unit.
	  ○ E.g., the Hilton Queenstown – fully unit titled with each hotel room / accommodation unit a unique SUIP.
	• If a parcel is not unit titled, then it will appear as one SUIP. For this scenario, demand units are calculated using historic data on number of rooms per accommodation parcel, where every room is a demand unit.
	  ○ E.g. 2, the Rydges Hotel, which appears as one SUIP, has ~170 rooms according to historic database, therefore there are 170 demand units.

Connections / physical service connections | Number of metered physical service connections in the network.	• Point of physical service connection with the water supply system. • E.g., If a multi-unit apartment building has one supply but 100 apartments, this is one connection. If a retirement village consists of multiple units and each has its own connection, then each unit must be counted) • Similarly, where a single non-residential connection services multiple tenancies, the number of connections should be one.

Appendix 4. Local Government (Water Services) Act 2025 – relevant clauses

The objectives of water service providers are outlined in section 17 of the Act, as seen in the figure below. Relevant wording has been highlighted.

Figure 39: Section 10 of the Local Government (Water Services) Act 2025

10 How territorial authority ensures water services provided

(1) A territorial authority must ensure that water services are provided in its district in any 1 or more of the following ways:

- (a) providing water services itself directly:
- (b) a transfer agreement to transfer responsibility for providing water services to a water organisation (*see* sections 12 and 15):
- (c) a contract with a person or body to provide water services on behalf of the territorial authority (*see* section 22):
- (d) a joint water service provider arrangement (*see* section 26):
- (e) by an Auckland water organisation (if applicable):
- (f) another type of arrangement that is consistent with this Act, including receiving a transfer of responsibility for providing water services from the regional council (*see* section 41).

(2) A territorial authority may use a method listed in subsection (1) for providing—

- (a) 1 or more water services; or
- (b) any or all aspects of a water service.

(3) Subsection (4) applies to a territorial authority that enters into a contract or an arrangement under subsection (1)(c), (d), or (f).

(4) The territorial authority—

- (a) continues to be responsible, as the water service provider under this Act, for ensuring the provision of the water services to which the contract or arrangement relates; and
- (b) must ensure that the other party to the contract or arrangement performs and exercises all regulatory requirements associated with providing the water services to which the contract or arrangement relates.

Figure 40:Section 17 of Local Government (Water Services) Act 2025

Water service providers

17 Objectives of water service providers

(1) The objectives of a water service provider are—

- (a) to provide water services that—
  - (i) are reliable; and
  - (ii) are resilient to external factors, for example, climate change and natural hazards; and
  - (iii) are of a quality that meets consumer expectations; and
  - (iv) meet all regulatory requirements, including, if the water service provider is responsible for water supply services, providing drinking water that is safe for consumers; and
- (b) to ensure that it provides water services in a cost-effective and financially sustainable manner, including by—
  - (i) planning effectively to manage water services infrastructure used to provide water services in the future; and
  - (ii) sharing the benefits of efficiency gains with consumers, including when setting charges for water services; and
  - (iii) using water resources efficiently when providing water supply services; and
- (c) to perform its functions as a water service provider—
  - (i) in an open, transparent, and accountable manner; and
  - (ii) in accordance with sound business practice; and
- (d) to act in the best interests of current and future consumers; and
- (e) to support housing growth and, if applicable, urban development in its service area; and
- (f) to be a good employer.

(2) In subsection (1),—

good employer has the same meaning as in clause 36(2) of Schedule 7 of the LGA 2002 and applies to a water organisation as if it were a local authority

natural hazard has the meaning set out in section 2(1) of the Resource Management Act 1991

safe has the meaning set out in section 7 of the Water Services Act 2021

urban development has the meaning set out in section 10(1) of the Urban Development Act 2020.

Figure 41: Section 86 of Local Government (Water Services) Act 2025

86 Water organisation may set charges

(1) A water organisation may set and collect charges for 1 or more of the following:

- (a) water supply services:
- (b) stormwater services:
- (c) wastewater services, including trade waste services.

(2) A charge set and collected under subsection (1) may include charges for 1 or more of the following:

- (a) the initial connection to 1 or more of the services specified in subsection (1):
- (b) serviceability (*see* section 88):
- (c) meeting the costs that the water organisation incurs in performing and exercising its duties, functions, and powers in relation to providing water services.

(3) When setting a charge, the water organisation may determine—

- (a) how the charge is assessed; and
- (b) when the charge is due; and
- (c) how the charge is collected; and
- (d) how the charge may be paid.

(4) When determining whether to set a charge, or how a charge is to be collected or may be paid, the water organisation may (by way of example) do 1 or more of the following:

- (a) charge a fixed or variable charge:
- (b) charge according to water usage or wastewater flow:
- (c) require a deposit and then further payment:
- (d) require full payment at the outset:
- (e) charge on the basis of an hourly rate or any other rate of service or by any other method of charging.

(5) For the purposes of subsection (2)(b), a charge for serviceability is a charge in respect of a property to which section 88 applies.

(6) A charge set under this section—

- (a) must be set in accordance with the water organisation's water services strategy (*see* sections 230 and 231); but
- (b) must not be based on, or take into consideration, a property's rateable value.

(7) In this section, **trade waste services** means services provided in relation to trade waste.

Appendix 5. Proposed QLDC rates and charges 25/26

Water supply rates

Proposed water supply rates for FY26 are provided below for Queenstown and District Water Supply Arrowtown Water Supply and Wānaka Water Supply. [76]

Pursuant to sections 16, 17 and 18 of the Act, Council proposes to set a differential targeted rate for water supply on each separately used or inhabited part of every connected or serviceable rating unit within the respective water supply areas as follows:

- Queenstown and District water supply: $310.00
- Arrowtown water supply: $280.00
- Wānaka and District water supply: $240.00
- Arthurs Point water supply: $400.00
- Glenorchy water supply: $530.00
- Hāwea water supply: $260.00

Pursuant to sections 16, 17 and 18 of the Act, Council proposes to set a targeted differential water supply rate based on land use on the rateable capital value of all rating units connected in the following water supply areas.

Table 49: Targeted differential water supply rate 25/26

	Queenstown (cents in the $)	Arrowtown (cents in the $)	Wanaka (cents in the $)	Arthurs Pt (cents in the $)	Glenorchy (cents in the $)	Hawea (cents in the $)
1. Residential	0.00016249	0.00017595	0.00015977	0.00028275	0.00071303	0.00023180
2. Residential plus Flat	0. 00016249	0. 00017595	0. 00015977	0.00028275	0.00071303	0.00023180
3. Accommodation	0.00029249	0.00031671	0.00028758	0.00050895	0.00128346	0.00041724
4. CBD Accommodation	0. 00029249	0. 00031671	0.00028758	-	-	-
5. Commercial	0. 00025999	0.00028152	0.00025563	0.00045240	0.00114085	0.00037088
6. CBD Commercial	0.00025999	0. 00028152	0.00025563	-	-	-
7. Primary Industry	0.00012024	0.00013020	0.00011823	0.00020923	0.00052764	0.00017153
8. Country Dwelling	0.00013324	0.00014428	0.00013101	0.00023185	0.00058468	0.00019008
9. Country Dwelling plus Flat	0. 00013324	0. 00014428	0. 00013101	0.00023185	0.00058468	0. 00019008
10. Other	0. 00016249	0. 00017595	0.00015977	0. 00028275	0.00071303	0.00023180
11. Mixed Use Apportioned	See note (i)	See note (i)	See note (i)	See note (i)	See note (i)	See note (i)

Note (i) The mixed-use apportioned properties will be treated as 25% Commercial or Accommodation and 75% Residential (or plus Flat) or Country Dwelling (or plus Flat) as appropriate.

Note (ii) those properties comprising a Residence plus Flat and Country Dwelling plus Flat will be charged the targeted rate at a factor of 1.5.

[76] https://www.qldc.govt.nz/media/0ikio3gj/2a-proposed-rates-and-charges-for-2025-26.pdf

Other water supplies

Pursuant to sections 16, 17 and 18 of the Act, Council proposes to set a differential targeted rate for water supply on each separately used or inhabited part of every rating unit connected to the respective scheme, and a half charge on each separately used or inhabited part of every serviceable rating unit.

Table 50: Targeted differential rate for other water supplies 25/26

Water Supply	Full Charge ($)	Half Charge ($)
Lake Hayes	730.00	365.00
Luggate	870.00	435.00
Cardrona (note ii)	800.00	400.00

The Targeted Water Supply Rates revenue ($18,251,412) will be used to fund the costs associated with the following activities:

(i) To provide supplies of potable (drinkable) water to the above communities.

(ii) (ii) Properties outside of the Mount Cardrona Station development may connect to the water supply scheme by application. Those properties not electing to connect will not be charged an availability charge.

Note : those properties comprising a Residence plus Flat and Country Dwelling plus Flat will be charged the targeted rate at a factor of 1.5.

Appendix 6. Letter from Minister for Local Government

Hon Simon Watts

Minister of Climate Change
Minister of Local Government
Minister of Revenue
Minister for Auckland

19 June 2026

Dear Mayors and Chairs

Implementation of Local Water Done Well

I am writing to acknowledge the work you are doing to implement Local Water Done Well in your local area. I note the moves to separate out water charges from general rates for those councils moving to a council-controlled organisation (CCO) water services delivery model. I also note water appearing as a ring-fenced item on rates bills for those councils setting up in-house business units.

It is particularly pleasing to see the first multi-council water services CCOs come into operation. This includes IAWAI – Flowing Waters in the northern Waikato, and Waikato Water providing services to the six southern Waikato council districts. Tiaki Wai will soon be delivering services to consumers in the four metropolitan council areas in Wellington. In the South Island, Kaikōura Hurunui Water Services begins operations soon, joining Selwyn Waters which launched in 2025.

Over the next two years, 30 more councils will move their in-house operating model to some form of water services CCO.

I was pleased to note the widespread intention to adopt volumetric charging in council water services delivery plans. Water metering and volumetric charging can help reduce water consumption, assist in quick identification of leaks and help manage water losses, which supports the ongoing efficiency and effectiveness of water infrastructure and services. Councils and their water services CCOs should be considering these tools (where they are not already in place) as part of their future arrangements.

The Local Government (Water Services) Act 2025 provides a five-year timeframe to transition away from using property values as a factor in setting water charges, to new charging mechanisms such as water metering and volumetric charging.

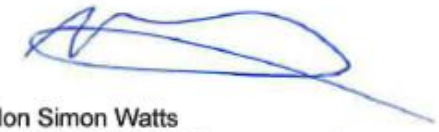
Under the economic regulation regime, over time the Commerce Commission (Commission) will also be able to consider whether prices are efficient. Including, for example, whether prices reflect the cost of providing services and whether providers are using water resources efficiently.

I would also like to take the opportunity to remind you that from 1 July 2026, the Department of Internal Affairs' local government functions including water services will move to the Ministry of Cities, Environment, Regions and Transport (MCERT). This will see water services move to a business-as-usual activity within MCERT

including ongoing monitoring of councils' implementation of water services delivery plans, and system stewardship.

Thank you for contributing to the successful implementation of Local Water Done Well. You may wish to share this correspondence with your elected members.

Yours sincerely



Hon Simon Watts
Minister of Local Government

Appendix 7. Prioritised problems

The table below shows problems identified with water demand management in the district, order by priority. In a workshop on 10 December 2025, PCG members (see Appendix 1) prioritised these problems through a voting exercise, with high seasonal peak demand, high expected growth and public health risks being the top three issues.

Table 51: Prioritised problems with current water demand management in the district

Priority	Problem and explanation
1	High seasonal demand, peaks from irrigation and visitors
	High growth expected in many networks
	Public health risks
2	No incentives to reduce consumption
	High uncertainty on split of consumption & leakage
	Consent non-compliance in some networks
3	Cannot measure, monitor or manage leakage effectively
	Regulatory compliance pressure
	Energy and carbon cost of high-water demand
4	Widespread high pressure in some schemes
5	Constrained funding environment limits ability to respond with a capital solution
	Equity issue
6	Climate change expected to make it worse
	Insufficient capacity under current peak demands
	… and under projected demands it's even worse

Appendix 8. High pressure networks

The figures below are high pressure network maps for the networks with widespread high pressure – Arthur's Point, Hāwea, and Queenstown from respective 2025 System Performance Assessment Reports.

Figure 42: High Pressure Network Maps – Arthur's Point

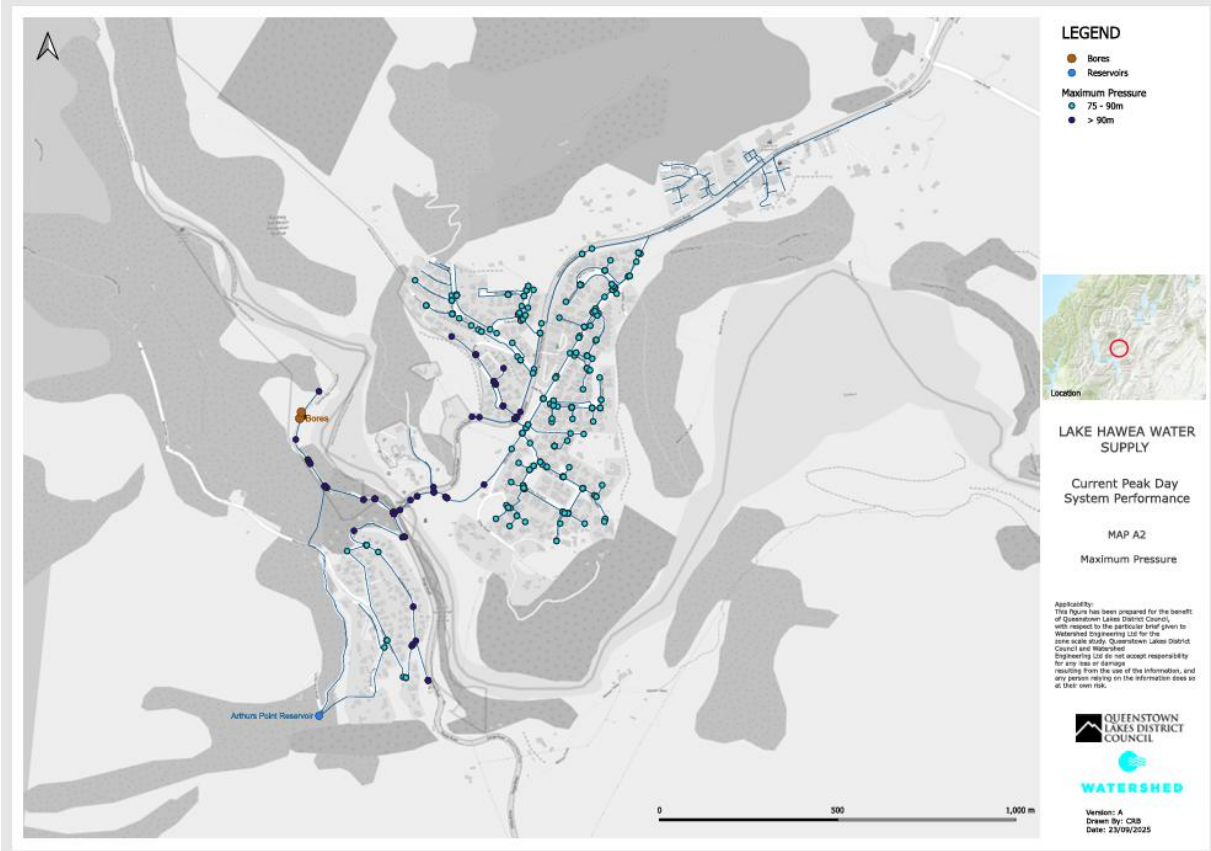


Figure 43: High Pressure Network Maps – Hāwea

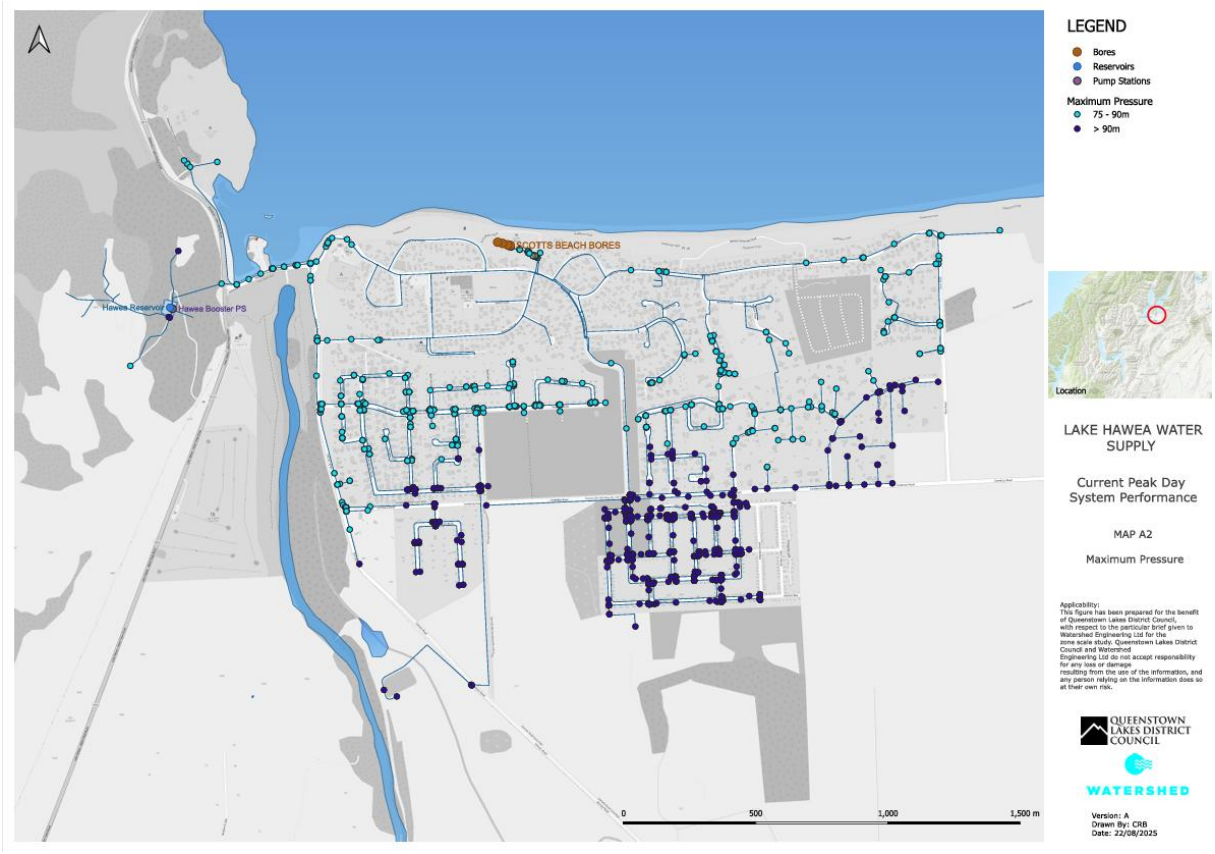
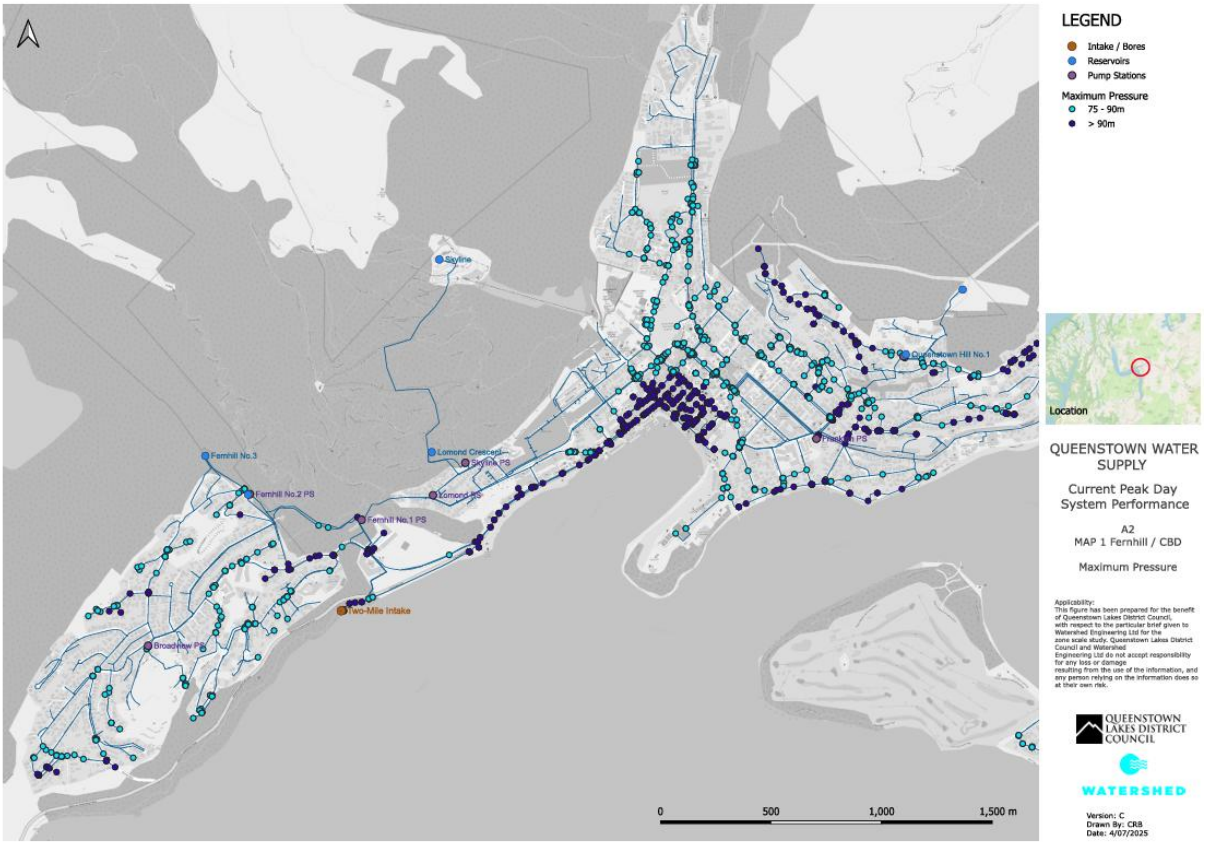


Figure 44: High Pressure Network Maps – Queenstown



Appendix 9. Initial long-list early screening

Table 52 outlines the initial long-list of 56 measures, prior to early screening. It describes the measures and shows if a measure is (1) aligned with at least one problem statement, and (2) passes all pre-screen filters. If the measure is excluded, the rationale for 'no' is outlined.

Figure 45: Legend for table

Problem Statement 1	Problem Statement 2	Problem Statement 3
Peak demand exceeds infrastructure capacity	No incentives for efficient water use and inequitable cost distribution	Limited ability to understand and manage water loss and consumption
Screen 1	Screen 2	Screen 3
Is this the best measure of similar measures?	Applicable to QLDC context?	Get the basics right first

Table 52: All measures screening

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
1	All Customers		**Customer communication**	Customer communication programme to raise awareness, improve water literacy, change customer water use behaviour and build a water conservation ethic. The programme can be extended to incorporate new resources from Smart Water Australia; e.g., a water use calculation tool similar to Watercare's.[77] Possible future extension with Advizo and customer nudge behaviour if AMI implemented. Gamification e.g., competitions between neighbourhoods (using SAMs data) and businesses of similar type (need business water use benchmarking).	✓					

[77] https://www.smartwatermark.org/watercalculator/NZ/

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
2	All Customers		**Revised outdoor water use restrictions (Water Watchers Plan)**	Revise the existing water restrictions framework to focus on guidance/rules for wise water use covering all customer sectors. Model on Tauranga City Council's Water Watchers Plan introduced in 2021 to encourage wise use of water outdoors all year round.[78] The Water Watchers plan provides clarity about how customers (community, residential, business) can use water in any given month. People, businesses or community groups that have special water requirements can apply for an exemption using a Smart Water Plan application form.	✓		✓			
3	Non-residential		**Non-residential water efficiency programme**	Programme including benchmarking of business consumption, appointment of an account manager to conduct site visit assessments and work with large users to improve their water efficiency. Also to start with council facilities water use.	✓		✓			
4	Non-revenue water		**Improve District Metered Area Monitoring and Proactive Leak Detection and Repair**	Improve the DMAs (renew meters if necessary, install new meters to divide large DMAs into smaller areas). Capture system parameters for each DMA and actively use night flow monitoring to prioritise leak detection surveys to identify, locate, diagnose and repair network and private leaks. Improve collection, handling, analysis and presentation of leakage data. Improve leak repair time and processes			✓			
5	Non-revenue water		**Pressure management for the network**	Design and install cost effective pressure management areas to reduce bursts, extend pipe life and reduce leakage volume. Investigate potential for Pressure Transience Monitoring / calm networks.			✓			

[78] https://www.tauranga.govt.nz/services/water/how-to-save-water/water-watchers

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
6	Non-revenue water		**Smart networks with Internet of things (IoT) connectivity and enabled devices**	This measure covers the development of smart networks with IoT connectivity and enabled devices (e.g. with Sotto® vibration sensors integrated into digital meters). Smart networks will identify more leaks (especially smaller leaks that may have previously been only "background leakage") more often and will require significant increases in funding and resourcing for leak location and repairs (including securing sustainable contracts with leak detection service companies). Sotto has detected vibration signals at 80m and, when leaks are detected on multiple sensors simultaneously, can support triangulation to approximate the leak location. Council currently trialling in Glenorchy.			✓			
7	All Customers		**Manual / analogue meters**	Programme to install manual read (analogue) meters on all remaining customers and schemes. Plan and undertake stakeholder and customer engagement. Market engagement and procurement planning. Business transformation planning and preparations.			✓			
8	All Customers		**Automated Meter Reading (AMR) meters**	Programme to install digital meters with automatic meter reading on all remaining customers and schemes. Plan and undertake stakeholder and customer engagement. Market engagement and procurement planning. Business transformation planning and preparations.			✓			
9	All Customers		**Advanced Metering Infrastructure (AMI)**	Extend AMI metering to all remaining customers and schemes. Develop the smart solution design using the learnings from the installations in Glenorchy, Luggate and Hāwea. Plan and undertake stakeholder and customer engagement. Market engagement and procurement planning. Business transformation planning and preparations.	✓		✓			
10	Residential		**Rainwater tank incentive programme for residential**	Provide an incentive for residents to purchase and install a rainwater tank at a reduced price (at least 1000 L (garden only) or 2000L (if includes toilet flushing).	✓					
11	All Customers	Limited potential for QLDC	**Partner with energy efficiency**	Partner with EECA (Energy Efficiency & Conservation Authority) on hot water use efficiency through their energy efficiency work.				x	x	

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
12	Commercial	High cost, not the best measure for commercial	**Commercial Bathroom Retrofit**	Rebate of up to $20,000 per building in an 50/50 cost sharing arrangement. Focus on replacement of single flush with dual flush toilets, and water efficient tapware, urinals, and showerheads	✓			x		
13	Non-residential	Mandatory target requires District Plan change. Difficult to require something above the building code.	**Mandatory water efficiency for new non-residential construction (NABERS NZ Water)**	Indoor water use targets for all new commercial development (potential to be extension of the NabersNZ Water programme). Cover efficiency of indoor fittings (taps, showerheads and toilets) including urinals required in new commercial development.	✓	✓			x	
14	Commercial	High cost, not the best measure for commercial (economic rationale)	**Commercial Laundry new machines**	Provide a rebate for the installation of a high efficiency commercial washer e.g. Hydrofinity Commercial Washing Machines (laundromats). Rebate amounts would reflect the incremental purchase cost. Programme will be shorter lived as it is intended to be a market transformation measure and eventually would be stopped as efficient units reach saturation.	✓				x	
15	Non-residential	Not as effective as a non-residential water efficiency programme	**Water Efficiency Management Plans (WEMP)**	The requirement for businesses above a certain water use to prepare a WEMP. Council leading by example for the council facilities followed by voluntary business participation.	✓		✓	x		
16	Commercial	Limited potential for QLDC, very few high-rise	**Private sector cooling tower tune-up and submetering rebate**	Check of cooling tower operation plus schedules of maintenance and recommendations for action or improved scheduling to improve water use efficiency. Also offer a rebate to buildings to install submeters to measure the make-up and bleed-off water of the facility cooling towers. Provide educational brochures and a phone contact of a knowledgeable person to provide conservation information. (Estimates for HVAC water use range from 9% to 21% - the higher figure from BRANZ study on commercial offices).			✓		x	
17	Commercial	Limited potential for QLDC, very few high-rise	**Voluntary high-rise commercial audit and retrofit**	High-rise water users (i.e. office buildings) above a prescribed threshold will be offered a free water audit with recommendations made on options with an	✓	✓	✓		x	

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
				approved pay-back period. Consider including funding assistance to offset costs of water efficiency improvements.						
18	Non-residential		**Voluntary hotel audit**	Hotels offered a free water audit with recommendations made on options with an approved pay-back period.	✓	✓	✓			
19	Commercial	Advanced measure, not the best of similar measures	**Smart rinse retrofit**	Free replacement of prerinse spray valves with water efficient Smart Rinse valves in restaurants, cafés, takeaway shops.	✓			x		x
20	Non-residential		**Voluntary open space irrigation efficiency audit and retrofit**	Irrigation water users (above a prescribed threshold, could be land area) will be offered a free audit with recommendations to implement options with an approved pay-back period.	✓		✓			
21	Non-residential		**Mandatory open space irrigation efficiency audit and retrofit**	Irrigation water users above a prescribed threshold will be required to undertake a mandatory audit and retrofit of options with an approved pay-back period. Rebate would be provided to offset costs.	✓		✓			
22	Commercial	Not as effective as the non-residential water efficiency programme	**Innovation fund for bespoke activities for high water using business customers**	Innovation fund available to high water using businesses to work with service providers to improve their processes in innovative ways. Recognition and case studies of the savings approach then disseminated.	✓		✓	x		
23	Commercial	Not as effective as the non-residential water efficiency programme	**Annual awards programme for water efficient business customers**	Sponsor an annual awards programme for businesses that significantly reduce water use. They would receive a plaque/recognition.		✓		x		

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
24	Non-residential	Advanced measure	**Non-potable water for construction**	Install bulk supply points for non-potable water for use in construction industry and other non-drinking purposes. NZ examples: Watercare,[79] Tauranga had a year-round ban on using potable water for dust suppression.	✓					
25	Non-residential		**Rainwater Tank Rebate programme for non-residential**	Provide incentive for installation of large rainwater catchment systems that connect to toilets and outdoor non-potable water use. This could involve rebates, grants and other cost share methods. Might require simultaneous installation of water efficient landscaping to assure that amount of water collected can last into the peak irrigation season. Dual benefit for earthquake resilience.	✓					
26	Non-revenue water	QLDC need to get the basics right first for leakage	**Thermal imaging with geospatial mapping**	Adopt emerging thermal mapping technology (using Unmanned Aerial Vehicles (UAVs) and thermal camera) combined with hydraulic modelling and pressure logging to remotely identify potential leaks and present the findings in geospatial data mapping (e.g. points of interest from thermal mapping, leak confirmed by site inspection, point requiring further investigation and leak point repaired). Hydraulic modelling used to identify areas to target for thermal mapping e.g. areas of high nighttime pressures. Case Study : Waipā District Council.			✓			x
27	Council/QLDC		**Mandatory council facility water audits**	All council facilities (public toilets, council offices, community halls, swimming pools etc.) to be required to undertake a water audit and to implement measures with an approved payback period.	✓		✓			
28	Council/QLDC		**Council open space irrigation optimisation**	Work with Council Parks to develop a consistent and exemplary approach for irrigation during restrictions, especially timing of watering, no watering of hard surfaces, no watering of non-essential turf e.g., medians.	✓					

[79] https://www.watercare.co.nz/Water-and-wastewater/Non-potable-water

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
29	Council/QLDC		**Council open space irrigation efficiency audit and retrofit**	Targeted at Council owned parks and reserves to improve turf management and reduce water use. The actions include adding irrigation controllers, irrigation equipment repair and update, metering of the water supplied for irrigation (most important).	✓		✓			
30	Council/QLDC		**Operational water use**	Investigate opportunities to improve operational water use efficiency (e.g. at pump stations, water treatment plants, change hydrant testing programme to include air scouring not hydrant flushing) and identify changes in operational water use practices that tie in with the restriction levels (e.g. stop visible non-essential water use during restrictions to show the public that council also restricts their water use).	✓		✓			
31	Parks	Advanced measure	**Stormwater harvesting for non-potable use**	Develop demonstration site for stormwater harvesting for non-potable use (e.g. irrigation). Integrated water approach with benefits for stormwater also.	✓		✓			x
32	Residential		**Dual Flush Toilet Rebate**	Rebate for replacing single-flush toilets in single family residential homes with 4.5/3 litre dual flush toilets	✓					
33	Residential		**Residential outdoor water efficiency education programme**	Free residential outdoor water efficiency education programme for all homes (Single Family and Multi Family). Programme could continue efforts including poster contests, speakers to community groups, conservation hotline, website, video loan, radio and television time, demonstration gardens and printed educational material such as bill inserts, etc. Also, social media such as cell phone apps, Facebook, interactive kiosk with view screen, etc.	✓					
34	Single Family Residential	District Plan change will be complex and advanced measure	**Rainwater Tank requirement for new homes**	All new homes would need a large rainwater catchment of at least 2m³ (2m³ tanks generally don't require building consent if for outdoor use only). Similar to Kapiti Coast District Council's District Plan requirements for either rainwater or greywater for new homes. Might require simultaneous installation of water efficient landscaping to assure that amount of water collected can last into the peak irrigation season.	✓				x	x

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
35	Single Family Residential	Advanced measure and difficult to introduce building requirements at a district level	**Mandatory indoor water use targets for all new residential construction**	Indoor water use targets for all new construction enforced through building compliance inspections. Cover efficiency of indoor fittings (taps, showerheads and toilets), water metering. Plus leak detection for large buildings > 3 stories or > 300m². Appliance efficiency (washing machine and dishwashers) regulated through Water Efficiency Labelling Scheme. International case studies include BASIX in New South Wales, Australia and Water Sense homes in the US.[80],[81] In NZ there is the Homestar Technical manual under the green building council and Auckland example of water efficient apartments.[82], [83]	✓					x
36	All Residential	Already have some low water eco homes	**Pilot low water use homes**	Pilot low water use homes for the community to view and purchase. Model on the Watercare partnership with Fletcher Living for the 1.5 degree home which has the objective of meeting the Ministry for Business Innovation and Employment's Building for Climate Change Programme proposed mandatory water use cap in new builds of 75 Litres/person/day (L/p/d) by 2035, plus innovative water reuse including rainwater and possibly greywater.	✓		✓	x		
37	Residential		**Indoor water audits for targeted high use residential customers with follow-up**	Metering dependent. Indoor water audits for existing residential customers with high use. May include rebate of efficient shower heads, aerators, toilet devices.			✓			

[80] https://www.planningportal.nsw.gov.au/basix/about-basix/getting-basix-certificate

[81] https://www.epa.gov/watersense/watersense-labeled-homes

[82] https://www.nzgbc.org.nz/Category?Action=View&Category_id=305

[83] https://www.waterforlife.org.nz/water-efficient-apartments

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
38	Residential		**Water Efficient Landscape Design Standards**	Develop and enforce Water Efficient Landscape Design Standards for new residential. Standards specify that development projects subject to design review be landscaped according to climate appropriate principles, with drought tolerant plant selection, efficient irrigation systems and smart irrigation controllers. Would need to work together with nurseries to ensure that they can promote drought tolerant plants and have sufficient seedlings available. Central Otago District Council have done this.	✓					
39	Multi Family Residential	Not necessary to have a separate measure for this type of residential customer for QLDC	**Indoor water surveys for targeted high use multi-family residential**	Indoor water surveys for existing multifamily residential customers (2 units or more). Target those with high water use and provided a customized report to owner. Usually combined with outdoor surveys (see Irrigation Measures) and sometimes with single family surveys. Sydney Strata Fix includes a free desktop assessment			✓		x	
40	Residential		**Rebate for the installation of a 4-star rated clothes washing machine**	Rebate for the additional cost difference for a 4-star (of better) rated clothes washing machine (front loader) compared to a high water use washing machine (low water start top loader).	✓	✓				
41	Residential		**Efficient showerhead rebate**	Provide a rebate for high efficiency showerheads (this could be extended to include taps, tap aerators). OR Showerhead swap programme for residential properties to incentivize them to switch to a waterwise showerhead and save up to 20,000 litres of water each year. Exchange up to two of your old showerheads for new water efficient WELS 4-star rated models (Perth case study) Showerhead swap programme trial; free 9L/minute showerhead with aerator fitting provided to first 150 eligible households (Tauranga case study)	✓					

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
42	Single-Family Residential	Advanced measure	**Greywater system rebate**	Rebate for Hydraloop greywater recycling systems. Hydraloop collects, treats and re-uses the water from showers, baths, washers and dryers, heat pumps and air conditioning units. Depending on the configuration and user behavior up to 45% of total in house water consumption can be saved. Hydraloop water is clean, clear, safe, and disinfected. It can be re-used for toilet flushing, laundry, garden irrigation and topping up swimming pools.[84]	✓					x
43	All Residential	Advanced measure	**Greywater system requirement for new homes**	Same as above, but a requirement.	✓					x
44	Residential		**Free Waterline service to homes**	Waterline offers a free indoor home visit service on request. The Waterline Advisors can check for leaks (they won't repair pipe leaks), teach customers how to fix a leaking tap, show them how to read their water meter and give them suggestions on how to conserve water including providing a free shower timer. They will also give advice on other water-related matters such as gully traps. Modelled after Tauranga Waterline service.[85]			✓			
45	All Residential	People under financial hardship most likely to be in a rental situation not owner-occupied	**Plumbing Assist**	Plumbing Assist programme for free essential plumbing work for people under financial hardship. Participation in the program includes the following, for owner-occupied, private property: 1) a free water leak audit for inside the house 2) repair or replacement of inefficient or leaking water fittings and fixtures (limited to minor repairs only). Modelled on Gold Coast programme, see case study. Also Ruapehu District Council case study for $200 plumbing assist in Ohakune.	✓				x	

[84] https://www.smarterhomes.org.nz/smart-guides/water-and-waste/re-using-greywater/

[85] https://www.tauranga.govt.nz/council/water-services/waterline/waterline-home-advisory-service

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
46	Residential		**Outdoor water audits for residential**	Audit of outdoor water use especially irrigation, potentially also a rebate off minor sprinkler repairs and recommended products, which may go towards the purchase and installation of a weather-based automatic irrigation system controller. Before metering, target those with expected high water use (large green lots, swimming pools) and provide a customized report to owner. Metering dependent to target on actual water use.	✓					
47	All Residential	Not as effective as other measures for this sector	**DIY Water Savings Kits**	Provide water savings kits at council buildings for pick up and installation by homeowners or their plumber. To include dye tablets for testing for toilet leaks, flow regulators for installation on taps, and new tap washers for use on leaking taps.			✓	x		
48	All Residential	New developments likely to be high quality, low water savings potential	**Require Hot Water on Demand/Structured Plumbing in New Developments**	Work with developers to equip new homes or buildings with efficient hot water on demand systems such as structured plumbing systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to the water heater or to move the water heater into the centre of the house and/or reduce hot water waiting times by having an on-demand pump on a recirculation line.					x	
49	All Residential	Not as effective as other measures for this sector	**Hot water recirculator rebate for existing homes**	Provide a rebate for homes to install a hot water system recirculation device or efficient hot water on demand systems. These systems use a pump placed under the sink to recycle water sitting in the hot water pipes to reduce hot water waiting times by having a an on-demand pump on a recirculation line. Can be installed on kitchen sink or master bath, wherever hot water waiting times are more than 1/2 minute. Requires an electrical outlet under the sink, which is not common on older home bathrooms but is on kitchen sinks.				x		
50	Residential		**Soil moisture sensor rebate**	Rebate offered for the purchase of a soil moisture sensor for control of automatic watering systems			✓			

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
51	All Residential	Address this with leak repair rebate policy if volumetric charges are introduced, e.g. CCC	**Pipe leak repair financial assistance**	Provide financial assistance for residential customers to repair leaks in private property pipes between the property boundary and the house (may be visible leaks or hidden leaks identified through metering or SAMs monitoring). Could be modelled after the Irish Water "First Fix Free" programme which all residential properties qualify for (including mixed use properties that are predominantly residential). The Irish First Fix Free programme covers a free investigation if a residential water meter has indicated a possible leak on their external supply pipe plus a free repair of the leak if the water leak is identified on the external supply pipe. [86]			✓			
52	All Residential	Not as effective as other measures for this sector	**Car wash coupon**	Provide coupons for saving water and money at a certified water smart car wash. Coupons may only be redeemed at a participating retailer. Coupons could be presented at the time of purchase. High participation during drought in US.[87]				x		
53	All Customers		**Work with retailers to provide drought tolerant planting and efficient irrigation**	Work with nurseries, irrigation retailers to ensure there are adequate supplies of water efficient irrigation, drought tolerant planting to enable customers to adopt the water efficient landscaping design standards (design standards are a prerequisite for this measure).	✓					
54	Schools		**Smart schools water programme**	Model after the Schools Water Efficiency programme (SWEP) run by the Victorian Government initiative. The programme provides access to subsidized data loggers for schools to track their water usage using data logger technology, a dedicated website, specialist advice and curriculum materials for monitoring and managing water consumption and continuing the water efficiency education of school children. The savings come from finding and fixing leaks early, and identifying faulty appliances and inefficient practices that schools can change.	✓		✓			

[86] https://www.water.ie/help/leaks/first-fix-free

[87] https://www.snwa.com/rebates/carwash/index.html, https://smartwash.nz/smart-environment/

#	Sector	Rationale for 'No' screening	Measure	Measure description	Prob Stmts			Filters		
					1	2	3	1	2	3
				Provide funding/rebate for the installation of large rainwater tanks in schools for use in irrigation plus potentially toilet and urinal flushing.						
55	Schools		**Mandatory school water audits**	Audit of schools and recommendation for retrofit. Cost of retrofit would need to be met by Government. This measure would build on the Smart Schools Water programme with a full Smart Water audit of each school.	✓		✓			
56	Schools	Not as effective as other measure for this sector	**Rainwater for schools**	Provide funding for the installation of large rainwater tanks in schools for use in irrigation plus potentially toilet and urinal flushing.	✓			x		

Appendix 10. Long-list evaluation: non-metering measures

The table below outlines the MCA scoring for the non-metering measures.

Table 53: MCA for non-metering measures

#	Sector	Measure Type	Measure Name	Measure Description	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank	Rationale / comments during or post workshop
29	Council /QLDC	Audit, retrofit and rebate	**Council open space irrigation efficiency audit and retrofit**	Targeted at Council owned parks and reserves to improve turf management and reduce water use. The actions include adding irrigation controllers, irrigation equipment repair and update, metering of the water supplied for irrigation (most important).	4	4	3	5	3.9	1	Community acceptance will be high for all QLDC/Council measures as customers see QLDC as leading by example and 'walking the talk'. Parks often has its own bores therefore metering is not essential for this, but customer perception remains therefore a worthwhile measure.
33	Residential	Comms	**Residential outdoor water efficiency education programme**	Free residential outdoor water efficiency education programme for all homes (Single Family and Multi Family). Programme could continue efforts including poster contests, speakers to community groups, conservation hotline, website, video loan, radio and television time, demonstration gardens and printed educational material such as bill inserts, etc. Also social media such as cell phone apps, Facebook, interactive kiosk with view screen, etc.	3	4	4	4	3.75	2	Highest rating for likely water savings out of the residential sector, as applies to all customers, unlike landscape design (new customers) and soil moisture sensors (small subset of customers who would adopt). Measures focused on outdoor water get the highest 'reduces peak demand'
3	All Customers	Efficiency codes and regulation	**Excess water use and enforcement**	Address extraordinary water use through updating the existing water restrictions framework and enforcing the bylaw. Could be modelled on Tauranga City Council's Water Watchers Plan introduced in 2021 to encourage wise use of water outdoors all year and effective enforcement. The Water Watchers plan provides clarity about how customers (community, residential, business) can use water in any given month. People, businesses or community groups	3	5	3	4	3.7	3	Restrictions are efficient at reducing peak demand compared to other 'all customer' measures. Partnered with metering this becomes an extremely effective measure. Updated post-workshop to include enforcement.

#	Sector	Measure Type	Measure Name	Measure Description	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank	Rationale / comments during or post workshop
				that have special water requirements can apply for an exemption using a Smart Water Plan application form.							
51	Residential	Audit, retrofit and rebate	**Pipe leak repair remission policy**	Provide financial assistance for residential customers to repair leaks in private property pipes between the property boundary and the house (may be visible leaks or hidden leaks identified through metering). Could be modelled after the Irish Water "First Fix Free" programme which all residential properties qualify for (including mixed use properties that are predominantly residential). The First Fix Free programme covers a free investigation if a residential water meter has indicated a possible leak on their external supply pipe plus a free repair of the leak if the water leak is identified on the external supply pipe. https://www.water.ie/help/leaks/first-fix-free/	4	3	3	5	3.65	4	Added this measure into Long List Evaluation during workshop (originally screened out). High community acceptance and can drive high water savings as schemes have suspected high levels of leakage.
21	Non-residential	Audit, retrofit and rebate	**Mandatory open space irrigation efficiency audit and retrofit**	Irrigation water users above a prescribed threshold will be required to undertake a mandatory audit and retrofit of options with an approved pay-back period. Rebate would be provided to offset costs.	4	3	4	3	3.55	5	Hotels and schools tend to irrigate quite a lot. Hence, this helps reduce peak demand and drives likely water savings
1	All Customers	Comms	**Customer communication**	Customer communication programme to raise awareness, improve water literacy, change customer water use behaviour and build a water conservation ethic. The programme could incorporate resources from Smart Water Australia; e.g. a water use calculation tool similar to Watercare's https://www.smartwatermark.org/watercalculator/NZ/. Possible future extension (metering dependent) with customer portal and customer nudge behaviour if AMI implemented. Gamification (metering dependent) eg	3	5	2	4	3.4	6	Likely water savings from voluntary measures will not be as effective if metering and volumetric charging are not involved.

#	Sector	Measure Type	Measure Name	Measure Description	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank	Rationale / comments during or post workshop
				competitions between neighbourhoods and businesses of similar type.							
28	Council /QLDC	Comms	**Council open space irrigation optimisation**	Work with Council Parks to develop a consistent and exemplary approach for irrigation during restrictions, especially timing of watering, no watering of hard surfaces, no watering of non-essential turf e.g. medians.	3	4	2	5	3.35	7	Community acceptance high for all QLDC/Council measures as customers see Council lead by example. Parks has its own bores often, therefore metering not essential but helps with customer perception.
4	Non-revenue water	Network and operational loss management	**Improve District Metered Area Monitoring and Proactive Leak Detection and Repair**	Improve the DMAs (renew meters if necessary, install new meters to divide large DMAs into smaller areas). Capture system parameters for each DMA and actively use night flow monitoring to prioritise leak detection surveys to identify, locate, diagnose and repair network and private leaks. Improve collection, handling, analysis and presentation of leakage data. Improve leak repair time and processes	5	3	1	5	3.3	8	Increases ability to monitor leaks but doesn't contribute much to reducing peak demand. Most potential for water savings as it's 'all encompassing'
38	Residential	Efficiency codes and regulation	**Water Efficient Landscape Design Standards (and working with retailers)**	Develop and enforce Water Efficient Landscape Design Standards for new residential. Standards specify that development projects subject to design review be landscaped according to climate appropriate principles, with drought tolerant plant selection, efficient irrigation systems and smart irrigation controllers. Would need to work together with nurseries to ensure that they can promote drought tolerant plants and have sufficient seedlings available.	2	5	3	3	3.25	9	Combined to include #53 (Work with retailers to provide drought tolerant planting and efficient irrigation)
24	Non-residential	Source substitution	**Non-potable water for construction**	Install bulk supply points for non-potable water for use in construction industry and other non-drinking purposes. NZ examples: Watercare (https://www.watercare.co.nz/Water-and-wastewater/Non-potable-water), Tauranga have	3	3	3	4	3.2	10	Potable water use for dust suppression is quite common in NZ, so value in installing bulk supply points.

#	Sector	Measure Type	Measure Name	Measure Description	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank	Rationale / comments during or post workshop
				a year-round ban on using potable water for dust suppression.							
55	Schools	Audit, retrofit and rebate	**Mandatory school water audits**	Audit of schools including outdoor and recommendation for retrofit. Cost of retrofit would need to be met by Government. This measure would build on the Smart Schools Water programme with a full Smart Water audit of each school	3	3	2	5	3.1	11	Hotels and schools tend to irrigate quite a lot. Hence, this helps reduce peak demand and drives likely water savings
18	Non-residential	Audit, retrofit and rebate	**Voluntary hotel audit**	Hotels offered a free water audit with recommendations made on options with an approved pay-back period.	2	3	3	4	2.95	12	Hotels and schools tend to irrigate quite a lot. Hence, this helps reduce peak demand and drives likely water savings. However as mentioned voluntary measures are less effective than mandatory.
5	Non-revenue water	Network and operational loss management	**Pressure management for the network**	Design and install cost effective pressure management areas to reduce bursts, extend pipe life and reduce leakage volume. Investigate potential for Pressure Transience Monitoring / calm networks.	3	3	2	4	2.9	13	Pressure management can help reduce peak demand. Does not score aas well on community acceptance as can impact people's flow rates/private pressure.
27	Council /QLDC	Audit, retrofit and rebate	**Mandatory council facility water audits including operational use**	All council facilities (public toilets, council offices, community halls, swimming pools, wastewater treatment plants etc.) to be required to undertake a water audit and to implement measures with an approved pay back period.	2	3	2	5	2.85	14	Community acceptance high for all QLDC/Council measures as customers see Council lead by example. Extended to include operational water use
54	Schools	Comms	**Smart schools water programme**	Model after the Schools Water Efficiency programme (SWEP) run by the Victorian Government initiative. The programme provides access to subsidized data loggers for schools to track their water usage using data logger technology, a dedicated website, specialist advice and curriculum materials for monitoring and managing water consumption and continuing the water efficiency education of	2	3	2	5	2.85	14	Schools has been separated as there is value in educating the young customers - this has a flow on effect. Also because non-residential is also currently non-metered. Cost effectivness of 'smart schools' is the highest due to young customers coming home and 'spreading the word'.

#	Sector	Measure Type	Measure Name	Measure Description	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank	Rationale / comments during or post workshop
				school children. The savings come from finding and fixing leaks early, and identifying faulty appliances and inefficient practices that schools can change. Provide funding/rebate for the installation of large rainwater tanks in schools for use in irrigation plus potentially toilet and urinal flushing.							
30	Council /QLDC	Network and operational loss management	**Operational water use**	Investigate opportunities to improve operational water use efficiency (e.g. at pump stations, water treatment plants, change hydrant testing programe to include air scouring not hydrant flushing) and identify changes in operational water use practices that tie in with the restriction levels (e.g. stop visible non-essential water use during restrictions to show the public that council also restricts their water use).	2	4	1	5	2.8	16	Community acceptance high for all QLDC/Council measures as customers see Council lead by example.
6	Non-revenue water	Network and operational loss management	**Smart networks with IoT connectivity and enabled devices**	Development of smart networks with IoT connectivity and enabled devices (e.g. with Sotto® vibration sensors integrated into digital meters). Smart networks will identify more leaks (especially smaller leaks that may have previously been only "background leakage") more often and will require significant increases in funding and resourcing for leak location and repairs (including securing sustainable contracts with leak detection service companies). Sotto has detected vibration signals at 80m and, when leaks are detected on multiple sensors simultaneously, can support triangulation to approximate the leak location. QLDC currently trialling in Glenorchy.	2	2	3	4	2.7	17	Ability to reduce peak demand depends on how the network is managed and operated. E.g., could be a '3' today, but a '2' under future WSCCO structure. Reduced community acceptance from 5 to 4
20	Non-residential	Audit, retrofit and rebate	**Voluntary open space irrigation efficiency audit and retrofit**	Irrigation water users (above a prescribed threshold, could be land area) will be offered a free audit with recommendations to implement options with an approved pay-back period.	2	2	3	4	2.7	17	Voluntary not as effective as mandatory

#	Sector	Measure Type	Measure Name	Measure Description	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank	Rationale / comments during or post workshop
46	Residential	Audit, retrofit and rebate	**Outdoor water audits for residential**	Audit of outdoor water use especially irrigation, potentially also a rebate off minor sprinkler repairs and recommended products, which may go towards the purchase and installation of a weather-based automatic irrigation system controller. Before metering, target those with expected high-water use (large green lots, swimming pools) and provide a customized report to owner. Metering dependent to target on actual water use.	2	2	3	4	2.7	17	Measures focused on outdoor water score highest 'reduces peak demand'
3	Non-residential	Audit, retrofit and rebate	**Non-residential water efficiency programme**	Programme including working with large users (e.g., hotels) to improve their water efficiency, appointment of a account manager to conduct site visit assessments (audits) and benchmarking of business consumption (metering dependent).	3	2	2	4	2.65	20	Other councils have someone one staff who does site assessment of large users. The education piece of 'mandatory water efficiency for new non-residential construction;' can be pulled up into here. Likely water savings for non-res are 'medium' as res seemed like the core driver
53	All Customers	Comms	**Work with retailers to provide drought tolerant planting and efficient irrigation**	Work with nurseries, irrigation retailers to ensure there are adequate supplies of water efficient irrigation, drought tolerant planting to enable customers to adopt the water efficient landscaping design standards (design standards are a prerequisite for this measure).	*1*	*4*	*2*	*4*	*2.65*	*20*	Combined into #38 Water Efficient Landscape Design Standards
41	Residential	Audit, retrofit and rebate	**Efficient showerhead rebate**	Provide a rebate for high efficiency showerheads (this could be extended to include taps, tap aerators). OR Showerhead swap programme for residential properties to incentivize them to switch to a waterwise showerhead and save up to 20,000 litres of water each year. Exchange up to two of your old showerheads for	2	4	1	4	2.6	22	Cost effectiveness of shower heads is higher than toilets (measure #32) and customers save in electricity bill too.

#	Sector	Measure Type	Measure Name	Measure Description	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank	Rationale / comments during or post workshop
				new water efficient WELS 4-star rated models (Perth case study) Showerhead swap programme trial; free 9L/minute showerhead with aerator fitting provided to first 150 eligible households (Tauranga case study)							
37	Residential	Audit, retrofit and rebate	**Indoor water audits for targeted high use residential customers with follow-up**	Metering dependent. Indoor water audits for existing residential customers with high use. May include rebate of efficient shower heads, aerators, toilet devices.	2	2	2	4	2.4	23	Cost-effectiveness of residential-only audits and rebates is lower as only covering one sector.
10	Residential	Source substitution	**Rainwater tank incentive programme for residential**	Provide an incentive for residents to purchase and install a rainwater tank at a reduced price (at least 1000 L (garden only) or 2000L (if includes toilet flushing).	2	2	2	3	2.2	24	Does not score high for water savings or reducing peak demand, as rebate does not guarantee uptake rates for a relatively expensive item (in comparison, to e.g., showerhead)
32	Residential	Audit, retrofit and rebate	**Dual Flush Toilet Rebate**	Rebate for replacing single-flush toilets in single family residential homes with 4.5/3 litre dual flush toilets	1	3	1	4	2.1	25	Not as cost effective as shower rebate (measure #41)
40	Residential	Audit, retrofit and rebate	**Rebate for the installation of a 4-star rated clothes washing machine**	Rebate for the additional cost difference for a 4-star (of better) rated clothes washing machine (front loader) compared to a high water use washing machine (low water start top loader).	1	3	1	4	2.1	25	Does not score high for water savings or reducing peak demand, as rebate does not guarantee uptake rates.
50	Residential	Audit, retrofit and rebate	**Soil moisture sensor rebate**	Rebate offered for the purchase of a soil moisture sensor for control of automatic watering systems	1	2	2	3	1.95	27	Top 5 customers in Hāwea had leaks repaired in 2025, so there's an enormous amount of potential at the beginning of this programme. However, expensive and complex measure. Best to get the basics right first.
44	Residential	Communications	**Free Waterline service to homes**	Waterline offers a free indoor home visit service on request. The Waterline Advisors can check for leaks (they won't repair pipe leaks), teach	1	2	1	4	1.85	28	High palatability to customers, but requires high capacity uplift

#	Sector	Measure Type	Measure Name	Measure Description	Likely Water Savings	Likely Cost-Effectiveness	Reduce Peak Demand	Community Acceptance	MCA Score	MCA Rank	Rationale / comments during or post workshop
				customers how to fix a leaking tap, show them how to read their water meter and give them suggestions on how to conserve water including providing a free shower timer. They will also give advice on other water-related matters such as gully traps. Modelled after Tauranga Waterline service: https://www.tauranga.govt.nz/council/water-services/waterline/waterline-home-advisory-service							
25	Non-residential	Audit, retrofit and rebate	**Rainwater Tank Rebate programme for non-residential**	Provide incentive for installation of large rainwater catchment systems that connect to toilets and outdoor non-potable water use. This could involve rebates, grants and other cost share methods. Might require simultaneous installation of water efficient landscaping to assure that amount of water collected is capable of lasting into the peak irrigation season. DUAL benefit for earthquake resilience	1	2	1	3	1.65	29	High complexity - rainwater tanks needs to be consistently drawn down to make room, iotherwise not worthwhile.

Appendix 11. Long-list evaluation: metering measures

The table below outlines the MCA scoring for the metering measures.

Table 54: MCA for metering measures

		Evaluation Criteria – Benefits			Evaluation Criteria - Effort					
Measure name	**Measure description**	Safe and reliable water supply 40%	Efficient and sustainable water demand 40%	Fair and equitable charging for water supply 20%	Technical complexity **33%**	Inflexibility to change (e.g. charge options) **33%**	Likely whole-of-life costs **33%**	**MCA Score**	**MCA Rank**	**Rationale**
Manual / analogue meters	Programme to install manual read (analogue) meters on all remaining customers and schemes. Plan and undertake stakeholder and customer engagement. Market engagement and procurement planning. Business transformation planning and preparations.	3	3	3	5	2	3	6	**3**	Achieves benefits through ability to volumetrically charge and maintain better visibility of network. Limited by data collection frequency (monthly) as frequency limits leak detection and hides peak usage. Five (very low) for technical complexity as analogue meter is mechanical, not electronic. Two (high) for inflexibility to change as frequency of data collection limits available charging models, e.g., could not do temporal charging, daily usage charges. Three (medium) for whole-of-life costs as higher operational costs compared to AMI as intensive labour requirements to complete manual readings.
Automated Meter Reading (AMR) meters	Programme to install digital meters with automatic meter reading on all remaining customers and schemes. Plan and undertake stakeholder and customer engagement. Market engagement and procurement planning. Business transformation planning and preparations.	4	4	4	4	3	3	7	**2**	Achieves benefits through ability to volumetrically charge and maintain better visibility of network. Limited by frequency of data collection (normally monthly, can be daily) as compared to AMI which is hourly to real-time. Delayed leak detection but potential for good visibility of peak usage. Four (low) for complexity as AMR has one-way communication, where meters transmit data when technician passes by.

										Three (medium) for inflexibility to change as frequency of data collection somewhat limits available charging models. Three (medium) for whole-of-life costs as higher operational costs compared to AMI as requires walk by / drive by readings.
Advanced Metering Infrastructure (AMI)	Extend AMI metering to all remaining customers and schemes. Develop the smart solution design using the learnings from the installations in Glenorchy, Luggate and Hāwea. Plan and undertake stakeholder and customer engagement. Market engagement and procurement planning. Business transformation planning and preparations.	5	5	5	3	4	2	8	**1**	Achieves benefits through ability to volumetrically charge and maintain better visibility of network. Data is transmitted hourly or nearly in real-time meaning ability to identify leaks and peak usage is high. Three (medium) for technical complexity as AMI has two-way communication between meter and utility and is a digital computer platform. Four (low) for inflexibility to change with ability to remotely upgrade, apply multiple water charges and pull data in real-time. 2 (high) for whole-of-life-costs due to higher upfront capital cost of AMI.

Appendix 12. Water charge analysis

Final Water Supply Tariff – Options Paper attached separately

Appendix 13. Pressure Management Assessment

Pressure Management Assessment – Technical Memo and Pressure Zone Summary – Wānaka are attached separately.

Appendix 14. Estimation of avoided costs / benefits

This appendix outlines how cost inputs were determined to inform the BCR for each short-listed measure. Cost inputs cover indicative costs and estimation of avoided costs (or benefits).

Estimation of costs per measure

In the development of costings for the shortlisted measures, information has been applied from Council or other jurisdictions where available. Allowances have been made for:

- Initial planning and setup, e.g., issuing tenders, hiring more staff.
- Capital costs of actual measures, e.g., physically installing a meter or completing a water audit.
- Ongoing administration and operation (if applicable), e.g., educational campaigns.

The assumptions regarding costs and the volume of water savings for participating customers or applicable systems are outlined in the table below.

Table 55: Summary of measures costs and demand impacts

#	Measure Name	Initiation Cost	Initiation Year	Initiation Duration	Annual Admin	Unit Capital Cost per Customer	Unit Annual O+M cost per customer/ measure	Market Uptake	Assumed demand reduction	Demand Factor[88]
1	Universal Metering with 50-50 charge	$55,348,902	2028	7	$716,400	$2,290	$16	100.0%	20%	1.0
2	Council open space irrigation audit	$14,400	2027	1	$3,600	$10,000	$0	90.0%	20%	1.0
3	Residential outdoor education	$41,600	2027	1	$17,200	$0	$1	100.0%	5%	1.0
4	Excess water use and enforcement	$61,600	2027	1	$47,440	$0	$1	10.0%	20%	2.0
5	Pipe leak repair remission policy	$28,800	2028	1	$36,000	$1,000	$0	5.0%	33%	1.5
6	Mandatory irrigation audit for large users	$14,400	2027	1	$14,400	$10,000	$0	10.0%	15%	1.5
7	Customer communication	$123,200	2027	1	$48,800	$0	$2	20.0%	5%	1.0
8	Council open space irrigation optimisation	$14,400	2028	1	$14,400	$0	$0	100.0%	10%	1.0
9	Improve District Metered Area monitoring and proactive leak detection and repair	$1,968,900	2027	6	$636,000	$0	$440	100.0%	25%	1.0
10	Water efficient landscape design standards (and working with retailers)	$36,000	2027	2	$18,000	$500	$0	2.0%	20%	1.0
11	Non-potable water for construction	$152,000	2027	1	$0	$2,000	$0	2.0%	50%	1.0
12	Mandatory school water audits	$36,000	2027	1	$0	$20,000	$0	2.0%	10%	10.0
13	Voluntary hotel audit	$52,400	2027	3	$0	$26,499	$509	1.4%	10%	10.0
14	Pressure management for the network	$336,00	2028	5	$0	$250,000	$0	20.0%	20%	1.0

[88] Demand factor outlines the option's impact on demand reduction, where a factor of one is typical and more than one indicates the option targets high water users (e.g., hotels, schools).

#	Measure Name	Initiation Cost	Initiation Year	Initiation Duration	Annual Admin	Unit Capital Cost per Customer	Unit Annual O+M cost per customer/ measure	Market Uptake	Assumed demand reduction	Demand Factor[88]
15	Mandatory council facility water audits incl. operational use	$12,600	2027	1	$0	$26,499	$509	100.0%	10%	2.0

Estimation of benefits per measure

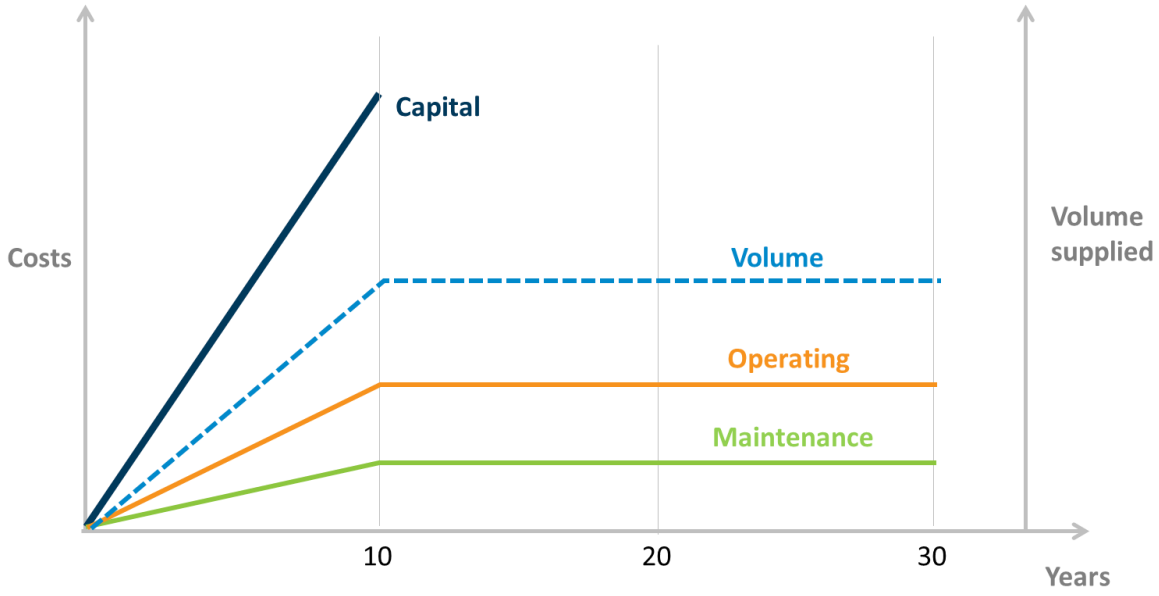
To determine the benefits, or avoided costs, of a measure, a Long Run Marginal Cost (LRMC) for water and wastewater was derived. The calculated LRMC are:

- Water: $5.60 per m^3
- Wastewater: $0.27 per m^3

The LRMC for water and sewerage systems is the cost that is avoided by m^3 of water supplied or wastewater collected by reducing water demand. For water systems – it has been assumed to be 50% of the levelised cost of estimates of capital cost (Level of Service and Growth) for the next 10 years. While capital costs have been limited to ten years, the water demand provided to customers who joined the system during that period, plus the operating and maintenance costs have been considered over a longer 30-year period, commensurate with the longer life of asset service life, as illustrated in Figure 46 below.

For wastewater systems (designed primarily on wet weather inflow and infiltration, and pollutant loads), the LRMC is based on the energy operating cost only. Water demand reduction is assumed to have no impact on wastewater capital costs.

Figure 46: Estimation of LRMC using ten-year capital supply cost window



Thus, the formula used for the estimation of the LRMC for water is:

$$LRMC_W = \frac{\sum_{t=0}^{10} C_{c,t} \times (1+r)^{-t} + \sum_{t=0}^{n30} C_{o,t} \times (1+r)^{-t} + \sum_{t=0}^{n30} C_{m,t} \times (1+r)^{-t}}{\sum_{t=1}^{n} V_t \times (1+r)^{-t}}$$

Where: $C_{c,t}$ = the capital costs incurred in year t

$C_{o,t}$ = the operating costs incurred in year t – specifically for those assets constructed in years 0 to 10

$C_{m,t}$ = the maintenance costs incurred in year t – specifically for those assets constructed in years 0 to 10

V_t = the volume of water supplied in year t specifically to service the growth in population over the ten year period of capital works being considered

The key assumptions underpinning the analysis are shown in the table below.

Table 56: Assumed LRMC calculation parameters

Item	Value
Assumed inflation rate:	2.6%
Assumed discount rate:	2.0%
Assumed maintenance and renewals cost	5.0%
Electricity costs - water ($/m3):	$0.12
Electricity costs - wastewater ($/m3):	$0.27

Appendix 15. Scenario Development Process

Six draft scenarios were initially developed: a basic, medium and high investment scenario, each developed with and without metering and volumetric charging.

Scenarios were ordered from 'do least' to 'do most', with the most cost beneficial measures (those with the highest BCRs) forming the foundation of each scenario. Higher investment scenarios build on this foundation by adding measures with lower, but still positive, BCR scores. Ease of implementation and actual impact on water use are also considered.

Do minimum

A do minimum scenario, continuing with status quo, was ruled out at this point as it is failing to meet the Council's core legislative requirements as set out in the Strategic Case.

Scenarios are set out in the table, with descriptions provided below.

Table 57: Six initial scenarios

#	Scenario	1	2	3	1A	2A	3A
1	Universal Metering with 50-50 charge				✓	✓	✓
2	Council open space irrigation audit		✓	✓		✓	✓
3	Residential outdoor education	✓	✓	✓	✓	✓	✓
4	Excess water use enforcement		✓	✓		✓	✓
5	Pipe leak repair remission policy			✓			✓
6	Mandatory open space irrigation efficiency audit and retrofit			✓			✓
7	Customer communication & awareness	✓	✓	✓	✓	✓	✓
9	Improve DMA monitoring and proactive leak detection and repair	✓	✓	✓	✓	✓	✓
12	Mandatory school water audits			✓			✓
13	Voluntary hotel audit			✓			✓
14	Pressure management for the network			✓			✓

Scenario descriptions

- **Scenario 1: Basic |** The foundational scenario prioritises measures that deliver strong cost-effectiveness with immediate impact and low implementation complexity. Leakage management sits at its core, reflecting the significance of network loss as a demand driver. Council-focused measures are included across all scenarios as Council leading by example is a programme objective in its own right. This scenario does not include metering, focusing instead on measures that can be implemented ahead of WSCCO establishment.
- **Scenario 1A: Basic, plus metering |** Builds on Scenario 1 with the addition of universal metering and volumetric charging (50-50 fixed and volumetric charge)**.** Metering significantly increases water savings by enabling consumption-based pricing and improved leak identification at the household level.
- **Scenario 2: Medium |** Extends the basic scenario by adding measures that target specific high-use behaviours – excess water use enforcement and Council irrigation audits. These measures have strong BCRs and add direct demand management capability beyond the foundational package.

- **Scenario 2A: Medium, plus metering |** The medium investment package with universal metering and volumetric charging added, combining behavioural measures with the pricing signal that metering enables.
- **Scenario 3: High |** The most comprehensive non-metering scenario, incorporating all measures with a positive BCR. This scenario maximises demand management reach across customer types and use cases.
- **Scenario 3A: High, plus metering |** The highest investment scenario, combining the full suite of demand management measures with universal metering and volumetric charging.

Cost-effectiveness scores

The cost-effectiveness results for the initial six scenarios are shown in Table 58. Results indicate that although leakage management and customer metering are more capital-intensive, scenarios that include these measures will have the greatest impact on water demand.

Table 58: Initial Scenario Analysis Results

Scenario	Total costs ($m2025)	Annual average water savings (m3)	Levelised cost ($m3)	Benefit-cost Ratio
Scenario 1 - Basic	$27.9	1,440,000	$0.69	4.89
Scenario 2 - Medium investment	$29.5	1,447,000	$0.73	4.64
Scenario 3 - High investment	$39.2	1,655,000	$0.89	3.77
Scenario 1a- Basic plus metering	$135.6	4,252,000	$1.23	2.74
Scenario 2a - Medium plus metering	$137.2	4,258,000	$1.24	2.72
Scenario 3a - High plus metering	$146.9	4,466,000	$1.28	2.63

These six initial scenarios were reviewed by the Project Control Group, who provided feedback and refined the scenarios (3.8).

Evaluation metrics / assumptions

Initial scenario analysis applied some different assumptions and metrics than the final scenarios (section 3.8). Where key assumptions vary from the final scenarios, they are outlined below:

- **Discount rate:** applied a discount rate of 4%, which is commonly used in economic evaluations to reflect a moderate 'real' cost of capital. The rate was subsequently updated to 2% for the final scenarios, in line with the New Zealand Treasury's guidance for non-commercial/ social proposals, with a recommended discount rate of 2%).
- **Long-run marginal cost:** of water supply is assumed to be $3.11 per m^3 and for wastewater $0.27 per m^3. The summed LRMC ($3.37 per m^3) is used in calculations. This is based on a discount rate of 4%.

Appendix 16. Development of water balance and demand forecasts

Water balance results

The resulting annual water balances are shown in Figure 47 and Figure 48 by customer category and system leakage. These results demonstrate the likely unique water use characteristics in each separate water scheme.

Figure 47: Current breakdown in demand

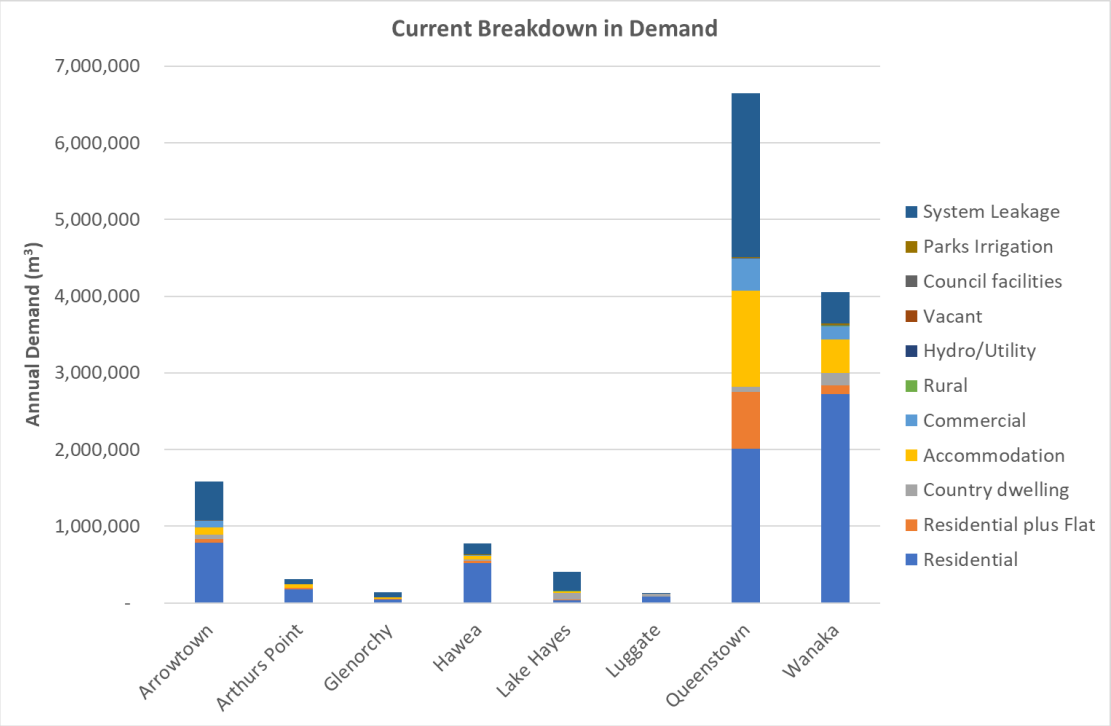
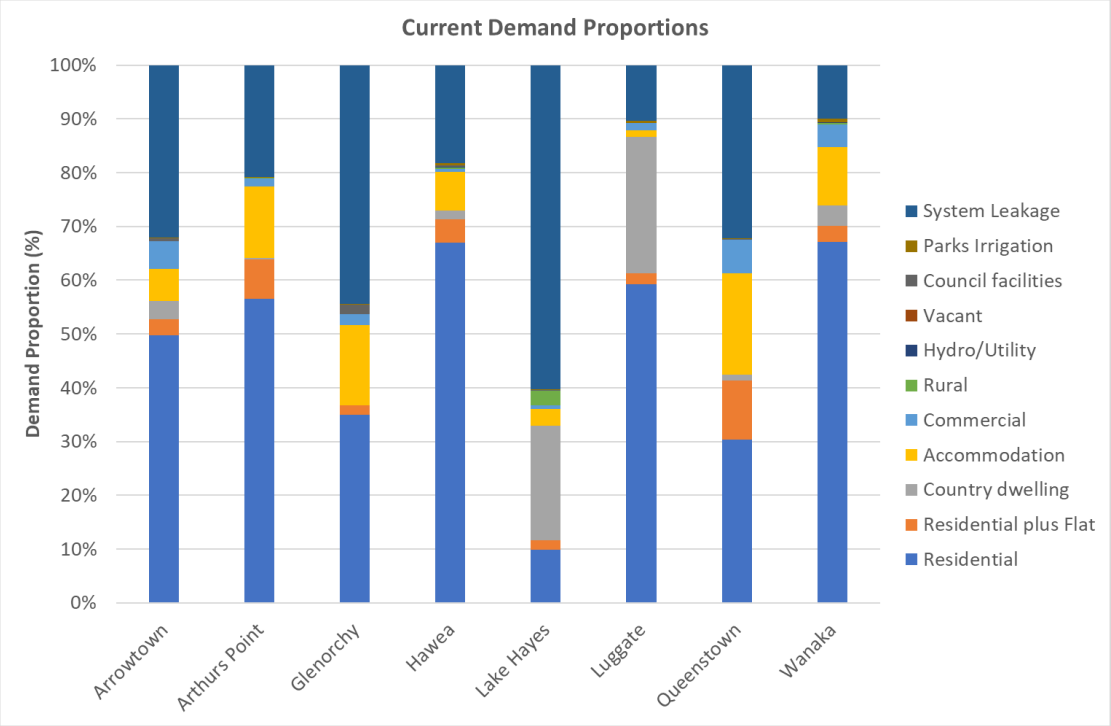


Figure 48: Current demand proportions



Population and demand forecasts

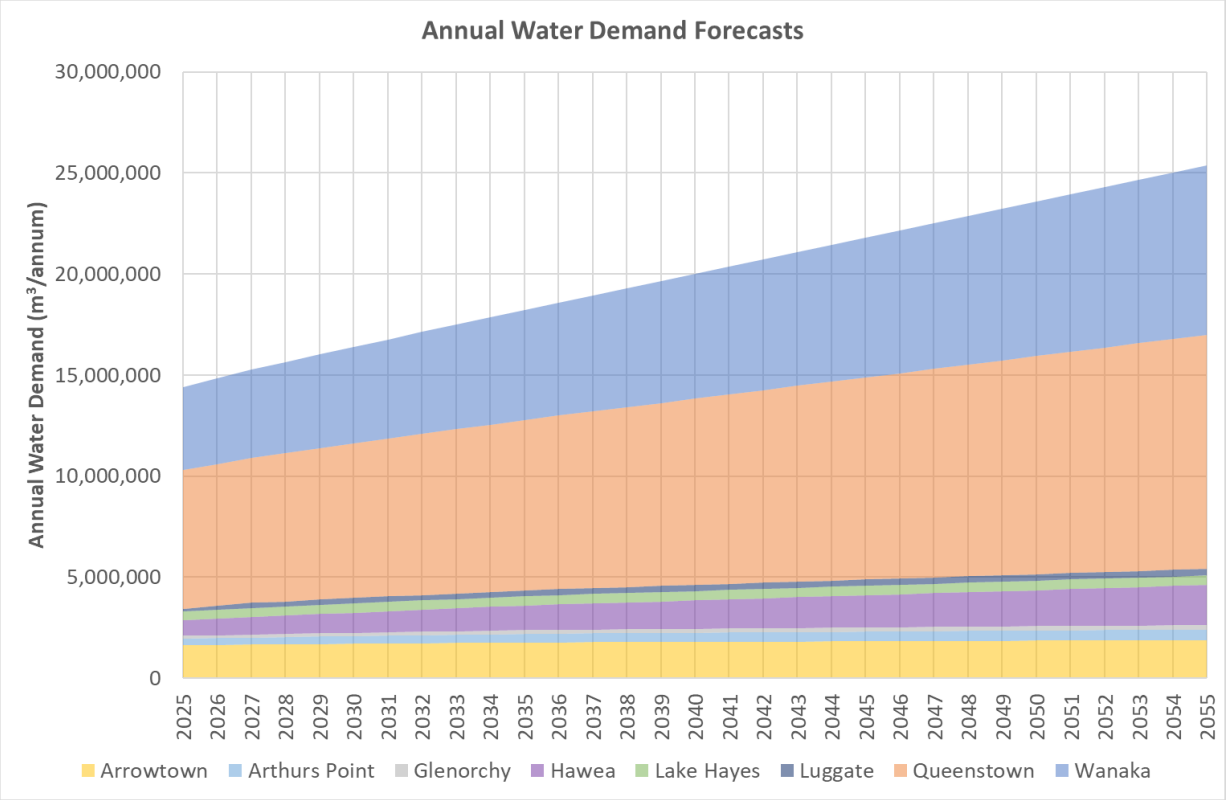
Forecasts of future baseline demand (no demand management intervention) have been prepared on the basis that future demand will grow in direct proportion to population growth. Population forecasts are provided in Table 59. The Luggate population forecast for 2027 and beyond has been adjusted to reflect the demand increase associated with the connection of the Wanaka Airport and Corbridge systems. These adjustments render the population forecasts for Luggate equivalent population only and should not be considered representative of the actual resident population.

Table 59 - Population forecasts (equivalent population for Luggate post 2026)

System	2025	2027	2035	2045	2055
Arrowtown	3,004	3,052	3,245	3,353	3,460
Arthurs Point	1,510	1,606	1,992	2,212	2,431
Cardrona	2,320	2,346	2,449	2,542	2,634
Glenorchy	384	410	516	567	619
Hawea	2,432	2,696	3,753	4,934	6,118
Lake Hayes	351	353	361	366	371
Luggate	699	1,365	1,488	1,592	1,696
Queenstown	22,369	23,397	27,509	32,640	37,784
Wanaka	13,707	14,600	18,171	23,080	28,000

The total baseline annual average demand forecasts across all systems are shown in Figure 49. These show that based on current demands and anticipated population growth, water demands can be anticipated to grow by 75% to 2055. The additional water extraction associated with this growth will place significant additional pressure on the environment and water supply infrastructure.

Figure 49: Annual Water Demand Forecasts



Appendix 17. Scenario forecast per annum to 2055

Forecast water savings, wastewater savings and costs per scenario, per annum to 2055 are outlined in the table.

Forecast	FY26	FY27	FY28	FY29	FY30	FY31	FY32	FY33	FY34	FY35	FY36	FY37	FY38	FY39	FY40
Baseline															
Water	14,393,416	14,842,877	15,270,355	15,636,780	16,025,188	16,391,613	16,758,038	17,124,463	17,490,888	17,857,313	18,223,739	18,581,313	18,938,887	19,296,461	19,654,036
Scenario 1 – Get the basics right first															
Water savings	0	0	293,906	385,544	531,308	737,422	1,007,729	1,345,535	1,372,670	1,399,805	1,426,940	1,453,033	1,479,127	1,505,220	1,531,314
Wastewater savings	0	0	91,967	94,175	96,560	98,768	100,977	103,186	105,394	107,603	109,812	111,961	114,110	116,259	118,408
Costs	$0	$119,827	$1,767,664	$635,852	$639,593	$643,335	$647,077	$650,819	$962,410	$966,152	$969,894	$973,560	$977,225	$980,891	$984,557
Scenario 2 – Basics, plus metering															
Water savings	0	0	293,906	449,161	744,960	1,209,268	1,853,090	2,686,762	3,339,148	4,127,950	4,212,876	4,295,919	4,378,961	4,462,003	4,545,045
Wastewater savings	0	0	91,967	132,614	254,208	461,591	760,419	1,156,101	1,654,047	2,259,665	2,306,048	2,351,178	2,396,309	2,441,439	2,486,570
Costs	$0	$119,827	$1,767,664	$9,288,038	$9,298,979	$9,302,721	$9,306,463	$9,310,205	$9,621,797	$9,625,538	$2,699,798	$2,722,404	$2,726,070	$2,729,736	$2,733,401
Scenario 3 – Do more															
Water savings	0	0	317,474	489,133	821,443	1,318,292	2,008,938	2,904,479	3,556,997	4,345,932	4,430,992	4,514,169	4,597,346	4,680,523	4,763,700
Wastewater savings	0	0	91,967	132,614	254,208	461,591	760,419	1,156,101	1,654,047	2,259,665	2,306,048	2,351,178	2,396,309	2,441,439	2,486,570
Costs	$0	$2,354,827	$6,424,407	$11,598,870	$11,609,811	$9,809,899	$9,813,641	$9,817,383	$10,061,774	$10,065,516	$3,139,776	$3,158,282	$3,161,948	$3,165,613	$3,169,279
Scenario 4 – Do more, faster															
Water savings	0	0	317,474	535,400	1,011,355	1,755,720	2,804,591	4,175,814	4,260,873	4,345,932	4,430,992	4,514,169	4,597,346	4,680,523	4,763,700
Wastewater savings	0	0	91,967	169,516	405,550	809,900	1,393,483	2,166,900	2,213,282	2,259,665	2,306,048	2,351,178	2,396,309	2,441,439	2,486,570
Costs	$0	$2,354,827	$6,424,407	$14,246,952	$14,257,894	$12,457,982	$12,461,724	$12,465,466	$3,132,292	$3,136,034	$3,139,776	$3,158,282	$3,161,948	$3,165,613	$3,169,279

Forecast	FY41	FY42	FY43	FY44	FY45	FY46	FY47	FY48	FY49	FY50	FY51	FY52	FY53	FY54	FY55	FY56
Baseline																
Water	20,011,610	20,369,184	20,726,758	21,084,333	21,441,907	21,799,481	22,157,841	22,516,201	22,874,561	23,232,921	23,591,281	23,949,641	24,308,001	24,666,361	25,024,721	25,383,081
Scenario 1 – Get the basics right first																
Water savings	1,557,407	1,583,500	1,609,594	1,635,687	1,661,781	1,687,874	1,714,026	1,740,178	1,766,331	1,792,483	1,818,635	1,844,787	1,870,939	1,897,092	1,923,244	1,949,396
Wastewater savings	120,557	122,706	124,855	127,004	129,153	131,303	133,456	135,610	137,764	139,917	142,071	144,225	146,379	148,532	150,686	152,840
Costs	$988,222	$991,888	$995,553	$999,219	$1,002,885	$1,006,550	$1,010,225	$1,013,899	$1,017,573	$1,021,247	$1,024,921	$1,028,596	$1,032,270	$1,035,944	$1,039,618	$1,043,293
Scenario 2 – Basics, plus metering																
Water savings	4,628,088	4,711,130	4,794,172	4,877,214	4,960,257	5,043,299	5,126,524	5,209,749	5,292,974	5,376,199	5,459,424	5,542,649	5,625,874	5,709,100	5,792,325	5,875,550
Wastewater savings	2,531,700	2,576,831	2,621,961	2,667,092	2,712,222	2,757,353	2,802,581	2,847,809	2,893,037	2,938,265	2,983,493	3,028,721	3,073,949	3,119,178	3,164,406	3,209,634
Costs	$2,737,067	$2,740,733	$2,744,398	$2,775,297	$2,836,528	$2,897,760	$2,961,189	$3,022,429	$3,083,669	$3,144,909	$3,156,613	$3,168,248	$3,179,883	$3,191,518	$3,203,153	$3,214,788
Scenario 3 – Do more																
Water savings	4,846,877	4,930,054	5,013,231	5,096,409	5,179,586	5,262,763	5,346,123	5,429,483	5,512,844	5,596,204	5,679,564	5,762,925	5,846,285	5,929,645	6,013,006	6,096,366
Wastewater savings	2,531,700	2,576,831	2,621,961	2,667,092	2,712,222	2,757,353	2,802,581	2,847,809	2,893,037	2,938,265	2,983,493	3,028,721	3,073,949	3,119,178	3,164,406	3,209,634
Costs	$3,172,945	$3,176,610	$3,180,276	$3,211,174	$3,272,406	$3,333,638	$3,397,178	$3,458,418	$3,519,659	$3,580,899	$3,592,603	$3,604,238	$3,615,873	$3,627,508	$3,639,143	$3,650,778
Scenario 4 – Do more, faster																
Water savings	4,846,877	4,930,054	5,013,231	5,096,409	5,179,586	5,262,763	5,346,123	5,429,483	5,512,844	5,596,204	5,679,564	5,762,925	5,846,285	5,929,645	6,013,006	6,096,366
Wastewater savings	2,531,700	2,576,831	2,621,961	2,667,092	2,712,222	2,757,353	2,802,581	2,847,809	2,893,037	2,938,265	2,983,493	3,028,721	3,073,949	3,119,178	3,164,406	3,209,634
Costs	$3,172,945	$3,176,610	$3,180,276	$3,211,174	$3,297,174	$3,383,173	$3,471,481	$3,557,489	$3,569,193	$3,580,897	$3,592,601	$3,604,236	$3,615,871	$3,627,506	$3,639,141	$3,650,776

14,393,416 14,842,877 15,270,355 15,636,780 16,025,188 16,391,613 16,758,038 17,124,463 17,490,888 17,857,313 18,223,739 18,581,313
18,938,887 19,296,461 19,654,036

Appendix 18. LTP Capital Plan – water demand management funding

Table 60 shows the funding for water demand management by scheme within the early 2026 Capital Plan. The base inflation year to calculate budgets inflated to funding year was 2025.

Table 60: Water Demand Management - Capital Plan Funding

Capital Plan code	Project name	Narration	Total 10YP Bud Infl Funding 24 – 34	Actuals 24/25	Bud Infl Funding 25/26	Bud Infl Funding 27/28	Bud Infl Funding 28/29	Bud Infl Funding 29/30	Bud Infl Funding 30/31	Bud Infl Funding 31/32	Bud Infl 32/33	Bud Infl 33/34
CP0006650	Demand Mgt - Queenstown	Network zoning and demand management interventions. Includes IT/billing system in Y1/2	**22,773,167**	29,056	172,886	2,576,200	3,306,980	3,393,408	4,172,891	4,269,689	-	-
CP0005941	Demand Mgt - Arrowtown	Network zoning and demand management interventions	**3,085,165**	299	23,449	349,419	448,538	460,260	565,984	579,113	-	-
CP0005824	Demand Mgt - Lake Hayes	Network zoning and demand management interventions	**4,693,400**	4,055	35,645	531,157	681,828	699,647	860,360	880,318	-	-
CP0007145	Demand Mgt - Arthurs Point	Network zoning and demand management interventions	**964,972**	187	7,334	109,280	140,279	143,945	177,010	181,116	-	-
CP0006651	Demand Mgt - Wanaka	Network zoning and demand management interventions. Includes IT/billing system in Y1/2	**16,473,218**	33,018	112,745	1,848,656	2,373,056	2,435,076	2,994,425	3,063,887	-	-

Capital Plan code	Project name	Narration	Total 10YP Bud Infl Funding 24 – 34	Actuals 24/25	Bud Infl Funding 25/26	Bud Infl Funding 27/28	Bud Infl Funding 28/29	Bud Infl Funding 29/30	Bud Infl Funding 30/31	Bud Infl Funding 31/32	Bud Infl 32/33	Bud Infl 33/34
CP0005895	Demand Mgt - Hāwea	Network zoning and demand management interventions	**3,605,129**	1,184,649	220,000	222,688	-	1,977,791	-	-	-	-
CP0006650	Demand Mgt - Queenstown	Network zoning and demand management interventions. Includes IT/billing system in Y1/2	**22,773,167**	29,056	172,886	2,576,200	3,306,980	3,393,408	4,172,891	4,269,689	-	-
Total			**51,595,051**									

Appendix 19. Risk Register

Table 61: Risk register

ID	Risk Title	Cause	Description	Consequence	Owner	Likeli-hood	Impact	Rating	Rating rationale	Mitigation action plan
1	**Community and stakeholder opposition**	Public resistance to metering, volumetric charging, and outdoor water use restrictions driven by perceived costs, equity/fairness issues or limited understanding of the need for water demand management.	Limited public understanding of: • Scale and drivers of peak demand • Need for Water Demand Management • Perceived cost impacts and fairness concerns; • Potential bill increases (perception) • Low visibility of current system inefficiencies in the public arena, reducing perceived need for change • Public confusion over leak responsibility (network vs private) • Potential for high impacts on high water user • Risk of misalignment between messaging/comms and actual experience (i.e. billing expected vs outcome) • Unclear accountability during WSCCO transition Metering installation or billing issues early in rollout	Key consequence is pushback and loss of support which can result in increased political / governance pressure. This has the potential to: • Delay rollout of meter installation • Impact introduction of pricing mechanisms • Delay approvals or decision making, amending scope or approach in response to concerns or pressure • Result in additional engagement and communication requirements • Potential rework of pricing structures or policy	Tasha Black	Possible	Moderate	Mediu m	Inherently, public perception risk is high, but the education project as a mitigation makes the residual risk much lower. A significant driver of public perception is the introduction of volumetric charging, which makes the issue more visible to the public. The introduction of audits further increases this visibility, particularly for business groups. Volumetric charging is becoming more accepted; however, a key mitigation of this risk remains the strength and consistency of the narrative supporting the proposed changes.	1. Develop–comprehensive communication strategy, including providing data from existing meters in townships e.g., Luggate and Hāwea (10% of homes are using 50% of water) and using meter data / examples where QLDC has found huge private leaks. 2. Provide illustrative billing examples. Breakdown of water production and supply compared to charges - this emphasises value in understanding (every litre saved = X cents per dollar).
2	**Data quality and evidence limitations (Financial + SCADA)**	Incomplete, inaccurate, or inconsistent data from financial systems and SCADA (Supervisory Control and Data Acquisition) systems on water usage, losses, and network performance.	Poor-quality financial and operational (SCADA) data undermines the ability to set accurate demand targets, plan effective interventions, and produce reliable reporting.	Misallocated resources; inaccurate demand reduction targets; regulatory risks	Sultan	Possible	Moderate	Mediu m	Data gaps or inaccuracies could undermine planning, targets, and reporting.	1. Complete investigation of existing data and data quality review 2. Establish assumptions, uncertainties which could be impacting evidence base 3. Data validation ahead of metering billing roll out. Iterative process - ensure sufficient time & resource.

ID	Risk Title	Cause	Description	Consequence	Owner	Likeli-hood	Impact	Rating	Rating rationale	Mitigation action plan
3	**Operational capacity and capability (Council and WSCCO)**	Limited availability of skilled staff with competing organisational priorities and limited ability to allocate dedicated resources over a sustained multi-year programme Requirement for capability uplift to deliver new activities (e.g. metering installation, data analysis, leak detection, and programme management)	Insufficient capability and capacity to deliver, operate, and sustain the water demand management programme, particularly given metering and volumetric charging which is an entirely new, complex, capability.	- Delays to implementation, particularly for metering installation and supporting infrastructure - reduced consistency and quality of delivery across schemes - increased reliance on external contractors, leading to higher costs and reduced control over execution - potential impacts and programme staging with reprioritised delivery / schemes and timelines - reduced ability to achieve reduction benefits within planned timeframes	Helen Beaumont	Possible	Severe	High	With measures (excluding metering and volumetric charging) there is an existing baseline capability within QLDC to deliver the works and the risk sits primarily with the capacity of key personnel to deliver alongside existing responsibilities. With metering and volumetric charging, current internal capability is also a risk. There is a need for skilled resources to support new technologies and processes, requiring capability uplift. The risk is wide-reaching, as it affects all aspects of programme delivery. It is a key consideration in determining how the proposed programme can be delivered and managed in practice. A key mitigation is to focus on resourcing requirements in the near to mid-term (12–18 months), where delivery pressure is highest, while recognising that longer-term capability can be developed progressively over the life of the programme.	1. Allocate dedicated FTEs (addressed in Management Case) 2. Implement resource monitoring and contingency plans 3. Timetabling implementation 4. Establish clear QLDC / WSCCO responsibilities 5. Prioritisation of benefits to inform the implementation roll out 6. Focus on short and mid term requirements (12-18months) to enable programme delivery for the selected scenario

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4	**Market capacity**	Limited availability of suppliers to deliver complex metering works (Project 4 and 5), particularly given current water reforms, which mean multiple councils are currently (or soon intending to) implement smart metering	Market has insufficient capacity or capability to implement and maintain demand management solutions, including metering installation and leak detection.	- Delays to implementation, particularly for metering installation and supporting infrastructure	Helen Beaumont	Unlikely	Severe	Medium	While it is plausible, current desktop assessment of market interests indicates there would be reasonable market interest in this programme.	1. Early market engagement (RFI for metering) Reliable forward programme of work for Active leak management and Metering (Projects 4 and 5) to enable market time to plan and react. 2. Explore opportunity for relationship with provider for ongoing programme.
5	**Limited leadership alignment and support for the program of works**	Differences in priorities across PCG, Property & Infrastructure (P&I), AIC, ELT, and Council, along with varying levels of understanding of the programme's benefits and timing, may affect overall alignment and confidence.	Where there isn't a consistent level of alignment at senior leadership level, this may influence funding, governance, and the pace of decision-making. Different views on key recommendations could also make implementation more complex and make it harder to maintain clear, consistent communication. Senior leadership means: - Property and Infrastructure team for Business Case development and delivery; - Council for decisions on what the Business Case is recommending.	Lower organisational prioritisation - pressure on resource allocation - potential delay for either decision making or lack of productivity vs planned - increased effort to maintain stakeholder support	Brent	Rare	Moderate	Low	Lack of leadership support could stall decisions, funding, and governance. Within the internal team there is more certainty of support, but at the council level there is more variability influencing the possible potential.	1. Engage senior leaders early and often: - Asset and Infra Committee (AIC) briefing mid-March - AIC and Council workshop - early June - ELT Briefing June - Council meeting: late July 2. Clearly define roles and responsibilities 3. Document decisions 4. Present financial and risk mitigation benefits 5. Monitor leadership support and intervene if lacking
6	**Cost escalation and supply market constraints above expected level**	Inflationary pressures; constrained supplier market; smart meter and equipment availability; supply chain disruptions; existing bulk supplier arrangements or supplier resistance to programme changes.	Rising costs, procurement constraints, or supplier misalignment limit the ability to source meters, equipment, and services required for the programme.	Cost escalation, particularly in relation to the supply and installation of smart meters (given this represents the bulk of programme costs), would impact the programme, but would be considered as part of any decision to progress with delivery at the time. As such it is a concern to be flagged, monitored and considered especially in relation to sourcing materials but not a critical risk as there are hold points before the programme gets delivered and tendered.	Brent	Possible	Moderate	Medium	External causes that can always have an impact, but planning can take account of forecasts to mitigated down. Supply or market issues could drive up costs and limit timely delivery.	1. Investigate exposure and impacts as part of the programme business case 2. Review supply chain pressure and any key exposure 3. Monitor market conditions 4. Use market engagement process for metering procurement to understand market conditions at the time

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7	**Political and regulatory environment uncertainty post-Business Case**	Election cycles (2026) - evolving compliance requirements; - 3-Waters reforms - Transition to Water Services CCO - Shifts in national or regional policy	Changes in the regulatory and policy environment over the life of the programme (potentially 5+ years) alter requirements for water service delivery, pricing, reporting, or compliance, impacting how the Programme is implemented.	Programme scope changes - funding risks - adjustment of metering or demand approaches during programme - unplanned costs associated with redesign or increased compliance	Brent	Possible	Moderate	Mediu m	The programme will be delivered over a number of years, during which time changes in the regulatory and policy environment are expected. This includes potential updates to drinking water standards, environmental requirements, and information disclosure settings. The transition to a Water Services CCO is expected to provide some stability in governance and reduce direct political influence over time. However, the regulatory environment will continue to evolve, and the programme will need to respond to these changes as they arise. The likelihood is considered possible, reflecting that change is expected but the timing and extent are uncertain.	1. Policy monitoring 2. Maintain dialogue with regulators 3. Prepare flexible implementation plans 4. Incorporate scenario planning for governance changes ahead of implementation
8	**GIS and data inaccuracies**	Outdated or incorrect geospatial and asset data Limited integration between data systems Increasing data requirements as programme scenarios become more complex (Volumetric metering, audits)	Inaccuracies or gaps in infrastructure and spatial data result in misdirected interventions, poor targeting of demand management measures, and reduced confidence in monitoring and reporting.	Wasted resources - ineffective demand management - misidentification of priority areas - reduced confidence in monitoring, reporting or demonstration of programme outcomes	Sultan	Possible	Moderate	Mediu m	Data accuracy and completeness remain uncertain across a number of systems, and this presents an ongoing risk to effective programme delivery. The complexity of this risk increases as programme scenarios become more advanced. More comprehensive scenarios require a higher level of data accuracy and greater reliance on spatial targeting and performance monitoring. This increases the volume of data that must be validated and maintained.	1. Version control of models used 2. Highlight any future differed capital works that can impacted

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									Impact considered moderate as data issues are more likely to reduce efficiency and increase cost rather than prevent delivery. But at the worst case they can affect the overall effectiveness (and perception of effectiveness) if not addressed.	
9	**Benefits realisation**	Overestimation of measure effectiveness within the Business Case Reliance on behavioural change assumptions that may not be realised in practice Variability in customer response across different segments (e.g. high-income / high-use households) Incomplete design of supporting interventions (e.g. targeting, feedback mechanisms, data visibility) Phased rollout delaying full programme effectiveness Assumption that mitigation measures (e.g. communications, pricing signals, engagement) will be delivered effectively and consistently	The proposed programme does not achieve the demand reduction and efficiency gains assumed in the Business Case, due to overestimation of intervention effectiveness or incomplete implementation of supporting measures.	Failure to achieve demand reduction targets, resulting in continued pressure on network capacity - Reduced ability to defer or avoid capital infrastructure upgrades - Requirement for additional unplanned investment in supply-side solutions - Increased scrutiny and potential revalidation of programme assumptions - Pressure to introduce more restrictive or politically sensitive measures at a later stage (e.g. stronger pricing signals or mandatory controls) - Reputational impact if the programme is perceived as ineffective or poorly targeted	Brent	Possible	Severe	High	The programme is underpinned by assumptions regarding the effectiveness of demand management interventions, including metering, pricing, and behavioural change. While these approaches are supported by evidence, their effectiveness is highly dependent on how they are designed, targeted, and implemented in practice. There is inherent uncertainty in how different customer segments will respond, particularly in areas where water use is less sensitive to price signals or generic messaging. This introduces a risk that benefits are overstated if the programme relies on simplified or optimistic assumptions. A key factor influencing this risk is that the Business Case proposes a suite of interventions, but successful	1. Consider staging options including, phased pilots, to test effectiveness ahead of full roll out 2. Establish KPIs rigorous accountability mechanisms and monitoring, reporting and continuous improvement processes 3. Adjust volumetric charge until the benefit is met.

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									delivery cannot be assumed. How they are defined, funded, and implemented will directly influence whether the expected benefits are achieved. Phased roll outs, pilots allow for some of these assumptions to be tested and refined as the programme progresses limited the potential impact of them being incorrect.	

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9b	**Ineffective demand reduction in high income households**	Early programme design relies on price signals, generic education or voluntary messaging that does not influence behaviour in high-income, low price-sensitive households	In affluent areas, water use is weakly correlated with price and standard conservation messaging. If the business case assumes behavioural change without incorporating social-norm feedback, visible consumption data and convenience-based interventions, projected demand reductions may not be realised.	Overestimation of demand reduction benefits - Continued high uncontrolled outdoor water use - Reduced deferral of capital upgrades - Reputational risk if programme perceived as ineffective or poorly targeted - Pressure to introduce more restrictive or politically sensitive controls later	Specific sub-risk of 9	Likely	Moderate	High	Evidence from comparable areas shows low price-sensitivity customer segments do not respond materially to pricing or awareness campaigns alone. Without early integration of behavioural best practice, benefits are unlikely to be achieved at scale. The likelihood is considered likely, reflecting that this behaviour is well established, although it can be partially mitigated through targeted programme design. The impact is assessed as moderate, as this group can contribute disproportionately to peak demand. However, this risk represents one driver of overall programme performance rather than the full benefits realisation risk.	1. Develop a coordinated education and engagement programme using local media and council channels to explain peak irrigation demand risks, the primary contributors to high summer use and establish clear social norms for responsible outdoor water use across all customer groups and ages. 2. Implement targeted, data-informed communications to high-irrigation areas (including private, commercial and QLDC-owned properties) that provide practical irrigation guidance and simple comparative information to make relative water use visible and reinforce efficient behaviour as the norm. 3. Introduce mechanisms to improve visibility and feedback on outdoor water use, including follow-up communications and suburb-level indicators that show whether irrigation behaviour and peak demand are improving over time. 4. Provide practical tools and default guidance to make efficient irrigation behaviour easier, such as online setup checklists, recommended timer settings and advice on avoiding irrigation during peak heat, wind, or restricted periods. 5. Establish a public reporting mechanism focused on irrigation issues and non-compliance to identify persistent or system-driven problems and enable targeted education, follow-up or enforcement where appropriate. 6. Pilot, monitor and refine education and engagement interventions prior to wider rollout by tracking irrigation-related demand indicators and using observed outcomes to inform future demand management or regulatory responses. 7. Educate the public through trusted intermediaries and sector experts (such as florists, garden centres, landscapers, plumbers and irrigation specialists) by promoting proven low-water options including appropriate plant selection, efficient irrigation systems, low-flow fixtures, rainwater collection, and discouraging or restricting high water waste products and practices.

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10	**Infrastructure readiness risks**	Existing assets incompatible with metering or restrictions	Technical incompatibility delays roll-out or reduces effectiveness	Partial implementation; unforeseen capital upgrades	Sultan	Possible	Severe	High	Incompatible assets could severely delay rollout or require significant upgrades. Possible until greater detail of assessment completed.	1. Desktop level assessment of readiness or gaps as part of detailed planning 2. Phased and pilot implementation to be considered to verify compatibility 3. Early market engagement
11	**Financial uncertainty on revenue impact**	Volumetric pricing effects on consumption and revenue hard to predict	Revenue shortfalls or customer bill shocks impacting financial sustainability	Budget deficits; political backlash; inability to maintain services	Victoria Harper	Possible	Moderate	Medium	Unexpected revenue impacts could affect budget and service delivery but is unlikely to be at a severe level ad can be monitored. Possible until further information on impacts completed.	1. Investigate potential impacts as part of Business Case 2. Consider financial modelling scenarios to assess impact 3. Implement shadow billing trials 4. Consider adjusting pricing iteratively at implementation 5. Downside revenue to be considered ahead of implementation 6. Implementation to be completed in a phased prioritised roll out
12	**Decision deferral pending CCO establishment**	Organisational uncertainty about decision rights and a tendency to defer material decisions until the Council Controlled Organisation (CCO) is established (planned 1 July 2027).	Key program or policy decisions may be delayed or avoided due to perceived need for future CCO input or ownership, creating ambiguity in current governance and accountability.	Slowed program progress and implementation delays; reduced momentum and accountability; risk of missed timelines or opportunities; potential cost escalation and stakeholder frustration.	Brent	Unlikely	Minor	Low	Deferring decisions could slow progress, escalate costs and delay addressing compliance requirements. Unlikely that this would have any significant impact with the CCO set to be established Sept 2026.	1. Clearly communicate the schedule, cost, delivery and compliance impacts of decision deferrals to key stakeholders