Local Water Done Well Review

Otago & Southland three waters

October 2024

Document status

Job #	Version	Written	Reviewed	Approved	Report Date
2927	DRAFT	S.Cross	D.Bonifant	D.Bonifant	17 October 24
2927	FINAL	S.Cross	D.Bonifant	D.Bonifant	24 October 24

Contents

Executive Summary

This report represents the culmination of Morrison Low's work in exploring regional delivery models for three waters services in Otago and Southland.

The work was commissioned by the Otago and Southland Local Waters Done Well working group. The individual components of this work have been shared amongst that group through iterative releases of reports at the end of each stage.

The report presents a compelling case for changing the water service delivery model in Otago and Southland. We believe that changes to the water services delivery model, whatever form they take, are likely to be needed to support the long term sustainability of water services delivery across the two regions.

76% of residential water users will see bills double in 10 years without change

Without change, our modelling, and councils' own long term plans, highlights that 76% of residential water users in the combined regions will see water bills at least double between 2025 and 2034. The remaining population still sees water bills increasing by at least 75%.

Water charges will need to increase further still for many residential water users beyond the ten-year long term plan window. These are going to challenge communities across the two region's ability to pay for three waters services.

Clutha, Gore, and Dunedin are all likely to breach current LGFA lending covenants by 2039 without rate increases beyond those projected in their LTPs. That would significantly constrain those councils ability to invest in three waters, roading, and community infrastructure. Over a 30 year period, Central Otago, Southland, Queenstown and Waitaki are likely to see debt exceeding 200% of revenue[1], at which point councils will be limited in their ability to invest in community infrastructure.

The financial ability to fund that programme of works is more constrained under the current delivery model. In some cases, even with economic and service regulation, councils will simply not be able to fund and deliver it. That places service levels and services at the local level at risk.

Leaving aside the affordability constraints and financial impacts on the councils , there is a significant lift in capability and capacity of the three waters workforce across the regions required. The regions have a combined three waters capital works programme of over $4.1 billion over the next 10 years. At its peak this programme exceeds $450 million per year. A figure that is double the planned capital works programme in 2023/24.

$450 million of three waters capital works delivered every year by 2029

The sheer scale of the forward capital works programme that needs to be delivered highlights a need for more effective investment planning, a larger more specialised workforce and a higher level of coordination across the individual council areas. Something unlikely to be achieved under the current model.

This report presents a range of options for the form of that change, however also clearly identifies that the only option that can address all of these issues is a Otago Southland asset owning water services entity (Otago Southland WSE).

[1] Over 260% in the case of Queenstown, which is likely to be operating under a debt to revenue limit of 350%.

That option would have the size and scale to build an enduring and resilient work force, develop increased specialisation, and be able to attract a larger contracting market to deliver work.

10% - 30% cheaper three waters charges for 46% of the regions' population by 2034

It is likely that an Otago Southland WSE would result in household three waters charges that are between 10% -30% cheaper than the status quo for up to 47% of the regions' population. By 2036, a further 37% of the population would also be likely to have lower household three waters charges, while the ratepayers of Invercargill would not be financially better off within an Otago Southland WSE.

While an Otago Southland WSE provides the greatest benefits from change in the way water services are provided across the regions, this report presents a range of options for the form of that change. While the jump to an Otago Southland WSE may be too large for some councils to take in the short term, this work demonstrates that something must be done at a regional level, and the need for councils to continue to work together to shape the form of that change.

Strategic context

The future delivery of three waters services across New Zealand faces significant challenges, which can be grouped into three main themes: infrastructure investment needs, financial constraints, and skills and expertise shortages.

Infrastructure Investment Needs: The sector is grappling with expiring resource consents, ageing infrastructure that requires increased renewals, and the declining condition of existing assets. Additionally, changing regulatory standards and climate-related pressures, such as droughts and severe weather, are compounding these challenges by changing investment needs.

Financial Constraints: There is a need to fund the necessary investments and the increased operational costs of a changing system. Many councils face reduced borrowing capacity, and funding challenges are particularly acute in small or remote communities from increases in water charges.

Skills and Expertise: Recruitment, retention, and development of skilled personnel remain significant hurdles, impacting the sector's ability to deliver services effectively.

The Otago and Southland regions are no different. Our analysis of the current state challenges highlighted that:

- The Otago and Southland regions are facing a wave of investment required from a large number of expiring wastewater treatment consents, ageing infrastructure and significant population growth at a local level. Combined, the two regions have a capital works programme of more than $4.1 billion over the next ten years. This is more than double the amount of work that was planned for 2023/24.
- A rapid increase in total borrowings is required to fund the necessary investment in three waters infrastructure. In some cases, councils which have historically held very low levels of debt are now projected to exceed borrowing limits that have been imposed by the Local Government Funding Agency (LGFA). Our modelling shows the combined regions needing to borrow over $2.7 billion to fund investment in water infrastructure by 2034 based on LTP projections. That is a threefold increase in per capita debt.

- Large rates rises for the ongoing provision of three waters services will be required. The three waters residential rates for 76% of the population are expected to double by 2034 based on long term plan projections.
- Councils continue to face challenges with the recruitment and retention of staff. The relative distance from major urban centres, and the majority of New Zealand's population, mean the employment market in Otago and Southland is smaller than other parts of the country.
- These challenges are not equally spread or shared across the region. The situation is more acute in some councils than in others.

These challenges are not insurmountable at a regional level but will take a great deal of focus and deliberate effort to overcome.

The options available

A full Range of potential service delivery options was considered and refined through workshops, and desktop assessment, and was reviewed and endorsed by general managers and chief executives across the regions.

To allow meaningful comparison of options a set of five strategic objectives were also developed and endorsed by chief executives and mayors across the regions. The strategic objectives are reflective of the Government's Local Waters Done Well objectives and the regional challenges identified through a current state assessment. The endorsed objectives are:

1 To deliver three waters services in a way that reflects the importance of water to the health of our residents, visitors, environment and economy.

2 To deliver three waters services that sustainably respond to change in population, economic activity and climate change.

3 To deliver three waters services through a model that is responsive to the local needs of our communities.

4 To provide efficient and effective services through a model that supports robust decision making and the development of enduring capability and capacity.

5 To ensure that three waters services are delivered through a model that is enduring and financially sustainable.

The options that were assessed against the strategic objectives were:

1. **Status Quo**: Councils continue with existing delivery models.
2. **Joint Contracts**: Councils enter joint contracts for core services such as engineering services, asset management services or laboratories.
3. **Shared Services Entity**: Establishing a formal entity for shared services, including those that could be included in joint contracts. The entity may employ its own staff, and would likely include a broader suite of shared services than a joint contracts model.
4. **Management CCO**: A Council-Controlled Organisation responsible for most elements of water services delivery. Each council would continue to set its own charges, manage its own debt, and agree a three waters budget.

5. **Multi-Council Water Services Entity (Otago Southland WSE)**: A single entity responsible for all elements of water services delivery. Councils would not own assets, set charges or manage their own debt. Arrangements could be agreed around the approach to harmonising prices or ringfencing some debt.

The results of the assessment of options against strategic objectives are outlined in a traffic light assessment in the summary table below. Objectives are numbered consistently with the list above.

	Objective				
	1	2	3	4	5
Status Quo					
Joint contracts					
Shared Services Entity					
Management CCO					
Otago Southland WSE					

The assessment highlights that an Otago Southland WSE is more likely to meet all of the strategic objectives than any alternative service delivery model available to the regions. Outside of the financial outcomes, there are clear non-financial benefits that are available through an Otago Southland WSE. These include:

- Improved capability and capacity that is available from scale creating clear career pathways and opportunities for professional development and specialisation.
- Participation in a larger entity allows an improved ability to attract larger scale contractors, by providing consistent procurement approaches and long term project certainty.
- Dedicated focus on the delivery of three waters services allowing for "best for network" and efficient capital works planning.
- An increased ability to invest in innovative technology to improve service delivery and reduce costs.
- The ability to explore opportunities to combine networks or share infrastructure where this presents the most cost effective long term solution.

These financial benefits arise as a result of scale and financial separation. If established, an Otago Southland WSE would generate over $370 million in annual revenue, and manage an asset base with a book value exceeding $5.9 billion. Such scale would rank the entity as the third or fourth largest water services provider in New Zealand[2] (after Watercare, Wellington Water/its successor and roughly equal to Christchurch City Council).

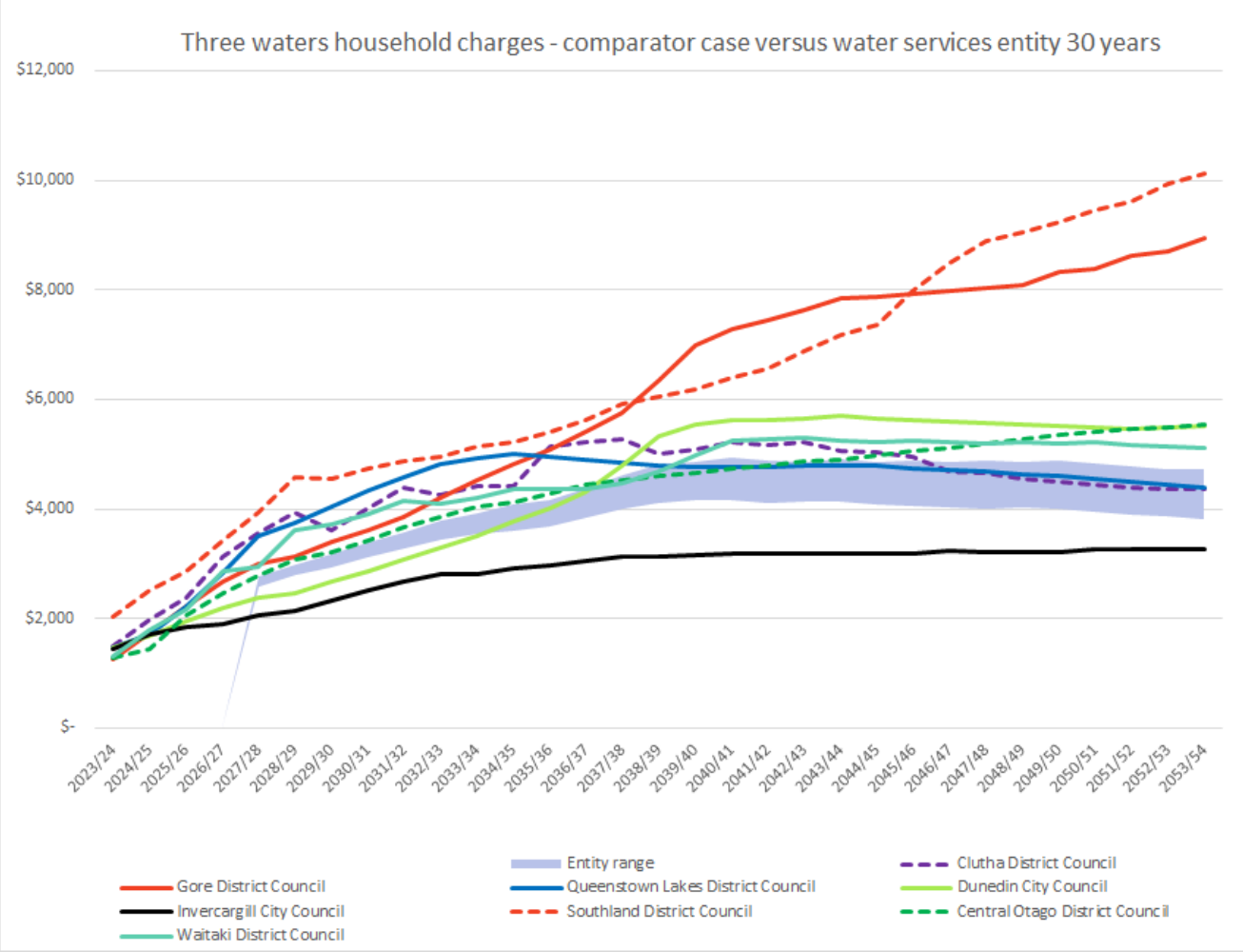
[2] The relative scale of an Otago Southland entity, if established, would depend on the outcome of other regional work.

Financial Modelling

Financial modelling was completed for the Otago Southland WSE option only. The modelling[3] highlights that:

Up to 84% of the regions' population will have lower three waters charges by 2036

- Three waters charges are expected to at least double by 2034 for all councils other than Invercargill.
- By 2036, up to 84% residential water consumers are likely to have lower bills in an Otago Southland WSE than they would under the existing service delivery model.
- Even under an Otago Southland WSE model, charges for three waters services will rise by around 40% between 2028 and 2034. However long term an Otago Southland WSE is able to stabilise its prices, and between 2039 and 2054 water prices are not expected to move more than 1 – 2% per year.



[3] Based on our "comparator" scenarios – refer to Appendix One for detail

Capital investment

The councils have significantly different age profiles and have different investment drivers. Investment requirements often present as "waves" of investment. They are the largest influencer of household charges for any water services provider.

The $4.1 B of capital investment is the largest driver of cost

The short-term benefits of an Otago Southland WSE may not be as obviously apparent to the councils that are not facing an immediate investment wave. However, one of the key benefits of an Otago Southland WSE is its ability to flatten those investment waves and achieve organisational efficiencies through improved asset management practice and coordinated procurement.

Debt

Some councils are also facing significant borrowing constraints. A review of the base financial data provided by councils showed many councils reached, or breached LGFA borrowing limits. These councils have few options available:

Without change many councils will be financially constrained

- Significantly reduce investment in three waters infrastructure, resulting in either non-compliance or significant infrastructure backlogs and potential performance issues.
- Stop investment in other community assets (if this has not already occurred).
- Increase water charges or rates to service debt.
- Borrow from lenders other than the LGFA, typically at much higher interest rates.

None of these options are sustainable.

An Otago Southland WSE is able to leverage its balance sheet and borrow to a greater extent than the collective councils can. The entity does not need to generate as much additional revenue to support its borrowing requirements as it is not bound by the same debt/revenue ratios. That means reducing the water charges to consumers compared to the individual council delivery model. Importantly, as highlighted later in this report, an Otago Southland WSE ultimately borrows less over a 30-year period to deliver the same expected investment.

Alternative scenarios

We have modelled to alternative groupings for an Otago Southland WSE. These include:

- A WSE that excludes urban councils (Dunedin, Invercargill and Queenstown)
- A WSE that excludes Invercargill and Queenstown

The modelling of additional scenarios shows that a WSE remains an attractive option for councils in Otago and Southland even without Invercargill, Dunedin or Queenstown. In both of our alternative scenarios, all water consumers in the areas that take part in the entity are likely to have lower household three waters charges in the short term, with longer term benefits differing by council area.

This indicates that there may be a viable path for a WSE to be established and to expand its geographic scope over time. A WSE that excludes one or more of the three largest councils in Otago and Southland is likely to be able to be financially sustainable, and may be able to increase scale through the provision of some shared services to the remaining councils.

Conclusion

In Morrison Low's view this report demonstrates that there are clear benefits for the Otago and Southland regions to establish an Otago Southland WSE to provide three waters services to its communities in the future.

The benefits of such an arrangement will be experienced in a relatively short time frame for many communities; three waters charges are expected to be lower by 2036 for up to 84% of the regions' population through an Otago Southland WSE than under the existing service delivery model. More importantly, these benefits are likely to be enduring, with 30 year modelling indicating that future generations will also be financially better off under an Otago Southland WSE.

For those communities where the financial benefits of an Otago Southland WSE are not as great, there may be opportunities to transition at a slower pace than other councils. This may include entering into contractual arrangements with an Otago Southland WSE to provide professional services, the extent and scope of which may be able to be increased over time.

Background and Introduction

Following a widespread outbreak of gastroenteritis in Havelock North in 2016, the Government undertook a significant programme of work which resulted in:

- Updates to the drinking water standards
- The establishment of a drinking water supplier (Taumata Arowai)
- Identification of a range of systemic issues relating to the sustainable provision of three waters services across the country.

Over the period that followed there have been a number of attempts at changing the service delivery model for three waters services, including voluntary investigations completed by the councils in the Waikato and Hawke's Bay regions, and centrally led reviews which resulted in the previous Government's proposed "Affordable Waters" programme.

The "Affordable Waters" programme has now been repealed and replaced with a new programme called "Local Water Done Well". Under Local Water Done Well:

- Council's will be required to develop "Water Services Delivery Plans". These plans will need to demonstrate how councils will manage and invest in their three waters services to meet current and future standards, and remain financially sustainable
- Councils will be supported to voluntarily work together to combine services for more efficient and effective delivery
- New CCO models will be developed to allow councils to separate the finances (including debt) for three waters services from shareholder councils' balance sheets.

This report summarises the work commissioned for the councils of the Otago and Southland regions by the Local Water Done Well working group. The approach is to undertake work on a first principles approach (though drawing on data collected through previous studies), to identify a "no regrets" improvement pathway for service delivery in the two regions.

The work included the review of a current state (summarised in our report of 30 August 2024) which highlights the case for change, and the subsequent development of strategic objectives, a short list of potential service delivery options, and detailed financial modelling of the water services entity option.

Case for change

The future delivery of three waters services across New Zealand faces challenges from a wide range of converging issues. However, these issues are typically able to be grouped into three common themes:

- A need for significant investment in infrastructure, including:
  - Long held resource consents nearing expiry
  - Ageing infrastructure and increased renewals investment requirements
  - The condition of assets
  - Increasing or changing regulatory standards and intervention
  - Changing demand
  - Climate related pressures including increased frequency of droughts and severe wet weather events.
- Increased financial constraints, including:
  - The need to significantly increase rates or other revenue that needs to be collected to fund service provision
  - A reduction in available borrowing capacity
  - The difficulty in funding significant infrastructure investment in small or remote communities.
- Challenges with the recruitment, retention, and development of skills, experience and expertise.

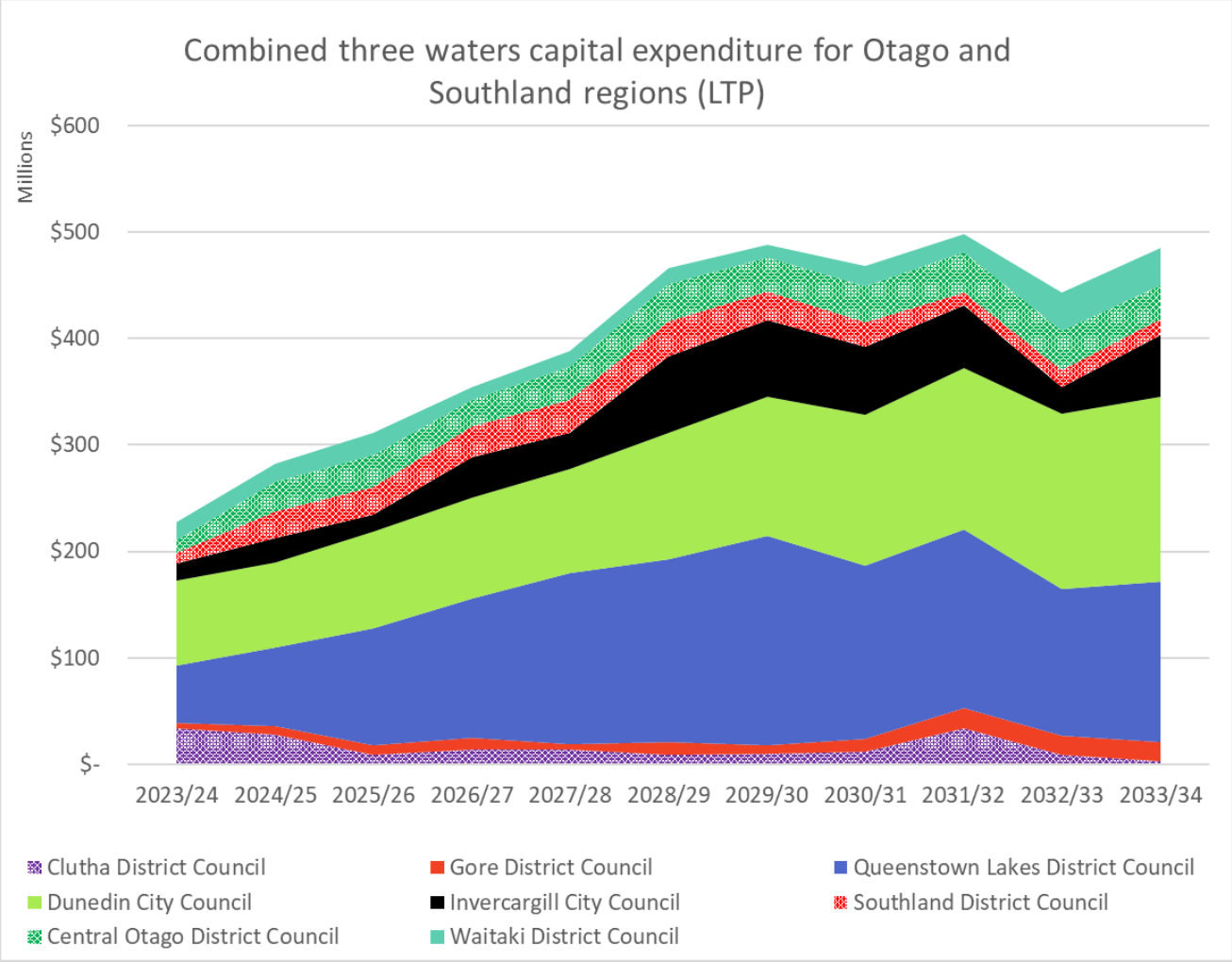
The Otago and Southland regions are no different. Our analysis of the current state challenges is summarised in the following section and in the individual council analysis. The analysis identifies that:

- The Otago and Southland regions are facing a wave of investment required from a large number of expiring wastewater treatment consents, ageing infrastructure and significant population growth at a local level.
- A rapid increase in total borrowings to fund investment in three waters infrastructure. In some cases, councils which have historically held very low levels of debt are now projected to exceed borrowing limits that have been imposed by the Local Government Funding Agency (LGFA).
- Large rates rises for the ongoing provision of three waters services. The three waters residential rates in some areas anticipated to increase up to three-fold over the next ten years.
- Our work in 2021 highlighted recruitment challenges across both regions, with vacancy rates averaging 13% across the two regions. Conversations with key staff through this piece of work have identified that recruitment and retention challenges have not improved significantly since that earlier work.

Investment requirements

The combined investment profile for the Otago and Southland councils features a $4.1 billion programme of work, across eight councils. The work programme almost doubles from $280 million to over $450 million dollars of planned annual capital delivery between 2025 and 2029.

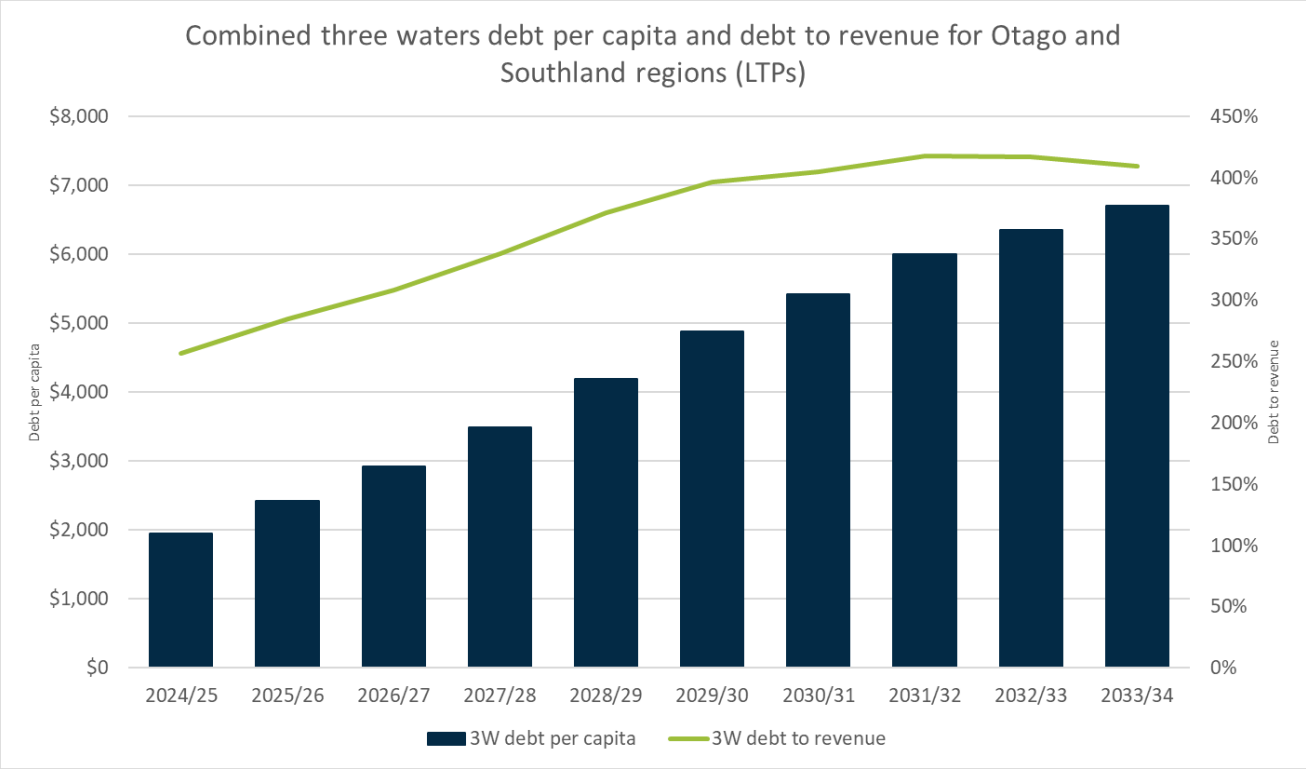
There is a significant delivery challenge associated with scaling up to such a large programme of work. The delivery of a three waters work programme that is double the current scale not only requires the funding but would require a significant increase in contracting, engineering and project management resources across the regions.



Borrowing requirements

Financing a $4.1 billion dollar work programme requires significant borrowing. Council's long term plans show that total three waters debt across the Otago and Southland Councils is expected to reach $2.7 billion by 2034.

On a per capita basis, debt across the combined regions will triple from $1,950 per person to over $6,700 per person in 2034. Servicing and repaying that debt will add $450 to the average rates bill.



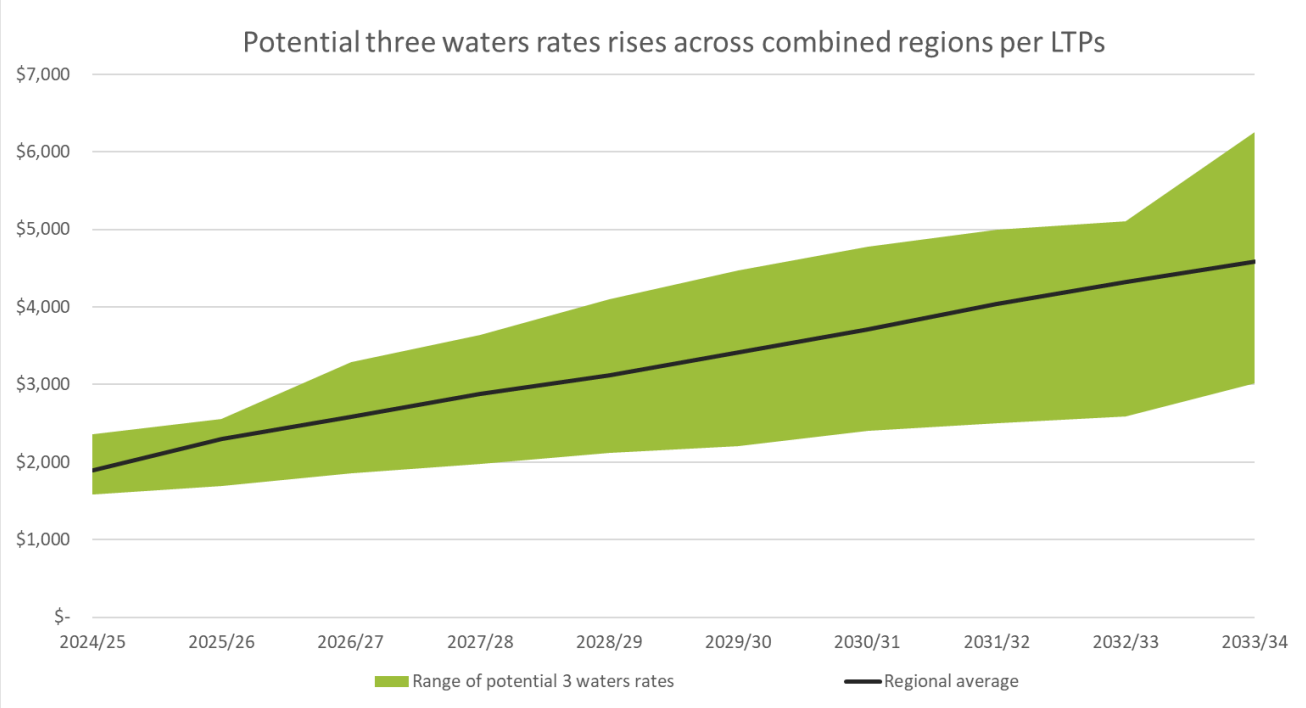
Proposed financial arrangements announced by the Government on 8 August 2024 reference LGFA's willingness to lend to an effective rate of 500% of three waters revenue. Lending covenants will not be based on this 500% threshold, but will most likely be based on a "Free Funds from Operations" to debt ratio (FFO ratio). Under these covenants, it is expected that an entity would need to maintain a FFO ratio of 10% or higher. The implications of this for an Otago and Southland three waters entity are discussed later in this report.

Rates rises

Three waters rates across the Otago and Southland regions are predicted to rise significantly over the next ten years. Based on long term plans, by 2034, some councils will have three waters rates that are more than three times larger than they are in 2025. For some councils, this means a rapid increase in rates in the final years of their LTPs.

While there is significant variation across the regions, the affordability of three waters services and rates is likely to become a key consideration for all councils moving forward. Regionally, the weighted average residential rates will double from $1,900 in 2025 to over $3,900 in 2034.

This may be compounded by the announcements made on 8 August 2024 that indicated a future economic regulator will have the power to set minimum and maximum levels of investment and revenue, thereby restricting councils ability to smooth investment and rating impacts.

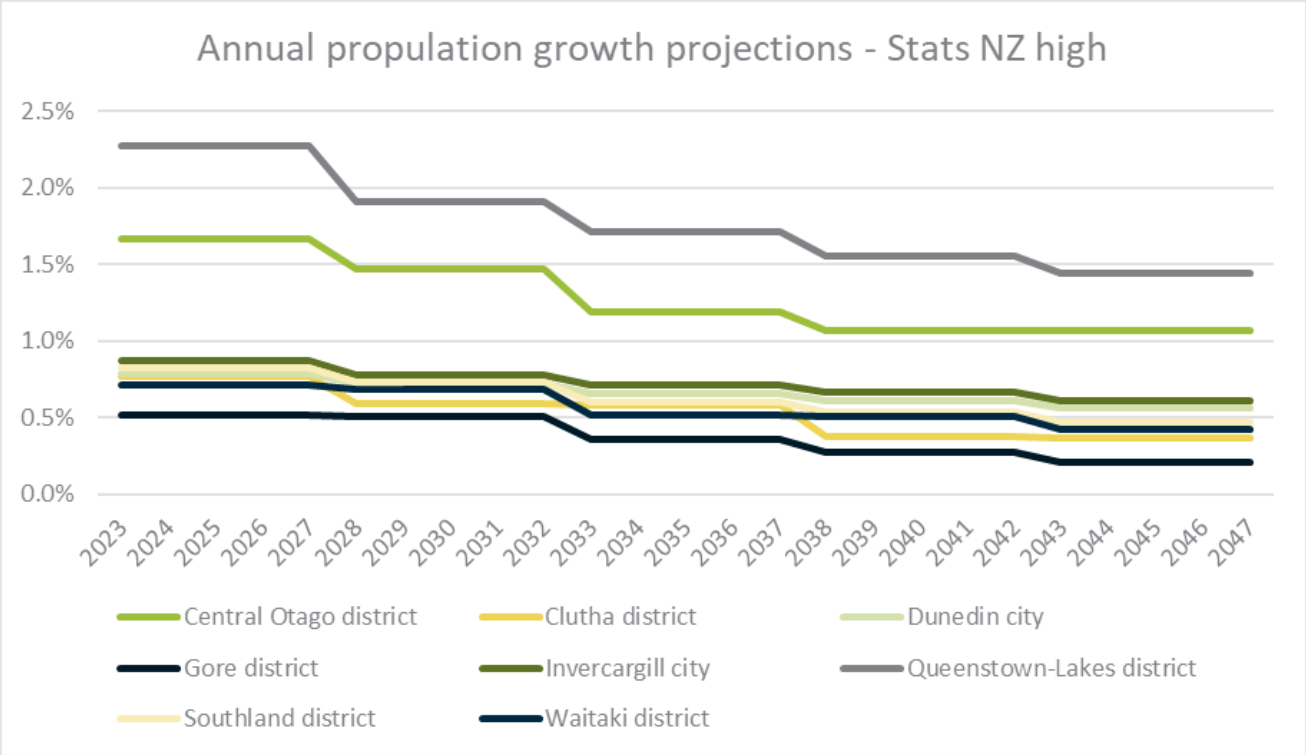


Local context matters

While there are clearly common themes that impact the future sustainability of providing three waters services in Otago and Southland, the local context for those issues differs significantly across councils. This local context helps to identify how similar challenges may need to be resolved through different approaches.

Some councils are experiencing rapid growth

The councils in Otago and Southland are vastly different in terms of their growth profile and population projections. While population is expected to continue to grow rapidly in areas such as Queenstown Lakes District Council (QLDC) and Central Otago District Council (CODC), in areas such as Southland District Council (SDC) and Gore District Council (GDC), population is expected to remain relatively stable.



The two Councils that are experiencing the highest levels of growth in the Otago and Southland regions (QLDC and CODC) have a combined three waters capital works programme of $822 million just to respond to provision of infrastructure to support that future growth. This represents approximately half of the three waters capital works programme for both Councils.

While Dunedin City Council (DCC) has allowed approximately $178 million for three waters growth infrastructure between 2024 – 2034, the remaining councils in the Otago and Southland regions have only forecast incidental expenditure on growth projects over the LTP period.

Servicing the growth that is occurring in QLDC and CODC requires significant organisational effort and planning. It can also have significant financial implications because development contributions that are used to fund that growth infrastructure are often received over time, meaning councils must borrow to fund its construction.

Growth councils require careful planning to ensure infrastructure is provided to support development just in time for the development to occur, and to ensure that consents, treatment plants, pump stations and bulk water/wastewater pipelines are appropriately sized to address future demand.

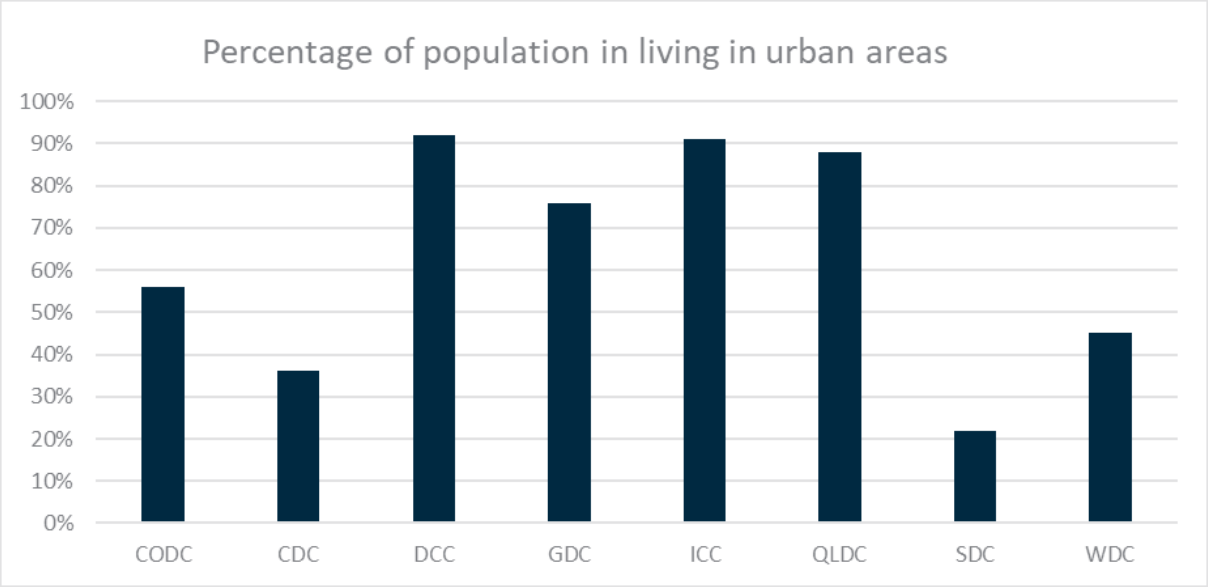
Addressing future growth demands is likely to become even harder following recent announcements by the Minister of housing. Tier one and two council under the national policy statement on urban development will now be required to provide up to 30 years of plan enabled development capacity. This will likely require further investment in growth infrastructure.

Some councils have many small communities

Provision of water, wastewater and stormwater services is becoming increasingly expensive as drinking water, environmental, and health and safety standards continue to become more stringent. These increasingly stringent standards are requiring significant investment to be made, particularly in wastewater treatment plants.

The Otago and Southland regions include a mixture of highly urbanised and largely rural populations. DCC has as many as 92% of its residents living in an urban environment. Invercargill City Council (ICC) and QLDC each have greater than 85% of their population living in urban areas.

By contrast, Clutha District Council (CDC), Waitaki District Council (WDC) and SDC each have fewer than half of their population living in urban areas. Only 22% of SDC's population live in urban areas.



The costs of meeting increasingly stringent regulatory standards is particularly notable in small and rural communities, where costs are spread over a very small number of ratepayers. While some councils have adopted district wide charging to deal with this, these small schemes are still difficult to maintain economically.

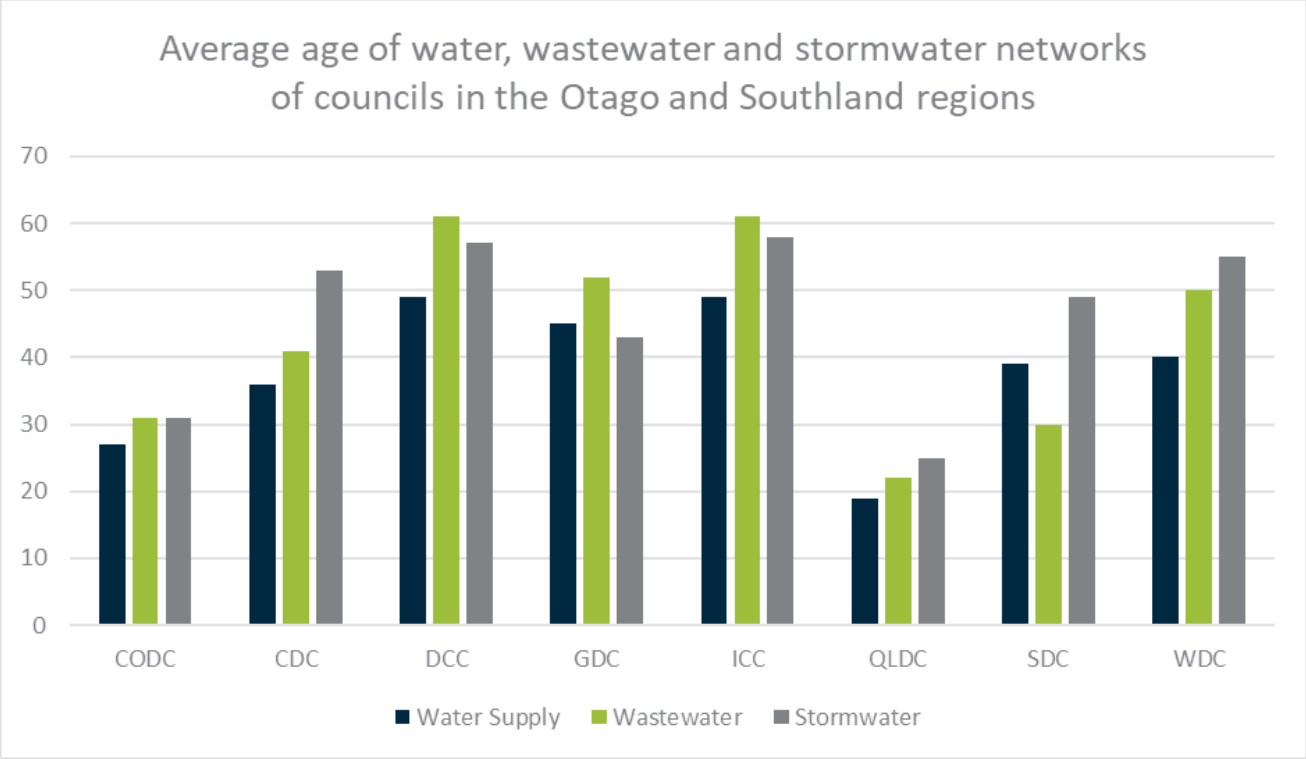
In most cases councils with multiple small townships also have comparatively low populations. Further, when a large proportion of a district's population lives in small townships, spreading costs is simply a matter of timing. While some townships may have (comparatively) expensive upgrades due in the next five years, the remaining townships may have similarly expensive upgrades due in the following 5 years.

Managing small schemes cost effectively requires a different approach to the management of three waters services in highly urbanised environments.

Some councils have older networks than others

While age is not the sole determining factor about whether a water, wastewater, or stormwater network is in good condition or needs to be replaced, in the absence of high-quality condition data or asset performance information, it can be a good indicator.

The Otago and Southland regions contain some of the oldest townships in New Zealand. As a consequence they also have a number of long lived assets. DCC notes in its infrastructure strategy that its main sewerage interceptor dates back to the early 1900s and is still in use. DCC also has a number of other assets of similar age.



Ageing infrastructure and the pending "renewals bow wave" are issues that have been frequently cited as major challenges for the waters sector in New Zealand. As could be expected, aging infrastructure is often in poor condition, or may be leaky due to age or material. Leaky water networks mean high rates of water loss, contributing to the need for water restrictions during summer, while leaking stormwater and wastewater overflows can lead to inundation of the wastewater network causing overflows of raw sewerage and potential consent breaches.

Councils with older networks such as ICC, DCC, WDC and GDC are expected to undertake a significant programme of renewals over the next 10 years. These councils are expected to spend over $1.3 billion in three waters renewals over the next 10 years, or around half of their combined three waters capital works programme.

Among the issues lie a range of opportunities

The scale of the three waters infrastructure challenges facing the Otago and Southland regions is substantial. While the underlying causes for the increased level of investment facing councils may differ, there are a number of clear opportunities for collaboration that could be explored.

Examples of where further opportunities could be explored, or may be leverage as part of any new service delivery model include:

- Exploring opportunities for networks to be connected in neighbouring areas. There are only likely to be a small number of these opportunities (for example the Clifton and Winton wastewater treatment facilities) that are economically viable. However, combining networks is likely to give effect to longer term operating efficiencies and improved network resilience. There is nothing to prevent such opportunities to be explored currently.
- A number of Council's have in house operations and maintenance teams that work on part or all of their water and wastewater networks. These councils currently need to employ a large enough workforce to ensure adequate cover for after hours, and annual and sick leave of staff. Developing a shared workforce between neighbouring councils would provide more workforce resilience, and potentially enable operational efficiencies.
- All councils have significant capital works programmes ahead which will require engagement of specialist contractors to complete. However, given the comparatively remote location of the Councils of Otago and Southland, and the distance from most major population centres in New Zealand, attracting large scale contractors can be challenging. Alignment of procurement and project management approaches, and coordination of large scale work programmes would likely assist in attracting contractors to the regions.
- Councils across Otago and Southland differ in terms of the environmental influences on their investment need. These differences create further opportunities in a shared service model, as the increased scale will allow for increased specialisation of roles. For example, councils may be able to pool resources to have dedicated development engineering, design engineering, urban and rural water specialists, and project management skills that would otherwise be out of reach.
- Increased scale may allow for specialist equipment to be jointly acquired, for example CCTV equipment for condition assessment or equipment to aid leak detection.
- There may be funding and financing opportunities available through the ability to leverage a combined balance sheet and revenue base. The Government's announcements of 8 August 2024 indicated that WSEs may be able to access borrowing up to 500% of its revenue, and for that borrowing to be kept off a council's balance sheet. However the terms, including the interest rate, of that borrowing will be determined by LGFA based on its assessment of risk and credit worthiness. Increased scale of water entities may allow for improved lending terms due to the increased scale.

Detailed information for each council is outlined in further detail in our Current State report of 30 August 2024, which has been attached as **Appendix Four**. Note that this report was produced prior to Morrison Low receiving full financial information from Councils, and accordingly, charts included within that report may not completely align with data presented in the "Financial modelling" section of this report. In the case of any inconsistency the data in this report should be preferred.

Strategic objectives

Strategic objectives help guide the development and assessment of options in a business case process. They summarise and reflect the critical elements of success, and the aspirations for improved water service delivery across the Otago and Southland regions.

Strategic objectives were developed having regard to the issues identified through the case for change. The strategic objectives were developed through workshops with the Otago Southland Local Water Done Well working group, and were presented to General Managers, and Chief Executives for challenge and refinement.

The strategic objectives are outlined across the top of the following table. In the subsequent rows the objectives have been aligned to Local Government's four wellbeings to provide further clarity and context and a level of detail or definition for each of the objectives that can then be used to assess the options.

In addition to the strategic objectives, critical success factors from Treasury's Better Business Cases approach have been used to assess the viability of each long listed option, and in more detail, the strategic fit of the shortlisted objectives. The critical success factors used were:

- **Strategic fit and business needs** – how well the option meets the investment objectives and is aligned to broader strategies and programmes (e.g. the government's Local Waters Done Well programme objectives).
- **Potential value for money** – does the option produce the appropriate balance of benefits versus costs?
- **Supplier capacity and capability –** Is there sufficient capability and capacity within the market to deliver the option?
- **Potential affordability –** Is the option likely to be affordable? We have considered this in a relative sense across options.
- **Potential achievability –** Is the option able to be feasibly implemented? For practical purposes, this has been considered based on a technical feasibility perspective rather than a political achievability perspective.

These critical success factors were used as a pass/fail in assessing and refining the long list prior to determining an agreed shortlist of options.

	Deliver three waters services in a way that reflects the importance of water to the health of our residents, visitors, environment and economy	Deliver three waters services that sustainably respond to change in population, economic activity and climate change	Deliver three waters services through a model that is responsive to the local needs of our communities	Provide efficient and effective services through a model that supports robust decision making and the development of enduring capability and capacity	Ensure that three waters services are delivered through a model that is enduring and financially sustainable
Economic Wellbeing 	• Three waters services and assets are resilient • Provision of reliable, continuous services	• Economic and population change is supported through the provision of infrastructure	• Services provision recognises the diversity in need for three waters infrastructure across our communities	• Scalable and adaptable • Maximises available efficiencies and encourages effective investment planning • Supports improved retention and recruitment • Systems and processes are robust and consistent across the regions	• Enough funding is raised (through charges, grants, debt or other means) to invest in needed infrastructure • The funding model allows for the ongoing, sustainable, provision of three waters services • We meet the requirements of an economic regulator
Cultural Wellbeing 	• Services respect the cultural significance of water and receiving environments • Service provision reflects our role as kaitiaki for the natural environment	• The intergenerational impacts of investment are considered	• A delivery model that allows for effective engagement with stakeholders	• Strong relationships are held with Runaka • Runaka are provided meaningful opportunities to contribute to decision making	• The financial capacity of councils to invest in community infrastructure is enhanced

	Deliver three waters services in a way that reflects the importance of water to the health of our residents, visitors, environment and economy	Deliver three waters services that sustainably respond to change in population, economic activity and climate change	Deliver three waters services through a model that is responsive to the local needs of our communities	Provide efficient and effective services through a model that supports robust decision making and the development of enduring capability and capacity	Ensure that three waters services are delivered through a model that is enduring and financially sustainable
Social Wellbeing 	• Public health is at the heart of decision making • Services will be compliant with all consents, regulatory standards and drinking water standards	• Communities are given access to three waters services that they need.	• Investment in small communities is maintained • No community is left out	• The health and safety of our workforce and the public is protected • The model supports a highly coordinated emergency management response capability The model supports the development of happy, high performing people	• Three waters services are delivered in a way that is more affordable than the alternative.
Environmental Wellbeing 	• The health of marine, estuary and freshwater environments is reflected through our approach to network management and service provision	• Investment decisions balance growth demands against environmental outcomes	• Investment planning and service delivery recognises differences in the local environments of our communities	• Access to a broad range of skills and resources supports innovation and investment planning that produces good environmental outcomes	• Investments consider the long term environmental impacts to reduce whole of life costs

Long list of options

A long list of options was developed using Treasury's Better Business Cases options framework tool. This tool encourages you to think broadly about the range of different options that may be available to address the business needs and strategic objectives.

Options are broken into five different "dimensions". For each dimension, participants consider different solutions ranging from least to most ambitious. The dimensions considered are:

- **Service Scope –** What are the specific activities to be included in a proposed delivery model (e.g. water, wastewater, stormwater)?
- **Service solution** – What services does the model provide? For example, whether the model undertakes all work necessary to deliver three waters services, or whether it simply provides some specialist services.
- **Service delivery** – What are the structural arrangements in place? For example, whether the services are delivered through a Water Organisation (CCO) or through contractual arrangements.
- **Implementation –** When are the options implemented? Because a key output of this project is a regional delivery roadmap, timing options will be considered more fully as part of the roadmap development.

  Funding options – How will we pay for the services delivered by the preferred model? While there are a range of options for funding, these are closely tied to the delivery model.

The full outputs of the long list workshop are attached at **Appendix Three**. While theoretically, this produces a long list that includes every combination of option (over 39,000 combinations), not all options are compatible with each other.

Service Scope options	
Options removed due to failure to meet critical success factors.	
The service scope options that were ruled out of the long list due to failure to meet critical success factors include:	• Addressing agricultural water only • Addressing rural mixed use supplies only • Address rural drinking water supplies only • Addressing urban drinking water supplies only • Addressing wastewater and stormwater only • Addressing council owned three waters schemes plus land drainage schemes • Addressing all core infrastructure

Service Scope options	
Options that were ruled out during shortlisting.	
Addressing drinking water supplies only	This option was ruled out due to failure to address issues related to all three waters, and in particular failure to meet the strategic objective relating to reflecting the importance of water.
All water supplies (including non-drinking water supplies)	This option was ruled out due to failure to address issues related to all three waters, and in particular failure to meet the strategic objective relating to reflecting the importance of water.
Water and wastewater only	This option was ruled out due to the relationship between stormwater and wastewater and the challenges in managing these issues separately. For some councils which have integrated wastewater and stormwater networks, separation of these activities would be challenging. This option was also discounted due to impacts on supplier capability and capacity given common shared skills.
Three waters plus community owned schemes	This option was ruled out due to: • An inability to compel community schemes to transfer ownership or management of their assets • Significant costs involved in transferring management or ownership of community schemes • A lack of knowledge about the full extent of community owned schemes • Concerns about the technical achievability of this option
Shortlisted options	
The only service scope options that progressed to shortlisting was the delivery of council owned water, wastewater and stormwater services.	

Service Solution options	
Options removed due to failure to meet critical success factors.	
The service solution options that were ruled out of the long list due to failure to meet critical success factors include:	• Developing consistent standards and bylaws • Network operations and maintenance (only) • Treatment operations and maintenance (only) • Centralised funding/treasury support • Capital works planning, design or PMO functions • Bulk water and wastewater treatment only
Options that were ruled out during shortlisting.	
Regional operating strategy (after hours monitoring services)	This option was ruled out in isolation as it is already likely to be pursued through other regional collaboration efforts, and would otherwise not have a large enough impact on its own (i.e. does not provide value for money).
Pursue all regional quick wins	This option was ruled out in isolation as it is already likely to be pursued through other regional collaboration efforts, and would otherwise not have a large enough impact.
Shortlisted options	
The remaining options were included in shortlisting, with the potential of being bundled under some of the shortlisted service delivery models. These options included: • Joint procurement • Network and treatment operations and maintenance • Capital works delivery • Engineering centre of excellence • Joint asset management and investment planning • All functions • All functions with asset transfer	

Service Delivery options	
Options removed due to failure to meet critical success factors.	
The service delivery options that were ruled out of the long list due to failure to meet critical success factors include:	• Pursuing options through informal arrangements • Establishing a joint committee • Delivery through a community owned cooperative or trust • Delivery through a regional council
Options that were ruled out during shortlisting.	
Memorandum of understanding	This option was ruled out because it lacked enough formal commitment to allow it to develop an enduring and financially sustainable model, or for the development of enduring capability or capacity.
Shared arrangement	This option was ruled out as it was not considered to be sufficiently more enduring than a joint contracting model, while adding sufficient additional complexity.
Joint venture	This option was ruled out as it was not considered to be sufficiently more enduring than a joint contracting model, while adding sufficient additional complexity.
Multiple CCOs or entities	This option was ruled out as a regional solution as it created too much additional cost and complexity for limited perceived additional benefit. Of note, ruling this option out of regional consideration is not intended to have ruled out the possibility of a regional entity providing services to an individual council owned water services entities.
Consumer trust	This option has been ruled out of further regional consideration as it is expected to come at a higher cost than a water services entity (due to lending arrangements), and due to the lack of an existing consumer trust which covers the entirety of the two regions.
Shortlisted options	
The remaining options, were included in shortlisting: • Entering into joint contracts • The establishment of a CCO or water Services entity	

Implementation options

All implementation options have been considered in the shortlist. Implementation timeframes will be determined in the event that a regional option is identified and pursued further. Financial modelling of the Otago Southland WSE assumes an implementation date of 1 July 2027.

Funding options

Options removed due to failure to meet critical success factors.

The only option ruled out of the shortlist was “costs lying where they fall”. This was ruled out at a regional level because it doesn’t align with the other shortlisted options.

Shortlisted options

The remaining options were progressed to shortlisting. In some cases, these options will be determined later through entity design processes, should a regional entity model be pursued. The shortlisted options included:

- Funding based on contractual agreements
- Funding set by each council (including upon receipt of advice from an entity)
- Funding determined by a water services entity, but reflecting local differences
- Funding determined by an entity with full regionalisation

Shortlisted options

The shortlisted options have been described below as being independent options. They represent a continuum of the scale of change possible in water services delivery options. It is the intention of the working group for these to be viewed collectively as a delivery roadmap, with the possibility that some groups of councils may wish to commence their journey further along the roadmap than others.

The possible progression between stages on the roadmap, and the coordination across those different stages will need to be finalised once councils have provided initial direction to the working group.

It is important to note that the options presented here are to be considered as being "regional options". They do not provide the full suite of options that may be available to councils at an individual level. It is acknowledged that councils may wish to consider their own options independently of the regional work.

Option 1 – status quo

The status quo option involves councils continuing to provide three waters services under their existing delivery models. This includes no formal collaboration between councils for the ongoing delivery of water services.

Financial modelling of the status quo option will be undertaken as part of this programme of work. That modelling and the outcomes it projects may differ from Council Long Term Plans or financial projections, as it will apply a standard set of assumptions regarding future regulatory and quality standards.

This option is primarily provided for comparison purposes.

Option 2 – Joint contracts

This option involves the councils of Otago and Southland entering into joint contracts for the provision of core three waters services, including:

- Asset management services (including standardisation of asset management processes, planning tools and data management/capture)
- Project delivery
- Engineering services/design
- Network and treatment operations and maintenance
- Customer services (particularly after hours services)
- Laboratories, sampling or monitoring services.

The full scope of services to be contracted under such arrangements would need to be agreed between councils.

Services may be contracted from either a private sector third party (e.g. WSP), one council, or from a water services organisation.

Funding for this option would be through the contractual agreement.

Benefits

The identified benefits associated with this option include:

- Increased standardisation would improve asset planning across the region and would make it easier for contractors to work with councils. Over time it could unlock further opportunities for joint procurement.
- A shared workforce (provided under contractual arrangements) increases resilience to staff vacancies, and provides improved career opportunities across the regions.
- The combined scale of a contract may mean smaller councils have access to expertise, specialisation, or systems which it may otherwise not be able to afford to procure.
- The scale may allow councils to provide an improved customer level of service than they would otherwise be able to afford or resource.
- Information sharing will be improved.
- There may be potential procurement and operational efficiencies that can be achieved as a result of the scale.
- The options may be compatible with the establishment of a water services organisation including some of the Councils in Otago and Southland, as that organisation may be able to either provide, or procure, some services through the joint contract(s).

The extent of the benefits will be dependent on the suite of services provided and the number of councils that participate.

Risks and disadvantages

The identified risks and disadvantages of this option include:

- The option is unlikely to address any debt constraints issues faced by individual councils.
- With multiple councils being party to the contracts, each council may manage the contracts within their own district, making contract management complex.
- Any savings generated from this option are unlikely on their own to address affordability issues faced by individual councils.
- The option lacks permanency. Participating councils can elect to leave the arrangement at the end of the contract period, and the departure of one or two councils may undermine the ongoing viability of the entire arrangement.
- The arrangement would result in the loss of in-house capability and capacity.

Comparison

Tauranga City Council and Western Bay of Plenty District Council contracted with Watercare Services Limited (Watercare) to jointly invest in a platform that provides an integrated, managed solution for work orders, asset and geospatial data management.

The collaboration was recognised as a finalist in the IPWEA Asset Management Excellence Awards[4]. Watercare has since signalled that it will withdraw from the arrangement, leaving Tauranga City Council and Western Bay of Plenty District Council with the need to replace the three waters asset management platform.

[4] https://apopo.co.nz/three-waters-collaboration/

Option 3 – Shared services arrangements provided through a formal entity

This option involves the councils of the Otago and Southland regions establishing a formal legal entity (most likely a Council Controlled Organisation), to provide or manage the contracting of three waters shared services.

The potential suite of shared services to be provided is consistent with Option 2.

Services may be provided by the entity directly (through direct engagement/employment of staff) or through contracts with third parties.

Funding for this option would be provided through a contractual agreement or would be set in advance by each council.

Benefits

The benefits identified with this option are consistent with Option 2. In addition:

- The establishment of a legal entity to procure shared services creates an additional layer of permanency. However, councils would still be able to withdraw from arrangements under this model.
- Contracting arrangements are simplified. Contracts with third parties would be between the entity and the third party directly. With the entity managing relationships and contracts with the councils.
- This model would allow the entity to evolve over time to provide more services, or eventually take ownership of water assets, if there was a desire for it to do so.

Risks and disadvantages

The risks and disadvantages associated with this option are consistent with Option 2. In addition:

- The risks around option permanency is partially mitigated.
- There will be additional overhead, governance and management costs introduced into the entity model.
- Depending on the contractual arrangement used, this option separates the councils from the service providers and complicates roles and responsibilities.

Comparison

Examples of similar structures include:

- Local Authority Shared Services (LASS) organisations which have been established with varying success elsewhere in New Zealand. These organisations often focus on joint procurement, valuation, and geospatial services.
- The Waikato Road Asset Technical Accord (RATA) which focussed on improved and better aligned asset management principles and data quality through collaboration. RATA is funded through a contractual arrangement, whereby one council is contracted by the Waikato LASS (Co-LAB) to provide the services. The costs are then shared by all councils.

Option 4 – Management CCO

This option involves the councils of the Otago and Southland regions establishing a CCO that is responsible for some of the elements of water services delivery for its shareholding councils/shareholders.

Under this model:

- Councils would still own all three waters assets
- Councils would retain all of their existing and future three waters debt
- Councils would agree a budget with the water services entity (noting that an economic regulator will also influence this)
- Councils would be responsible for setting three waters charges/rates and generating necessary revenue
- Councils would not typically employ three waters staff directly, but may retain a limited amount of three waters expertise to ensure that they have an affective relationship with the water organisation
- The entity would likely not be able to borrow in its own right.

The viability of this option may be impacted by the Local Government Water Services Bill, which is to be introduced to parliament in late 2024.

Funding for this option would be set in advance by each council upon receipt of advice from the water services entity.

Benefits

The benefits identified with this option are consistent with Options 2 and 3. In addition:

- The entity will be able to seek efficiencies and consistency across operations and maintenance contracts throughout the combined regions.
- The entity will be able to better coordinate capital works programmes across the combined regions to improve deliverability.
- The entity will be able to package works to improve the attractiveness of projects to large scale contractors that may not currently operate within some districts.

Risks and disadvantages

The risks and disadvantages of this option include:

- The entity will be responsible for managing operations, maintenance and investment in the water network, but will not have full control of revenue or funding. This is a key challenge for Wellington Water (the only current example of a three waters management CCO in NZ).
- Some risk remains with councils as owners of the three waters infrastructure and being the drinking water supply authority, however councils will have few tools available to manage that risk directly.
- Because budgets need to be agreed between councils and the water services organisation, there is a need for a high level of trust between the organisations.
- While challenging, councils can still withdraw from delivering three waters services through this model.

Comparison

An example of this option is Wellington Water, which provides three waters services through a management CCO for Wellington City Council, Hutt City Council, Porirua City, Council, Upper Hutt City Council, Greater Wellington Regional Council and South Wairarapa District Council.

Option 5 – Multi-council water services organisation

This option involves the councils of the Otago and Southland regions establishing a water services organisation that is responsible for all of the elements of water services delivery for its shareholding councils/shareholders.

Under this model:

- Councils would transfer assets, debt and powers to raise revenue
- There is no assumption that there would be an automatic "harmonisation" of water charges
- There is no assumption that debt would be "pooled" across all ratepayers
- Councils would not typically employ three waters staff directly and are unlikely to have a need to retain internal expertise.

Funding for this option would be determined by the water services entity, and may or may not reflect local pricing differences.

Benefits

The benefits identified with this option are consistent with Option 4. In addition:

- The entity would have its own balance sheet and would be able to borrow up to 500% of its three waters revenue[5]
- The entity will set its own budgets and will control all the risks of delivering three waters services
- The entity will be financially independent from councils, allowing it to more easily meet the future requirements to produce separate financial statements and water services strategies
- The water entity will be solely accountable to its customers/communities for the setting of water charges
- The change would be more permanent.

Risks and disadvantages

The risks and disadvantages of this option include:

- Without appropriate processes in place, some communities may receive higher proportionate levels of investment than others and the prioritisation of investment may differ or change in timing from councils.
- The entity will be able to set three waters prices entirely independently from decisions made by councils, and these decisions may have affordability implications for communities. Economic regulation will mitigate this risk.
- There may be a loss of high value jobs in small districts.

[5] Per LGFA's announcement, the actual lending conditions will differ but will be broadly equivalent to 500% debt to revenue.

- The water services organisation may seek to choose investment options that present the minimum cost to achieve compliance rather than reflecting local community expectations for a higher level of service.

Comparison

The closest comparison to this option is Watercare, except that is wholly owned by Auckland Council and established under the Act that established Auckland Council and its CCOs rather than the Local Government Act. Watercare is financially independent from Auckland Council and currently only provides water and wastewater services.

An Otago – Southland entity would have multiple shareholders.

Assessment of shortlist against strategic objectives

Shortlisted options have been assessed against strategic objectives in the table below.

Assessment of options against criteria has been made at a red/amber/green level based on an assessment of which option provides the best outcomes for the majority of council areas.

We recognise that this approach may mean the preferred option for each council may differ to our overall assessment, based on their specific individual circumstances. This is particularly likely to be the case in relation to the financial criteria.

Assessment of shortlist against strategic objectives	
Deliver three waters services in a way that reflects the importance of water to the health of our residents, visitors, environment and economy	
Option 1 – Status Quo	Three waters services under the status quo operating models include a number of instances where drinking water and wastewater schemes have been non-compliant. Increased regulatory focus will require councils to invest more in their networks in the future, as demonstrated in the financial modelling this will result in significantly higher costs for water consumers (more than three times greater in some cases) or continued non-compliance if funding is constrained due to affordability constraints.
Option 2 – Joint contracts	Will largely be dependent on the extent of services commissioned through the joint contracts. Joint contracting will likely provide some efficiencies through scale, and adoption of common contract requirements and standards. To the extent that joint contracting results in the joint procurement of asset management planning or engineering centre of excellence type services, it is likely that it will result in improved regional regulatory and environmental outcomes.
Option 3 – Shared services arrangements	Per the above, this will be largely dependent on the extent and scale of services that are procured or provided through a shared services arrangement. It is likely these will be more expansive than would otherwise be provided through joint contracting in order to justify the cost and effort of establishing a shared services entity.
Option 4 – Management CCO	A management CCO will be guided by a professional board of directors and management team with a sole focus on delivering three waters services. It will have access to the appropriate capability and capacity to be able to make best for network investment decisions that ensure compliance with relevant regulations and community expectations. However a management CCO will not set its own budgets, and the extent to which it is able to access funding to make appropriate investment will be influenced by individual council funding decisions. The separation of responsibility for funding and investment, along with shared risk between councils and the CCO has shown to be an ineffective model and there is risk attached to it achieving the success the councils seek.

Assessment of shortlist against strategic objectives	
Option 5 – Otago Southland WSE	An Otago Southland WSE will be guided by a professional board of directors and management team with a sole focus on delivering three waters services. It will have access to the appropriate capability and capacity to be able to make best for network investment decisions that ensure compliance with relevant regulations and community expectations. It will have full control over its own funding (subject to an economic regulator) and will therefore have an increased ability to make investments when and where they are needed.
Deliver three waters services that sustainably respond to change in population, economic activity and climate change	
Option 1 – Status Quo	Delivery of investment to respond to population growth requires significant upfront capital and consequential high demand on debt. This will constrain the ability of some councils to respond to change within their regions appropriately as those councils reach their borrowing limits. Alignment of three waters investment planning with urban planning and economic development activities in the existing service delivery model may allow for improved growth and climate resilience planning and response.
Option 2 – Joint contracts	A joint contracting model may provide improved access to specialist skills which may support improved planning to respond to growth or changes in economic activity. However, funding issues would remain meaning this option would have little impact against this objective.
Option 3 – Shared services arrangements	A shared services model may provide improved access to specialist skills which may support improved planning to respond to growth or changes in economic activity. However, funding issues would remain meaning this option would have little impact against this objective.
Option 4 – Management CCO	A management CCO model will allow improved access to specialist skills to support planning for changes in demand. A management CCO may also have increased ability to seek network efficiencies or opportunities to better utilise existing infrastructure across council boundaries. However, funding issues would remain meaning this option would have less of an impact against this objective than if it controlled the funding as well.
Option 5 – Otago Southland WSE	An Otago Southland WSE will allow improved access to specialist skills to support planning for changes in demand. It may also have increased ability to seek network efficiencies or opportunities to better utilise existing infrastructure across council boundaries. Separation from each council's urban planning and economic development activities will mean increased interaction and interface is required to ensure that objectives are aligned.

Assessment of shortlist against strategic objectives	
Deliver three waters services through a model that is responsive to the local needs of our communities	
Option 1 – Status Quo	Councils currently have strong relationships with the communities that they serve and are governed by a group of democratically elected councillors. Decisions made by councils are inherently local and reflect the needs of local communities, if they can afford it. However, existing non-compliance in some council areas demonstrates that the competing priorities and affordability constraints within councils have prevented investment in three water infrastructure.
Option 2 – Joint contracts	A joint contracting model would not impact the ability for the service delivery model to be responsive to local needs compared to the status quo arrangement. Impacts on local responsiveness may differ depending on the services which are jointly contracted. Competition for funding at a local level will remain, which will constrain investment in some small communities.
Option 3 – Shared services arrangements	A shared services model is unlikely to have impacts on local responsiveness compared to the status quo model. Impacts on local responsiveness will be dependent on the services which are shared, and a formal shared services arrangement is likely to have a broader scope of services shared than a joint contracting model. Competition for funding at a local level will remain, which will constrain investment in some small communities.
Option 4 – Management CCO	A management CCO model will likely centralise most investment planning, service delivery, and customer engagement functions through one or two central offices. There will likely be provisions to retain local employment, however staff will not be located within council offices. Operations and maintenance teams will remain local and will be able to continue to deliver existing service levels in terms of responsiveness to calls. Councils will retain funding control, and accordingly there will necessarily be regular interaction between the management CCO and its council shareholders. Service levels and standards would largely be determined by the entity, and regulators. Competition for funding at a local level will remain, which will constrain investment in some small communities.

Assessment of shortlist against strategic objectives	
Option 5 – Otago Southland WSE	An Otago Southland WSE model will likely centralise most investment planning, service delivery, and customer engagement functions through one or two central offices. There will likely be provisions to retain local employment, however staff will not be located within council offices. Operations and maintenance teams will remain local and will be able to continue to deliver existing service levels in terms of responsiveness to calls. There will only be an indirect link between councils and the water services entity, however mechanisms such as a customer forum could be established to capture additional local input.
Provide efficient and effective services through a model that supports robust decision making and the development of enduring capability and capacity	
Option 1 – Status Quo	Decision making must balance the needs of communities across a range of activities that compete for limited resources and funding. In council's with constrained funding, these trade-offs and balancing the investment needs of council's wider operations with the requirements for water (driven by economic regulation) create risk for both water services and other council services and have led to non-compliance in many areas. Councils compete within the same employment market for key skills, and offer comparatively limited career development opportunities within the sector when compared with larger dedicated water entities.
Option 2 – Joint contracts	Decision making will ultimately remain the same as the existing model, where access to limited funding must be balanced across a range of activities. Councils will jointly acquire access to specialist skills through a joint contracting model, minimising competition for resources. Security of work means contracted parties may be able to further develop clear career pathways, though this increase in capability and capacity would likely sit outside the local government sector.
Option 3 – Shared services arrangements	Decision making will ultimately remain the same as the existing model, where access to limited funding must be balanced across a range of activities. Councils will jointly acquire access to specialist skills through a shared services model, minimising competition for resources. A shared services entity may employ staff to services directly rather than contracting a third party, potentially creating career pathways within local government, and building capability and capacity directly within the sector. This may depend on the suite of services that are shared.

Assessment of shortlist against strategic objectives	
Option 4 – Management CCO	A management CCO model would have sufficient scale and breadth of services to attract a broad range of skills and provide opportunities for staff to specialise in areas of need. The entity would be a single employer within the Otago and Southland regions, reducing competition for staff. Funding decisions would remain with councils, however a management CCO would have a responsibility for the prioritisation of work.
Option 5 – Otago Southland WSE	An Otago Southland WSE would have the greatest scale and breadth of services of all the options to attract a broad range of skills and provide opportunities for staff to specialise in areas of need. The entity would be a single employer within the Otago and Southland regions, reducing competition for staff. Decision making would be independent of decisions made by councils and competing priorities of communities. Decisions will be driven by compliance with economic, service and consumer regulation and risk based decision making.
Ensure that three waters services are delivered through a model that is enduring and financially sustainable	
Option 1 – Status Quo	The financial sustainability of the existing service delivery arrangements will largely be dependent on each councils specific circumstances. New financial ringfencing rules will add additional compliance burdens. Seven of the eight councils in our modelling have three waters rates that increase by more than double over the next 10 years. Of these, three need to increase revenue to remain within debt to revenue limits.
Option 2 – Joint contracts	This arrangement would offer no significant improvement to financial sustainability compared to the status quo. Some operating and capital works efficiencies may be able to be achieved depending on the services that are jointly contracted and only for the period of the contract. These are will not be as significant as those that could be achieved through a management CCO or asset owning water services entity.
Option 3 – Shared services arrangements	This arrangement would offer no significant improvement to financial sustainability compared to the status quo. Some operating and capital works efficiencies will likely be able to be achieved, assuming a larger base of services are shared than would be under a joint contracting model. Efficiencies will not be as significant as the management CCO or water Services entity options. Infrastructure shared services in New Zealand have generally not endured, the uncertainty of that will limit the efficiency and benefits that can be gained.

Assessment of shortlist against strategic objectives	
Option 4 – Management CCO	This arrangement would not create financial separation of water and non-water debt and would not provide access to borrowing at 500% of three waters revenue. This arrangement would likely create moderate operating and capital works efficiencies but would not be able to optimise its capital structure in the same way an Otago Southland WSE would. Funding issues have been a key constraint for the performance of Wellington Water, who note within their own statement of intent that their "*total operational funding remains approximately 30% below the level required to effectively deliver these services*".
Option 5 – Otago Southland WSE	The impacts of this options for each council are presented in the financial modelling section. This option would allow full separation of three waters debt from other council debt, allowing councils to more freely access debt to fund investment in community facilities, roads or other activities. This option presents the lowest future cost of three waters services for 84% of the population of the Otago and Southland regions in 2034 and beyond.

Financial modelling

Introduction

This section summarises the initial outputs of our financial modelling for an Otago Southland WSE.

The modelling compares a "comparator case" with an Otago Southland WSE at a regional level. This comparator case is not the same as the existing service delivery model for councils, and therefore may not align with each council's own projections regarding three waters price paths. Detailed comparison of each councils existing service delivery model, with our comparator case has also been provided to assist councils in interpreting results.

The initial results focus on key metrics:

- Household charges for three waters
- Capital investment
- Debt

Detailed financial modelling assumptions are outlined in **Appendix One and Two**.

Impacts of Councils not taking part in the WSE

We have undertaken high level modelling of the impacts of the three largest population centres opting not to take part in the Otago Southland WSE. This preliminary modelling is subject to further refinement once potential arrangements are more clearly understood.

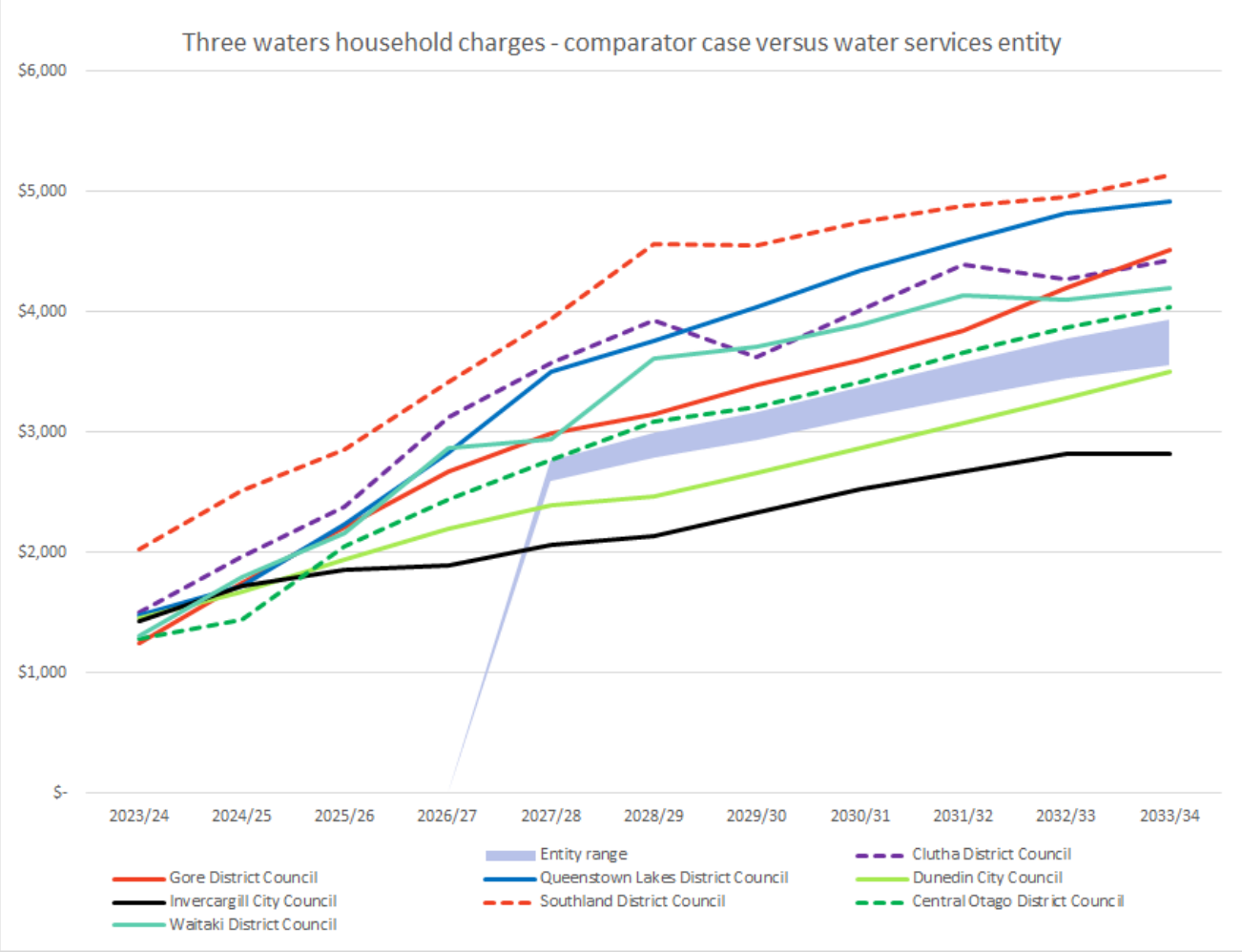
However, based on our modelling, there do not appear to be any scenarios where the exclusion of one or more population centres significantly undermines the model. Initial data suggests that under various scenarios the difference in three waters charges in 2034 could be between -8% through to +26%, with the variance reducing over 30 years to -6% through to +12%.

Regional results

Average household charges

The chart below presents (nominal) average household charges for the base comparator case for each council against the average regional charge for an Otago Southland WSE.

The range of charges for the entity is represented by the shaded are behind the chart. The range represents uncertainty regarding costs and benefits of an Otago Southland WSE, and includes an upper range which incorporates double the costs with half the benefits, and a lower range which represents a 50% uplift in available efficiencies (from 15% on capital expenditure and 16% on operating expenditure to 22% on capital expenditure and 23% on operating expenditure).

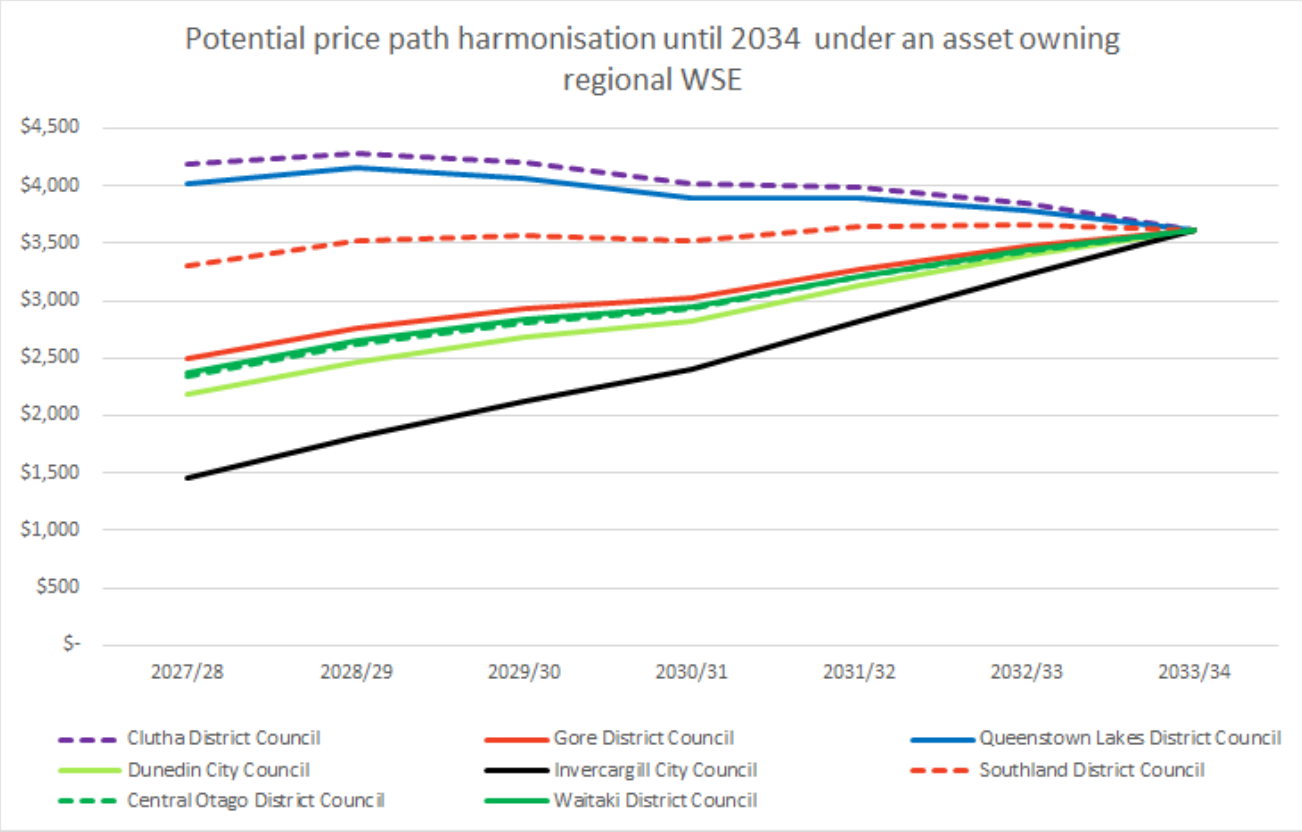


The chart shows 84% of water consumers are likely to experience lower water bills under Otago Southland WSE within the 10 year LTP period to 2034. By 2034, only Invercargill has three waters charges that are below the average household for an Otago Southland WSE.

While the Otago Southland WSE price path is presented as an average charge across the combined regions, we note that this price path could instead be harmonised over time (or not at all).

A potential path towards harmonisation of water charges across the combined regions is presented below. This shows charges for some councils starting at a higher point than they otherwise would have, with a long term convergence of pricing in 2034. The full details of a price path would need to be agreed if an Otago Southland WSE were to be established.

The price path for Invercargill under this scenario remains more expensive than either its existing service delivery model or our comparator case.

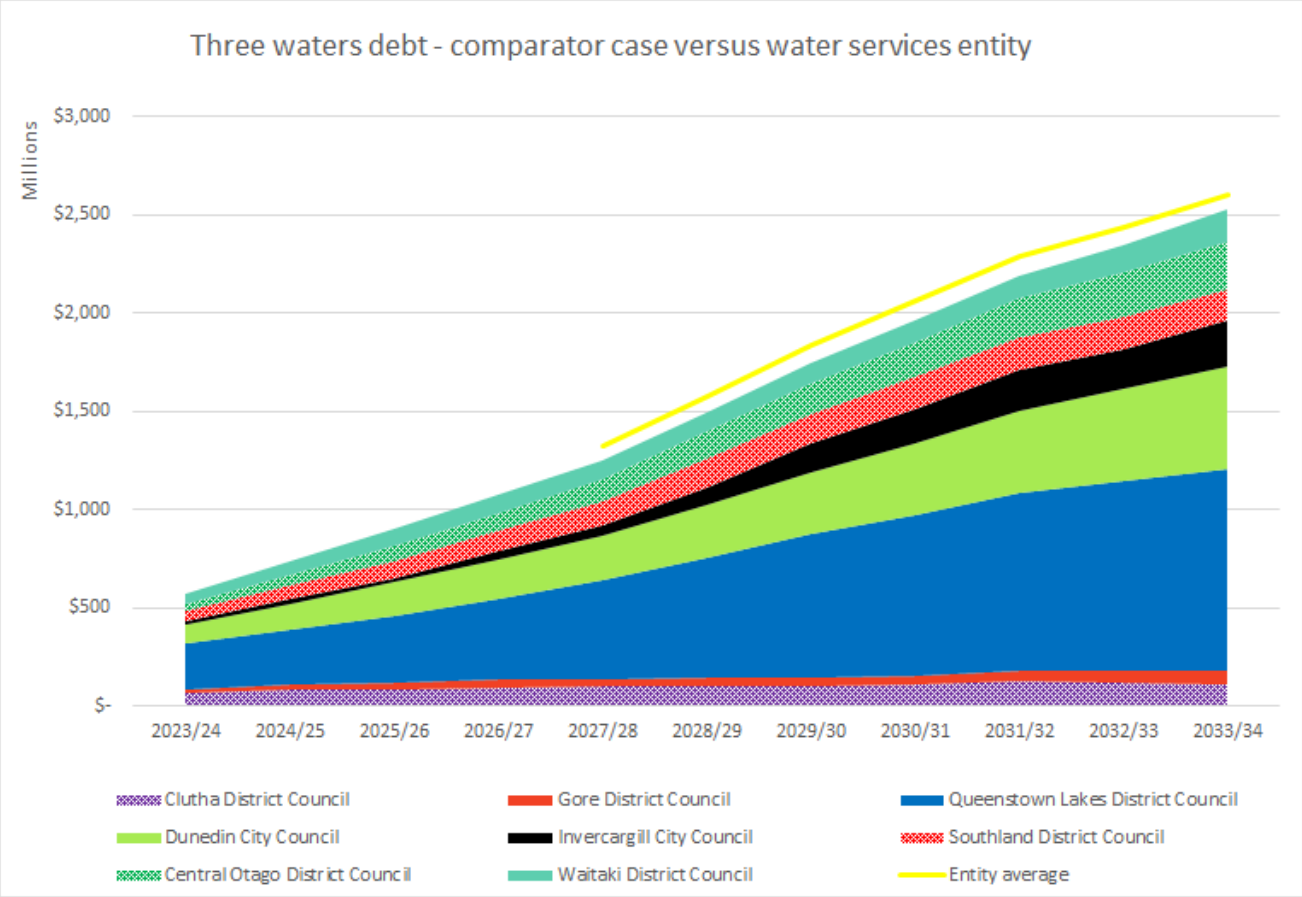


Debt

The chart below shows total Otago Southland WSE debt compared to the combined three waters debt of the participating councils.

The chart highlights that an Otago Southland WSE is able to utilise higher leveraging than the combined councils. This means that the entity does not need to generate as much additional revenue to support its borrowing requirements. Importantly, as highlighted later in this report, an Otago Southland WSE ultimately borrows less over a 30 year period.

Queenstown and Dunedin contribute the most debt an Otago Southland WSE, although debt for all councils grows over the modelling period.

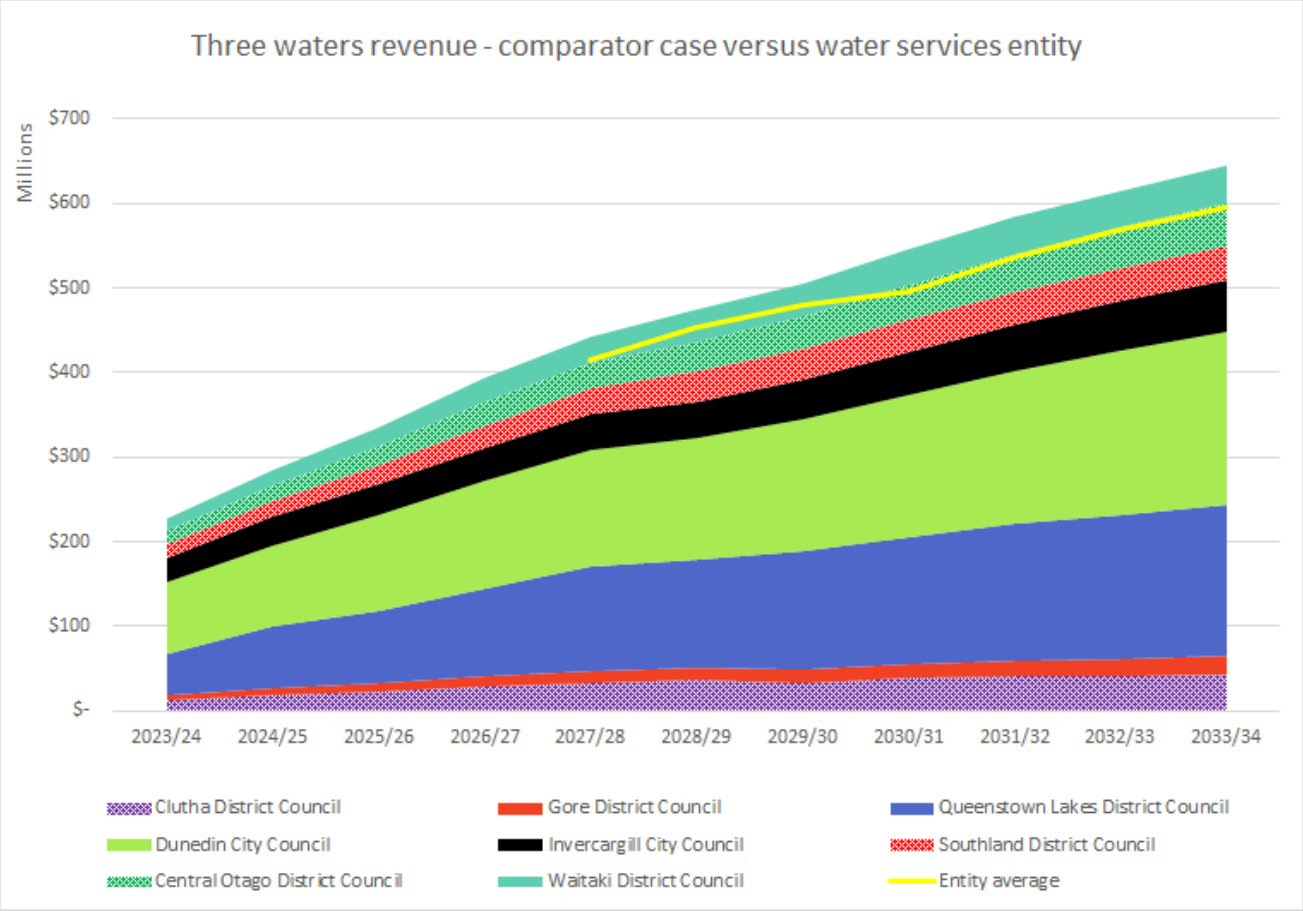


Revenue

The chart below shows total revenue for an Otago Southland WSE compared to the combined three waters revenue of the participating councils.

The water services entity is able to leverage its balance sheet to a greater extent than individual councils. This means it is able to reduce its overall revenue requirements to support that debt, reducing charges to consumers compared to individual councils.

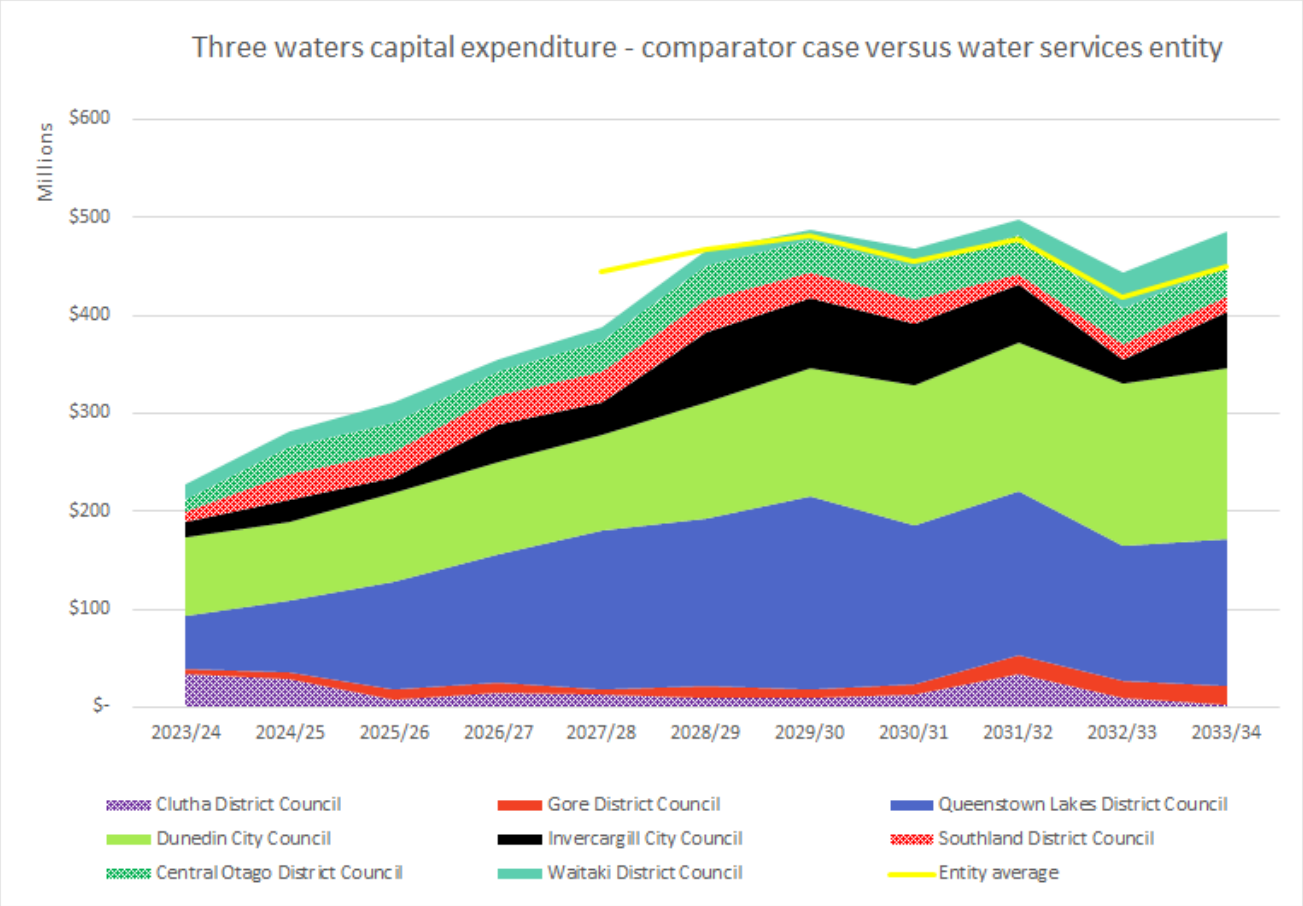
The modelling shows that Queenstown and Dunedin have the greatest share of revenue at a combined, pre Otago Southland WSE level.



Capital expenditure

The chart below shows total capital expenditure for an Otago Southland WSE compared to the combined three waters debt of the participating councils.

The Otago Southland WSE has higher capital expenditure levels than the combined councils in its first year, reflecting the need to incur significant establishment costs[6]. Over time, an Otago Southland WSE is able to reduce capital expenditure compared to the combined councils as it begins to achieve organisational efficiencies through improved asset management practice and coordinated procurement to deliver the same programme of works.



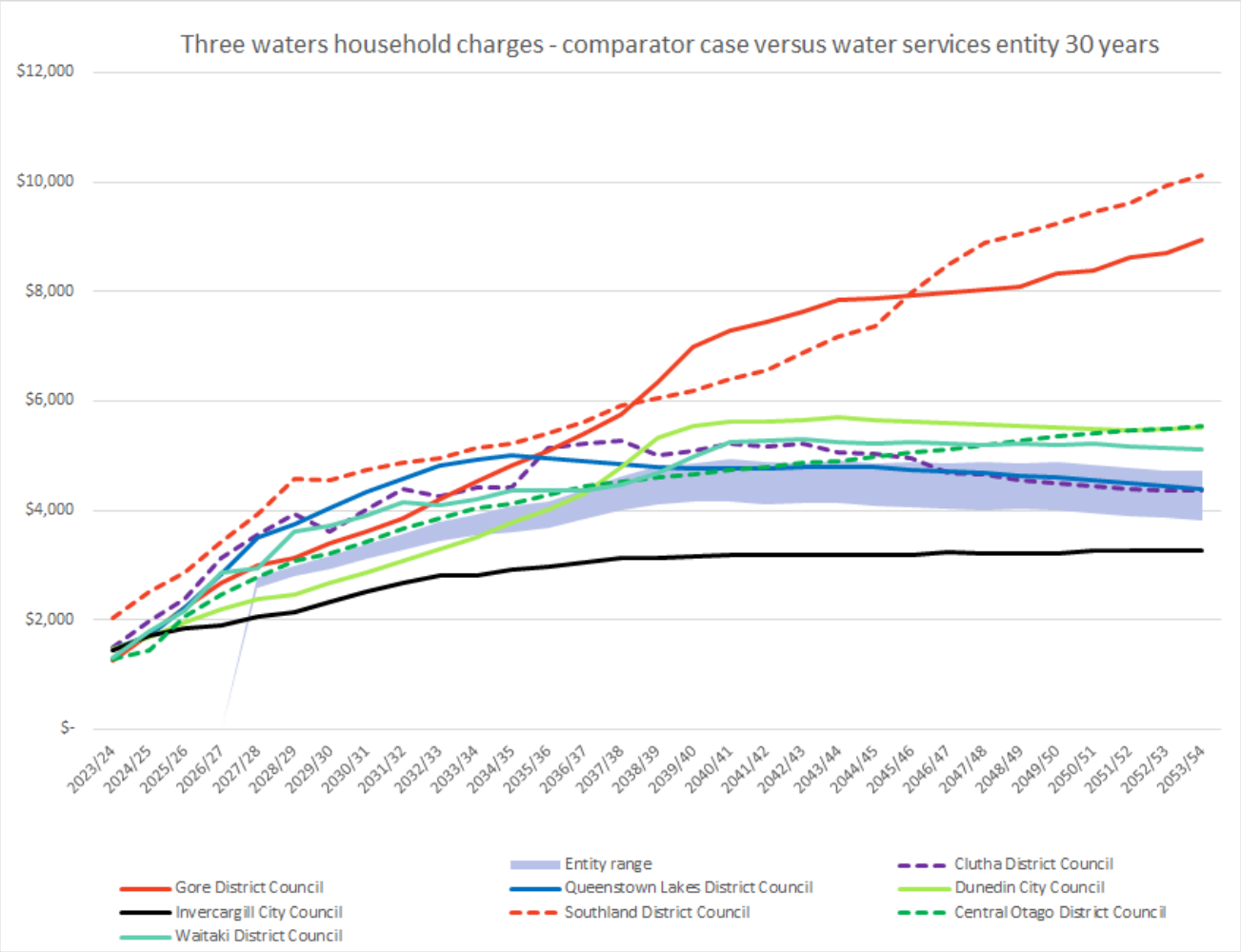
[6] Refer to Appendix One for the modelling assumptions used

30 year projections

We have included indicative 30 years projections in this iteration of modelling. Please note that these projections rely in infrastructure strategy capital projections. In our experience the reliability of capital forecasts for years 11 – 30 in infrastructure strategies varies significantly between councils, as such long term projections should be considered indicative only.

30 year charges

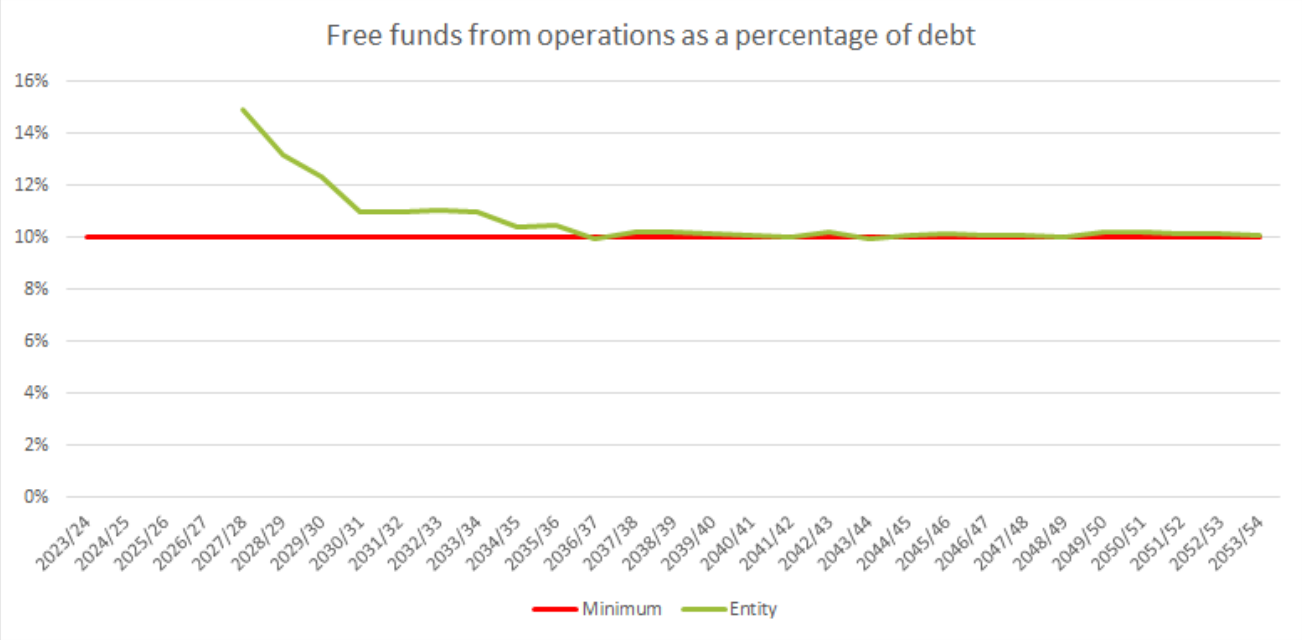
Modelling over 30 years shows that the entity is likely to remain more affordable for the majority of water consumers over the long term.



30 year borrowing profile

Our modelling assumes that the Otago Southland WSE will maintain an FFO to debt ratio of 10% over the long term. We note that as the economic regulation regime and the Otago Southland WSE mature it is possible that the entity may be able to become even more highly leveraged over time, should it so desire.

The FFO ratio adopted as a benchmark in our reporting is conservative, and we understand that it is likely that LGFA would provide flexibility in lending covenants in the case of an emergency.

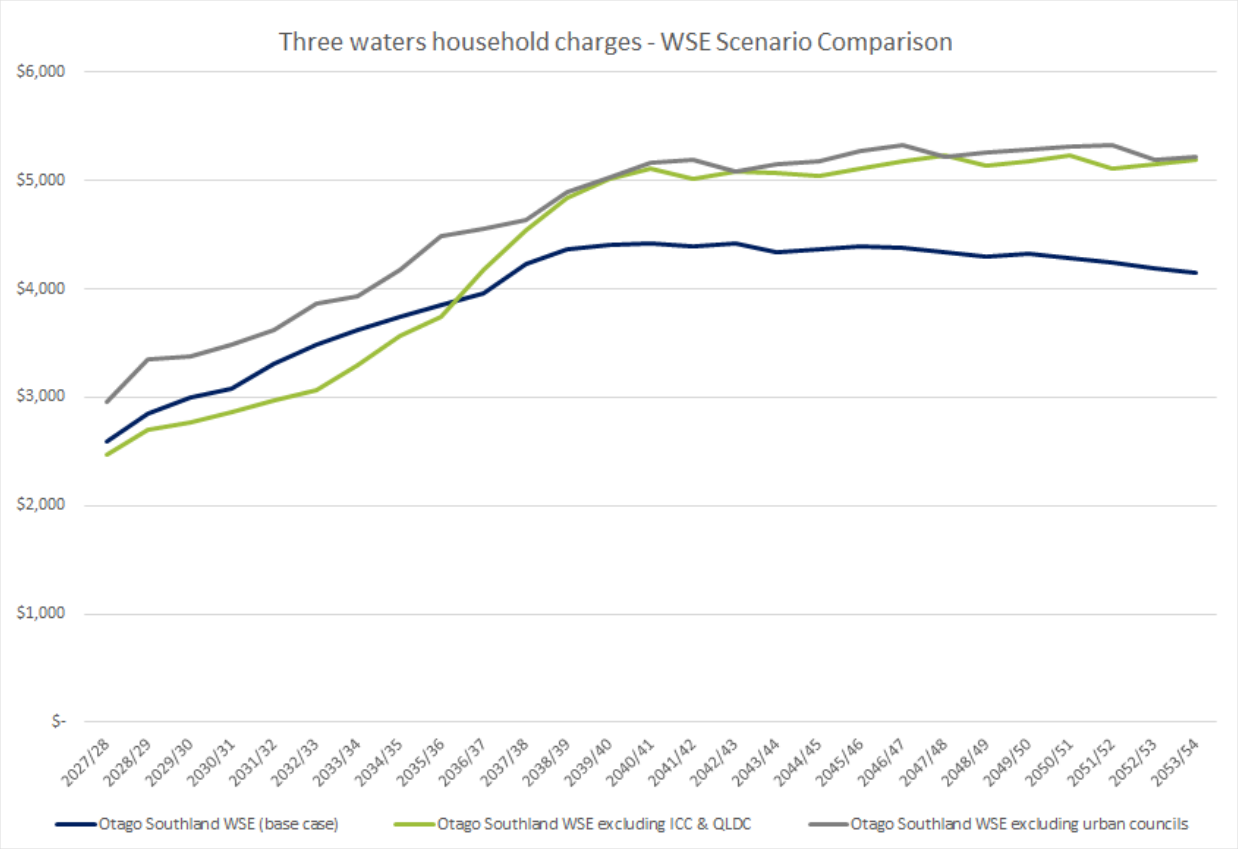


Alternative scenarios

In addition to the base case Otago Southland WSE, we have also completed modelling for two additional scenarios. These scenarios were agreed by the LWDW working group and chief executives, and include:

- Otago Southland excluding urban councils (DCC, ICC, and QLDC)
- Otago Southland excluding ICC and QLDC

The full results of that modelling are presented in **Appendix Five.** The chart below shows a comparison of the average entity price path across all three scenarios.



The modelling of additional scenarios shows that a WSE remains an attractive option for councils in Otago and Southland even without Invercargill, Dunedin or Queenstown. In both of our alternative scenarios, most water consumers in all the areas that take part in the entity are likely to have lower household three waters charges by 2034.

While a combined Otago Southland entity may appear to have a lower overall price path, benefits are likely to exist under all arrangements.

Importantly, the results presented here are the results of *financial modelling only.* An Otago Southland WSE that excludes urban areas will still be comparatively small at a national level. With total revenue of $128 million in 2027/28, such an entity would be a similar size to Dunedin alone, but would be spread over a significantly larger geographic area. In order to be effective, such an entity would need to operate differently, reflecting the different demographics of its customer base.

Individual council results

For ease of comparison, the results for each individual council are presented below. This includes the impacts of sensitivity testing in the comparator case, and the existing service delivery model based on unadjusted financial information.

A detailed description on our approach to determining a comparator case is outlined in this report under the heading “Assumptions applied to our “comparator” scenarios”.

Central Otago District Council

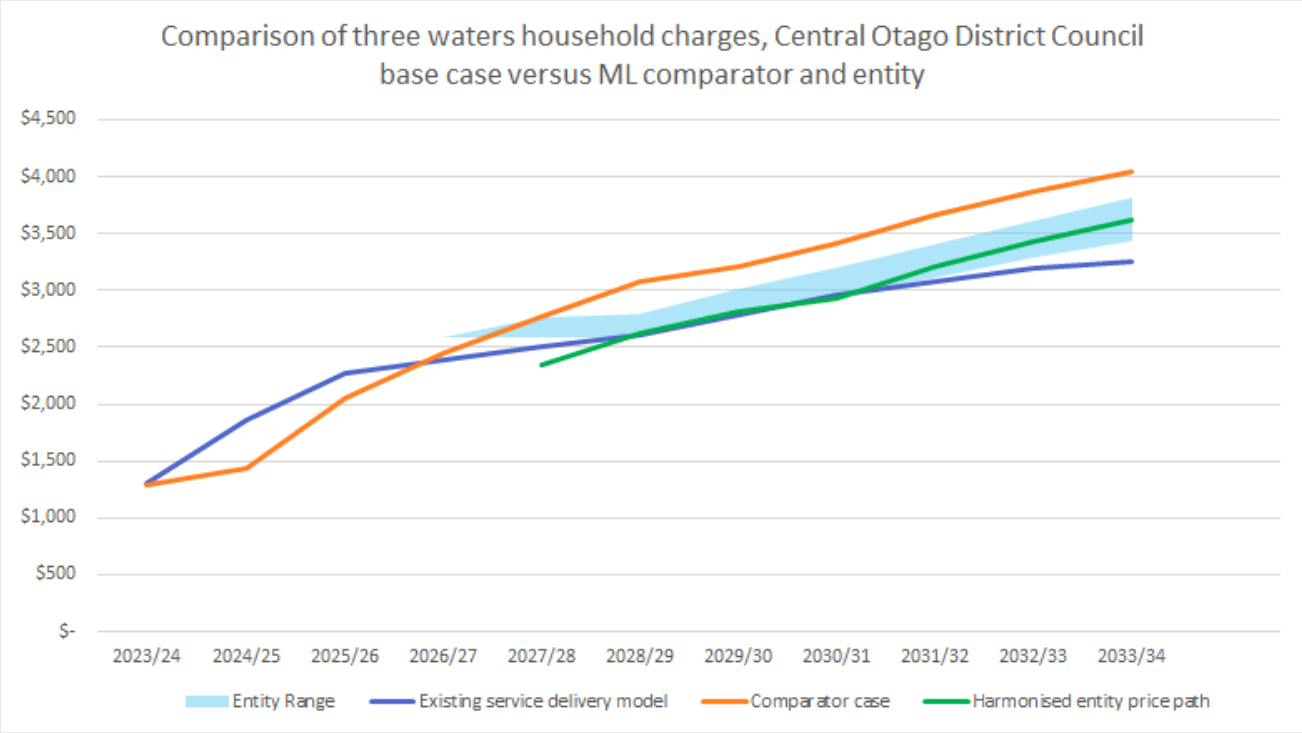
Household charges

The chart below shows Central Otago’s base case financial projections against our comparator modelling and an Otago Southland WSE. Notable differences between Central Otago’s base case and our comparator scenario are:

- We have modelled a smoother price path in the early years to allow for a progressive increase in depreciation funding from 2023/24 onwards. From 2027/28 our modelling assumes 100% depreciation funding, resulting in a higher overall charge when compared to the existing model where this ranges between 20-50%.
- As a result of the higher average charge, borrowing requirements are lower in the comparator scenario. Subsequently, debt to revenue in later years is lower than the existing service delivery model.
- Depreciation in our comparator case is up to 35% lower than Council’s existing service model projection, largely due to the use of lower depreciation rates.

While our comparator option shows the Otago Southland WSE as providing a more affordable price path for water consumers in Central Otago, Council’s own base financial information shows a price path that is lower than the Otago Southland WSE.

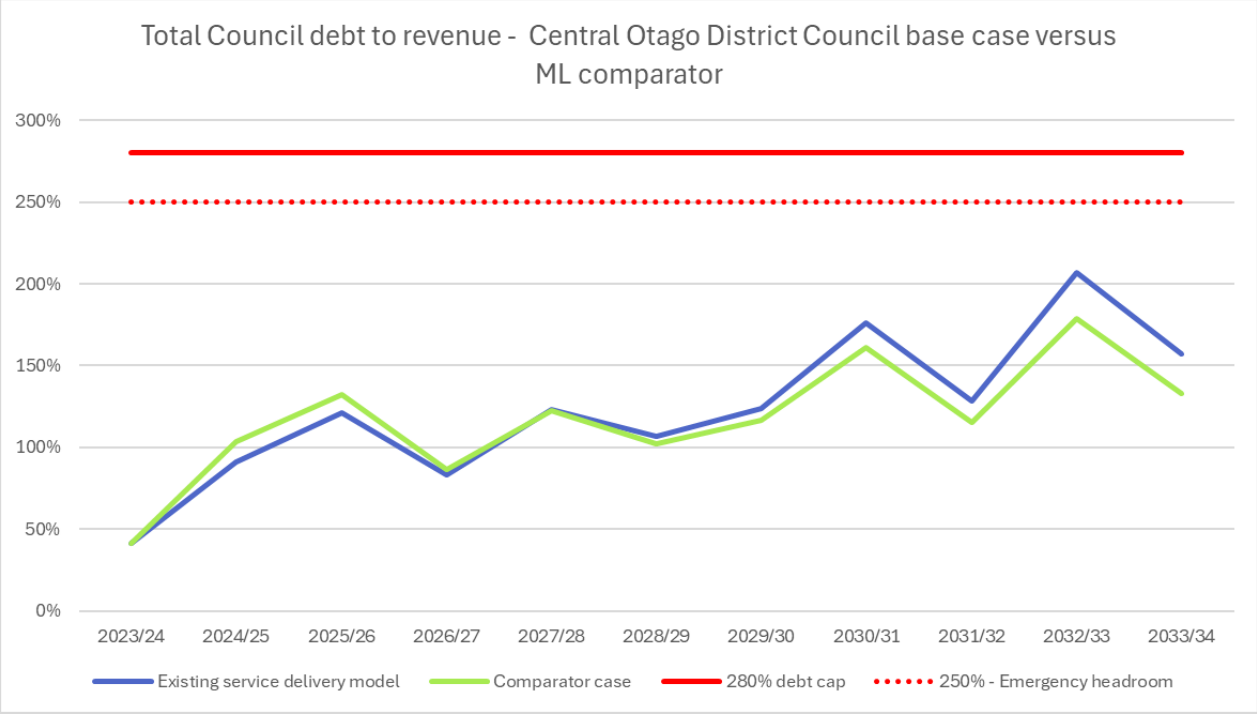
It is possible that if the Otago Southland WSE adopted the same depreciation rates and funding approaches as applied in Central Otago’s own base case, that it’s price path would be lower.



Total Council debt to revenue

The chart below shows a comparison of total council debt to revenue under Central Otago's base case financial projections and our comparator modelling. The results are broadly consistent, with differences mainly being the result of the treatment of depreciation calculations and funding.

In all cases debt remains within LGFA's lending covenants.



Clutha District Council

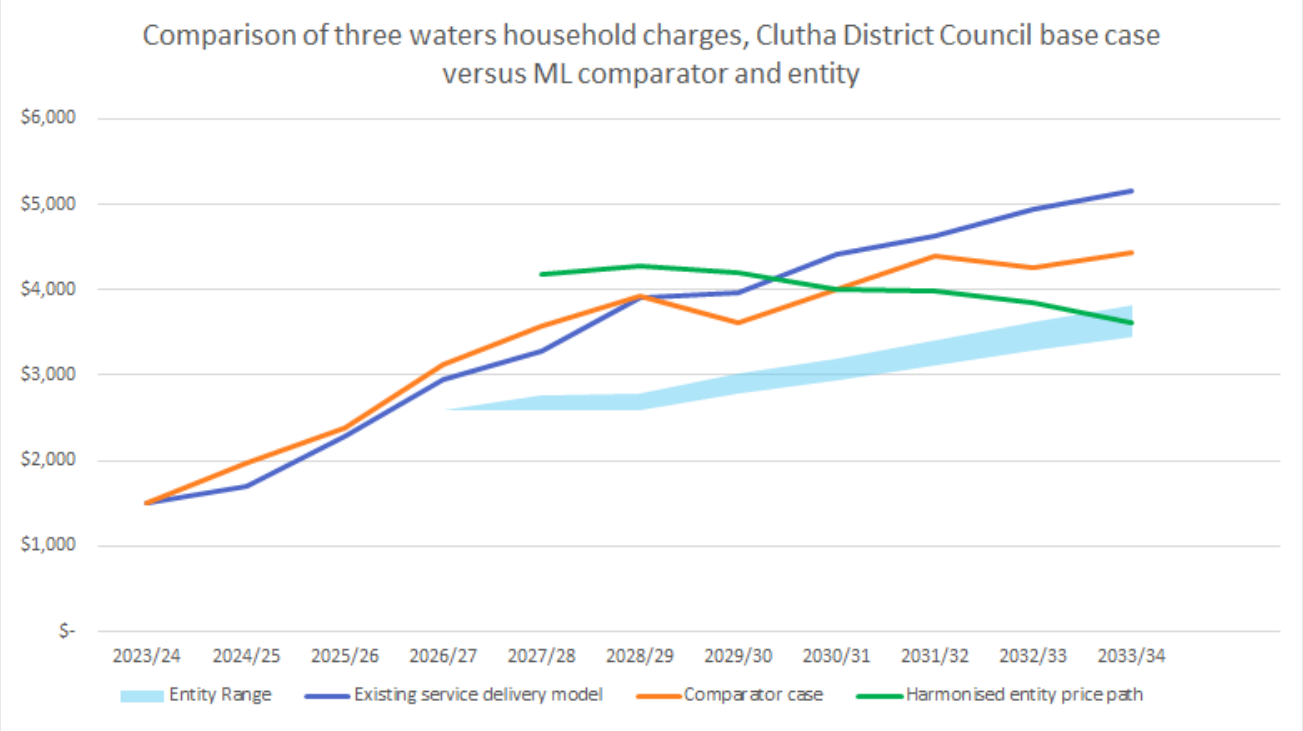
Household charges

The chart below shows Clutha's base case financial projections against our comparator modelling and an Otago Southland WSE. Notable differences between Clutha's base case and our comparator scenario are:

- Our comparator includes a reduction in proposed capital works programme costs to reflect signalled regulatory changes to wastewater treatment standards and small scale wastewater treatment plants. As a consequence, our comparator case includes less investment than Clutha's base case.
- We have modelled a steeper price path in early years. This has resulted in earlier repayment and control of debt, allowing for smaller increases later. This price path has been modelled to ensure that Clutha's overall debt to revenue ratio remains below 250% throughout the modelling period.

While our comparator option shows the existing service delivery model as providing a more affordable price path for water consumers in Clutha, Council's own base financial information shows a price path that is more affordable under an Otago Southland WSE.

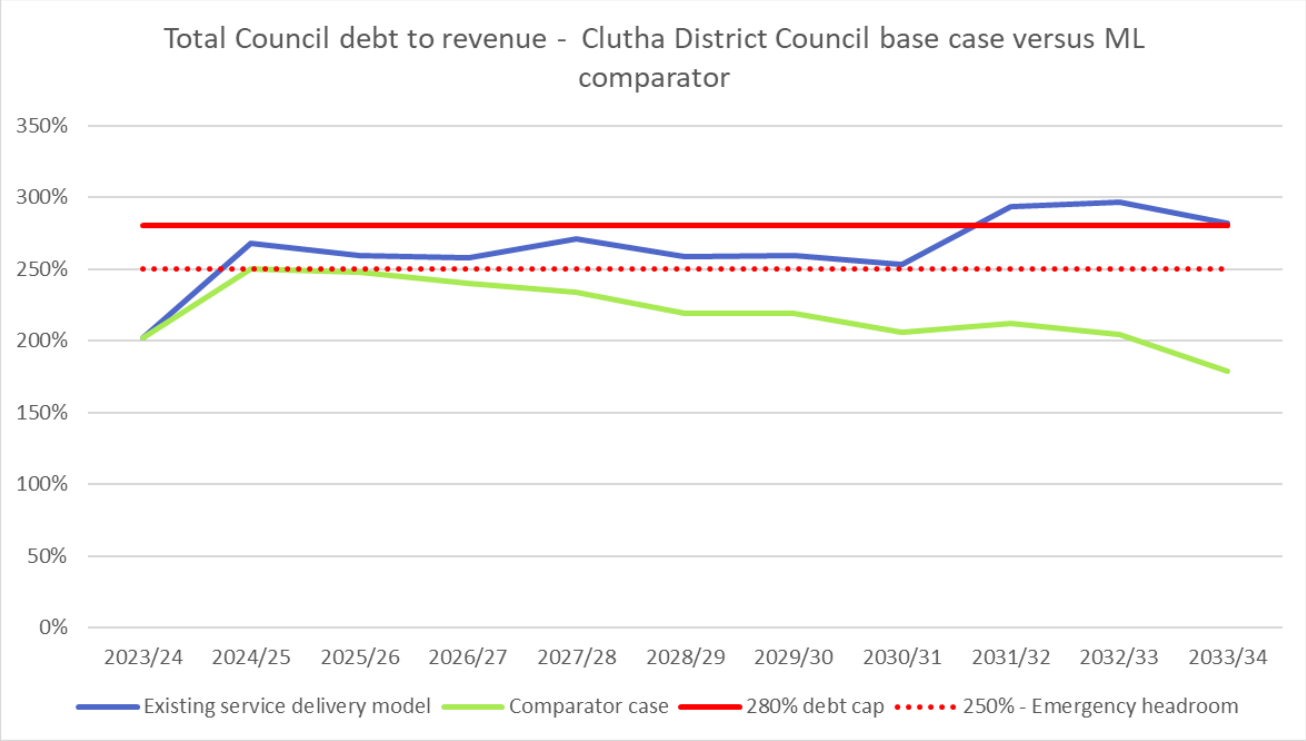
The harmonised price path shows a slight increase in charges on establishment of the water services entity, with prices decreasing to below a comparator case by 2031.



Total Council debt to revenue

The chart below shows a comparison of total council debt to revenue under Clutha's base case financial projections and our comparator modelling. It highlights that we have modelled a price path that ensures Council's debt to revenue ratio remains below 250%.

This compares to the existing service delivery model which sees debt exceed 280% by 2032. We note that Council's own LTP shows it remaining under 280% debt to revenue until the end of the 2034 year at least.



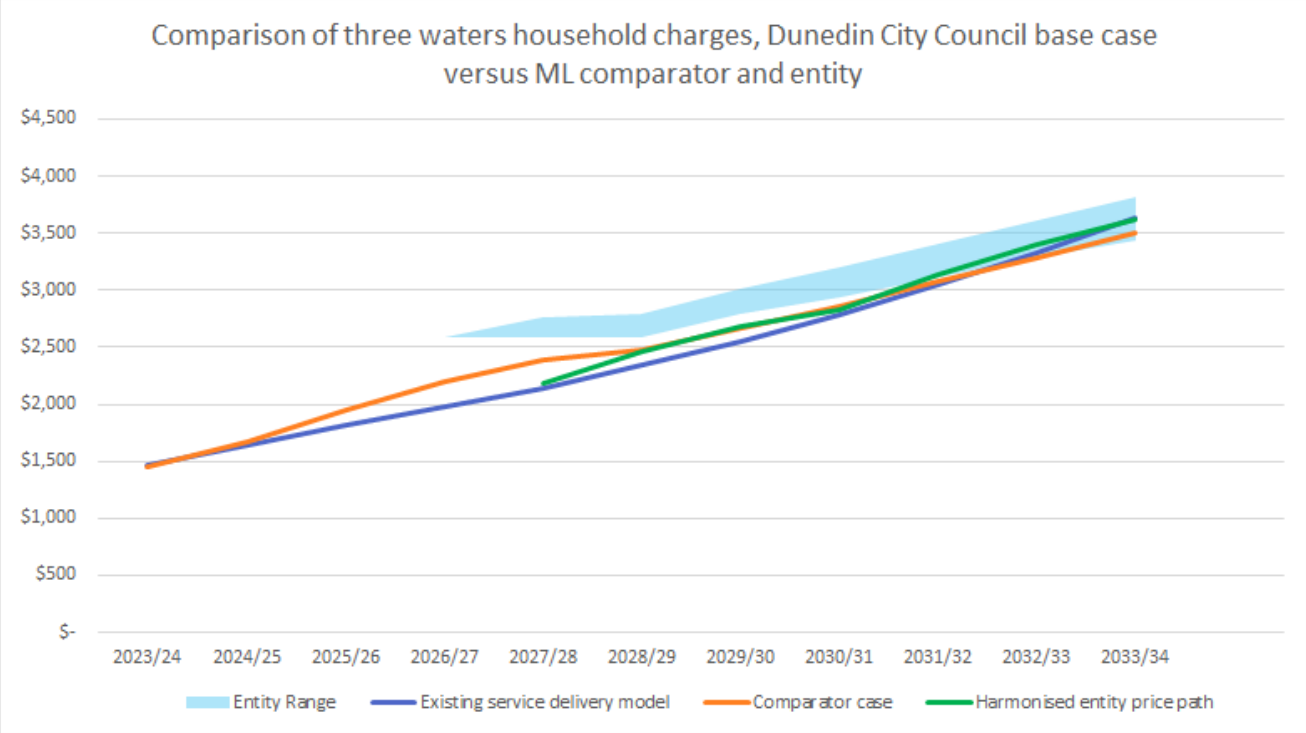
Dunedin City Council

Household charges

The chart below shows Dunedin's base case financial projections against our comparator modelling and an Otago Southland WSE. While the comparator case and base case show similar price and debt paths, it is worth noting that Dunedin's base case financial information is subject to the following caveats.

- Dunedin's base case financial information has been prepared specifically for this project, and does not reflect an agreed LTP budget.
- Base case modelling assumes that Council will remain within a debt to revenue limit of 250% (for the whole of council) during the period to 2034.
- A consistent rates increase of 10% per annum (12% in year one) has been modelled across all council activities.

Modelling shows that three waters charges for Dunedin fall within the lower range of prices modelled for an Otago Southland WSE by 2034. By 2036 our comparator for Dunedin has higher three waters charges than those of the Otago Southland WSE, as demonstrated in our 30 year modelling.



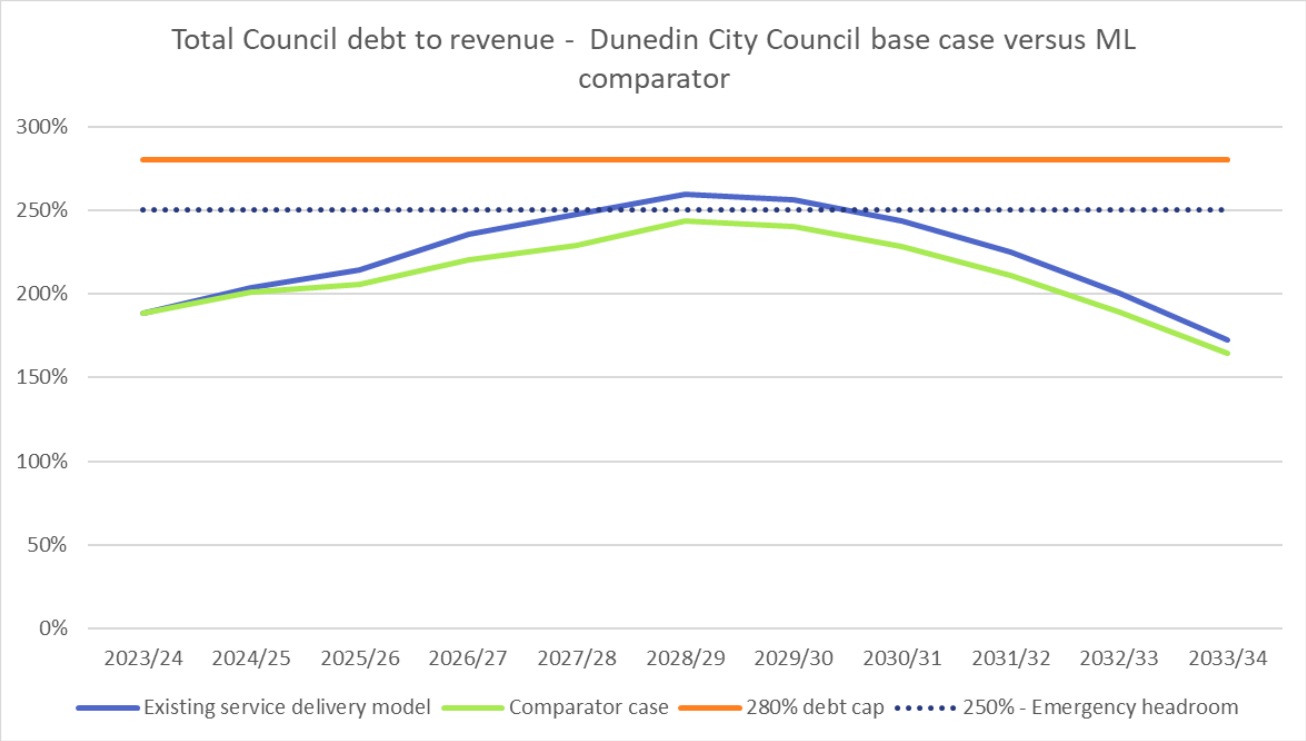
Total Council debt to revenue

The chart below shows a comparison of total council debt to revenue under Dunedin's base case financial projections and our comparator modelling. There is a significant deviation in the financial projections, consistent with the commentary provided under the heading "household charges".

Our modelling has included the addition of further revenue to ensure that Dunedin stays within the LGFA lending covenants. Given high levels of non-three waters debt, some of this reduction in the debt to revenue ratio may otherwise be able to be achieved through an increase in general rates or other repayment of non-three waters debt.

This compares to the existing service delivery model which sees debt exceed 400% during the modelling period.

Significant future capital investment beyond 2034 requires Dunedin to maintain a large amount of borrowing headroom during the 10 year LTP period to support future borrowing requirements without the need for substantial future rates rises.



Gore District Council

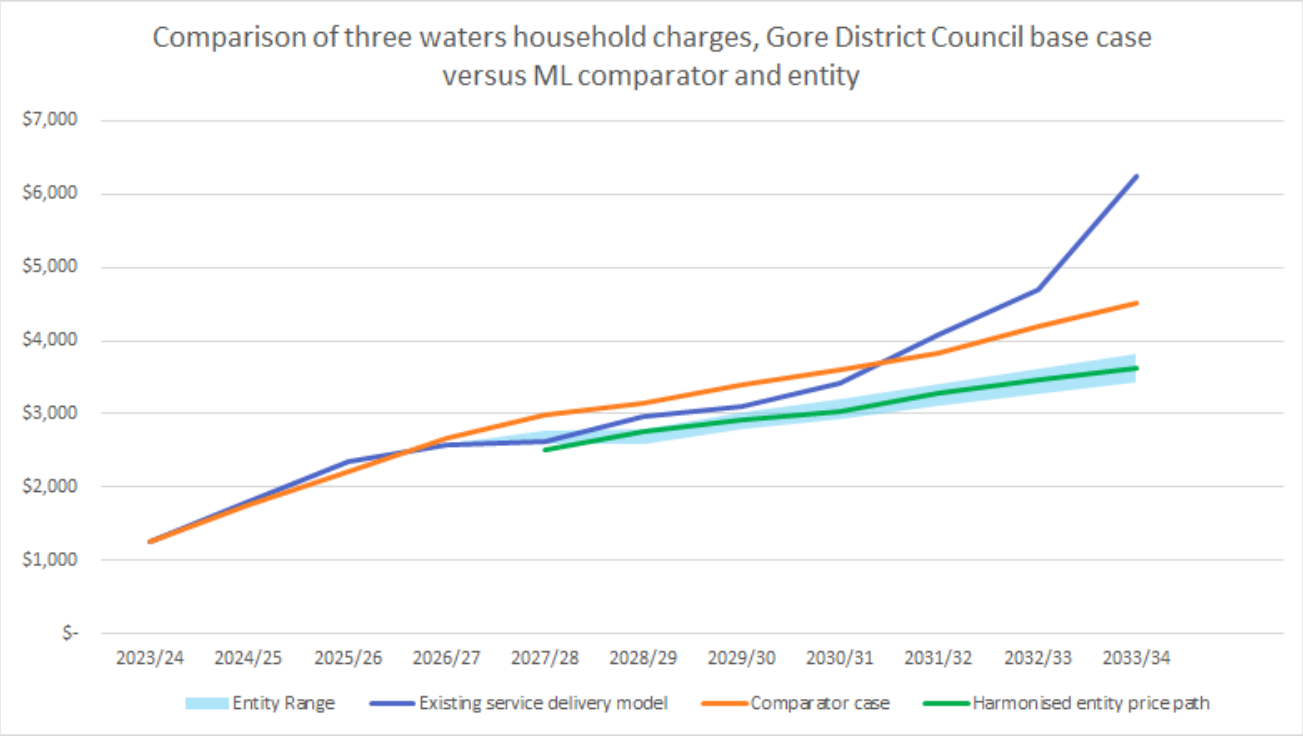
Household charges

The chart below shows Gore's base case financial projections against our comparator modelling and an Otago Southland WSE. Until the outer years from 2030/31 onwards the price path and debt to revenue for both scenarios is reasonably consistent, with only minor variations due to factors such as depreciation rates and the rate of depreciation funding.

A material deviation occurs from this point onward due to an adjustment to the capital profile for Wastewater. Approximately $70M of upgrade spending from 2030/31 to 2033/34 has been removed from the original RFI submission based on GDC's most recent options analysis, which includes the deferral of construction work for the Gore wastewater treatment plant.

This adjustment was applied without a corresponding reduction to the interest associated with funding the original capital spend. Final model refinements will necessitate adjusting this factor in the existing service delivery model.

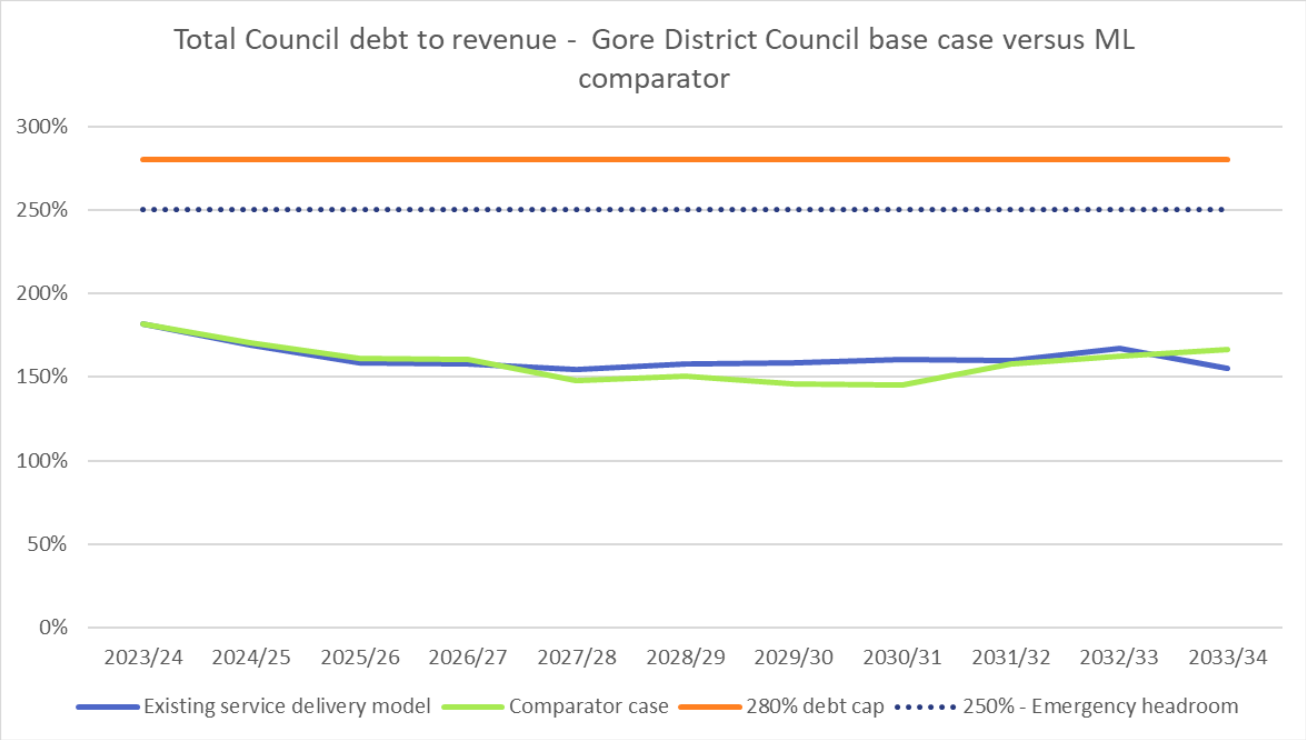
In all cases modelling demonstrates that an Otago Southland WSE is likely to provide a more affordable price path for water consumers in Gore.



Total Council debt to revenue

The chart below shows a comparison of total council debt to revenue under Gore's base case financial projections and our comparator modelling. The results are broadly consistent, with differences mainly being the result of the treatment of depreciation calculations and funding.

In all cases, Gore remains within the LGFA's lending covenants, during the ten year modelling period.



Invercargill City Council

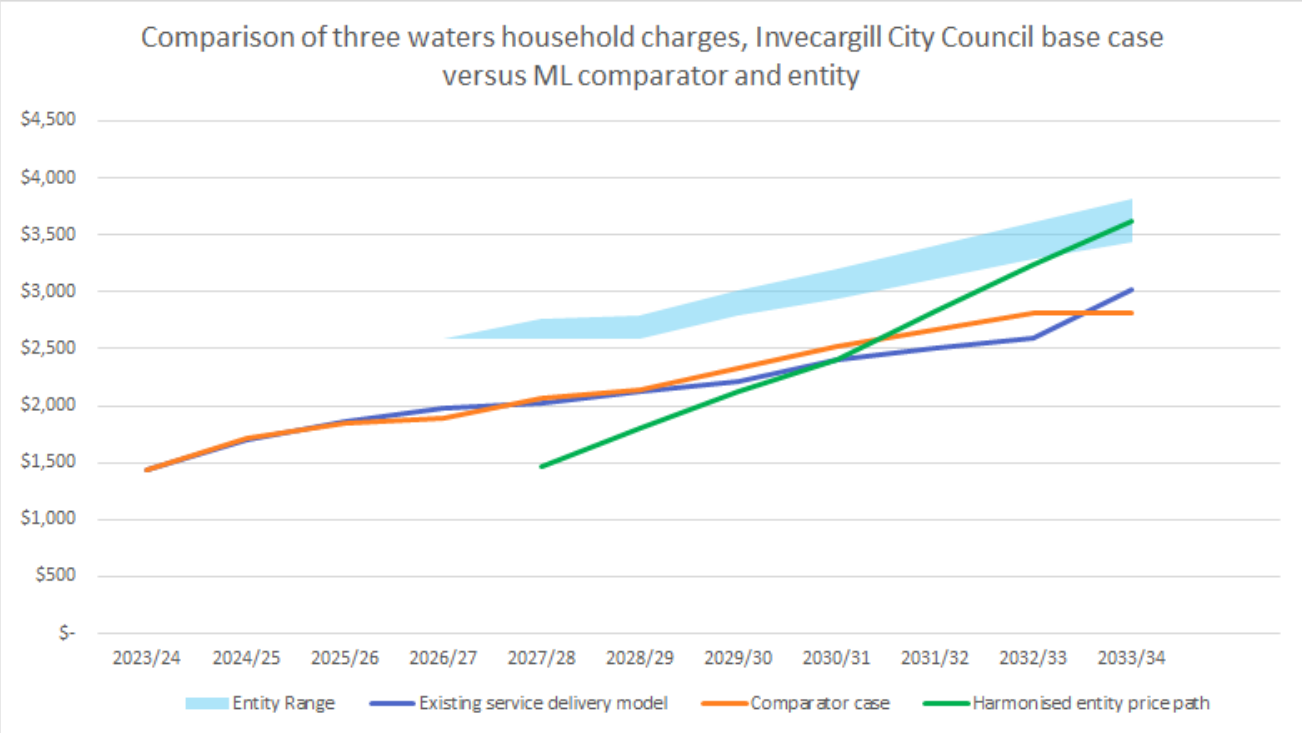
Household charges

The chart below shows Invercargill's base case financial projections against our comparator modelling and an Otago Southland WSE.

The two price paths are broadly consistent, reflecting differences that arise as a result of adjustments to the calculation of borrowing costs, depreciation, and depreciation funding.

In all circumstances, Invercargill continuing to adopt its existing service delivery model provides a more affordable price path for water consumers in Invercargill than joining an Otago Southland WSE.

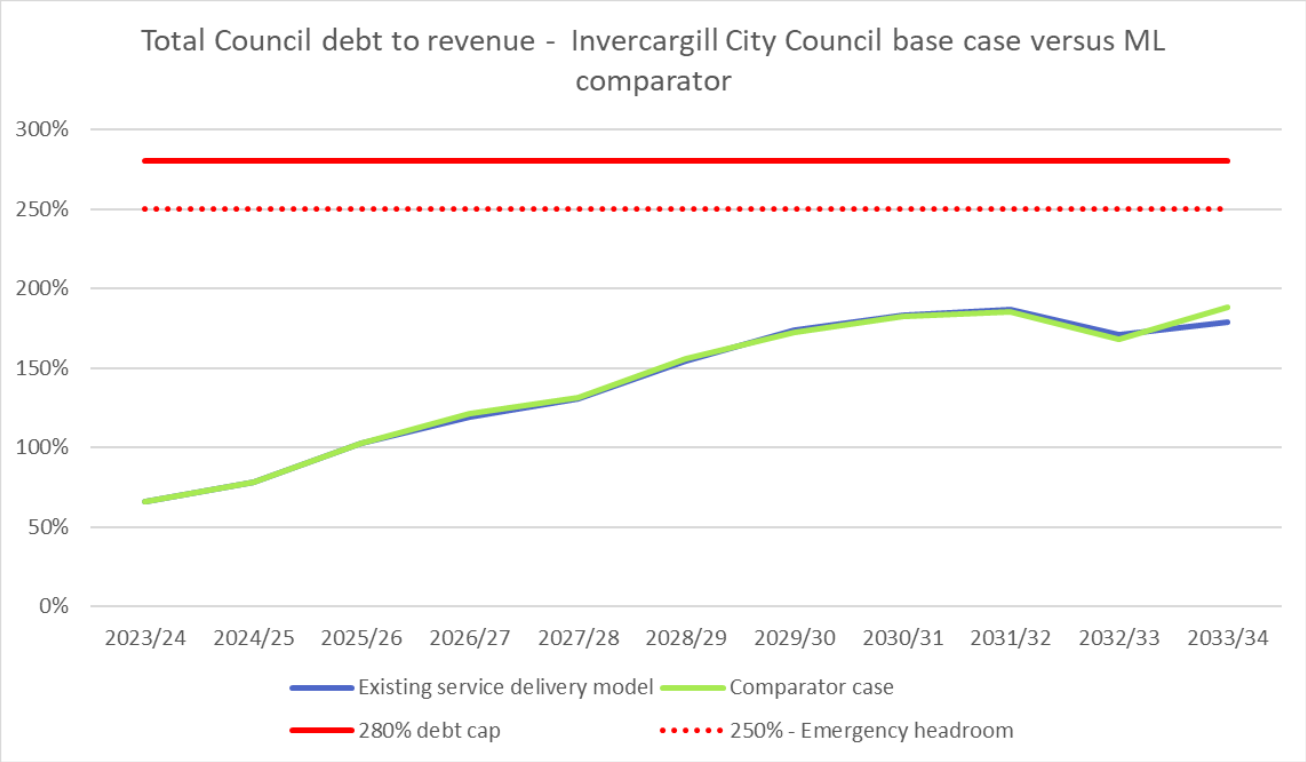
Council may wish to consider alternative, hybrid service delivery models that allow it to continue to collaborate with other councils in the region if it does not wish to join an Otago Southland WSE.



Total Council debt to revenue

The chart below shows a comparison of total council debt to revenue under Invercargill's base case financial projections and our comparator modelling. The results are broadly consistent, with differences mainly being the result of the treatment of depreciation calculations and funding.

In all cases debt remains within LGFA's lending covenants.



Queenstown Lakes District Council

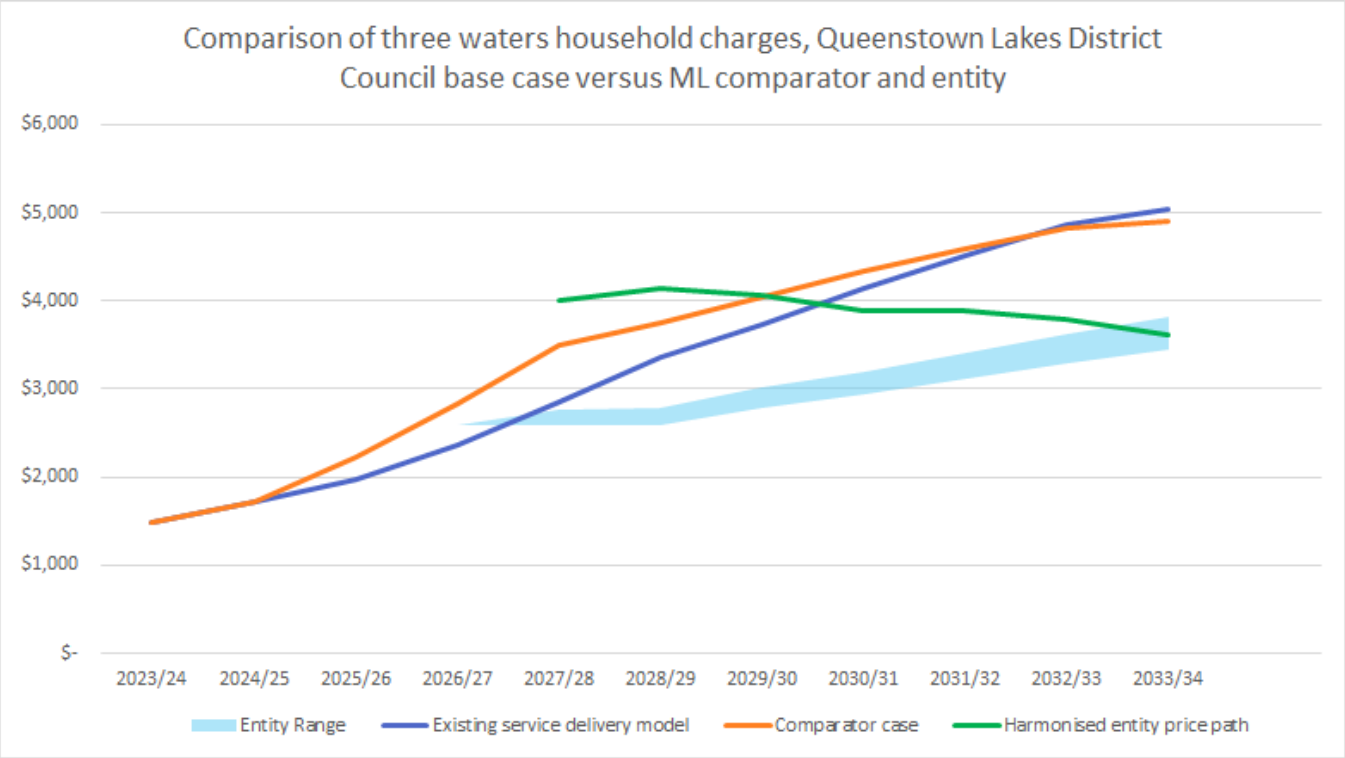
Household charges

The chart below shows Queenstown's base case financial projections against our comparator modelling and an Otago Southland WSE.

The two price paths are broadly consistent, reflecting differences that arise as a result of adjustments to the calculation of borrowing costs, depreciation, and depreciation funding. Specifically, we have modelled:

- Water services depreciation at 1.48% of the previous year's closing gross replacement cost of assets, compared to QLDC's 1.56%
- Wastewater depreciation at 1.62% of the previous year's closing gross replacement cost of assets, compared to QLDC's 1.63%
- Stormwater depreciation at 1.32% of the previous year's closing gross replacement cost of assets, compared to QLDC's 1.52%
- Interest costs at 5.52% of the previous year's closing debt balance compared to QLDC's average of 5.1% over the LTP period.

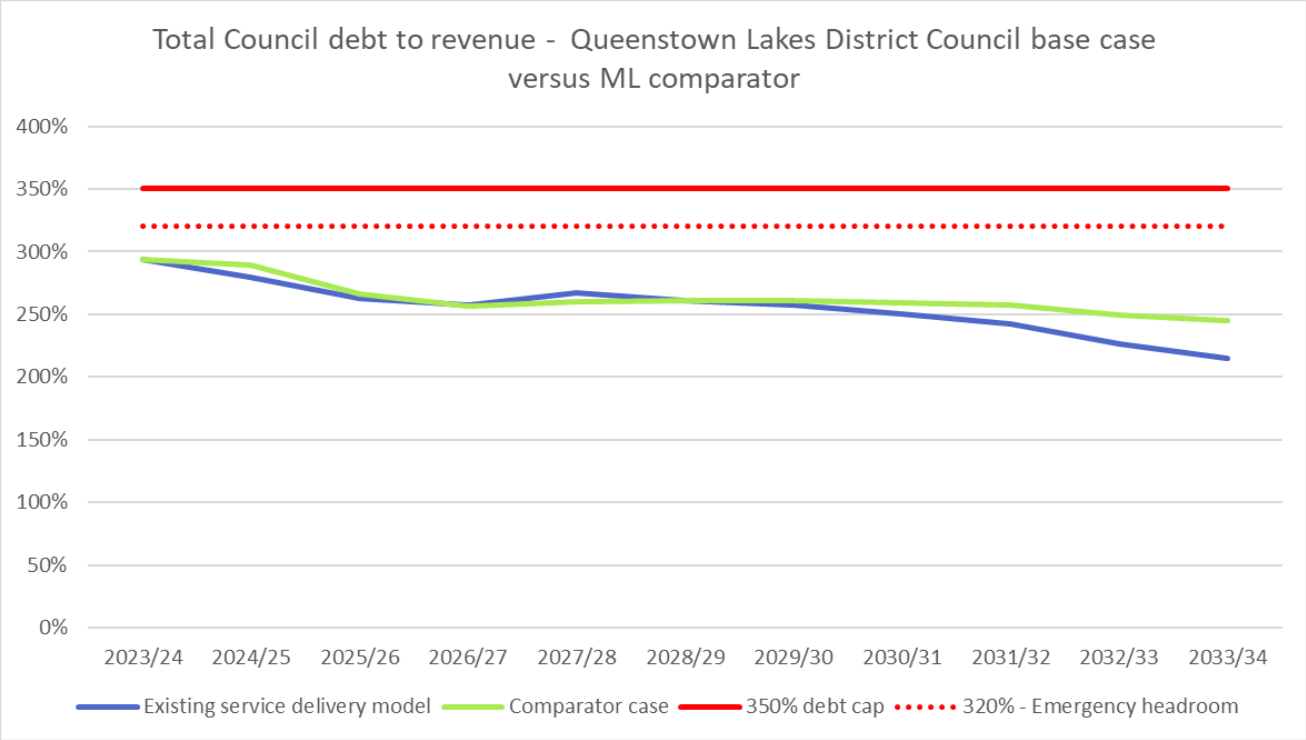
In all circumstances, the Otago Southland WSE provides a more affordable price path for water consumers in Queenstown. Under a harmonised price path QLDC charges start marginally higher than our comparator case, but reduce to be lower than all scenarios by 2030.



Total Council debt to revenue

The chart below shows a comparison of total council debt to revenue under Queenstown's base case financial projections and our comparator modelling. The results are broadly consistent, with differences mainly being the result of the treatment of depreciation calculations and funding.

In all cases debt remains within Queenstown's debt to revenue limit of 350%.



Southland District Council

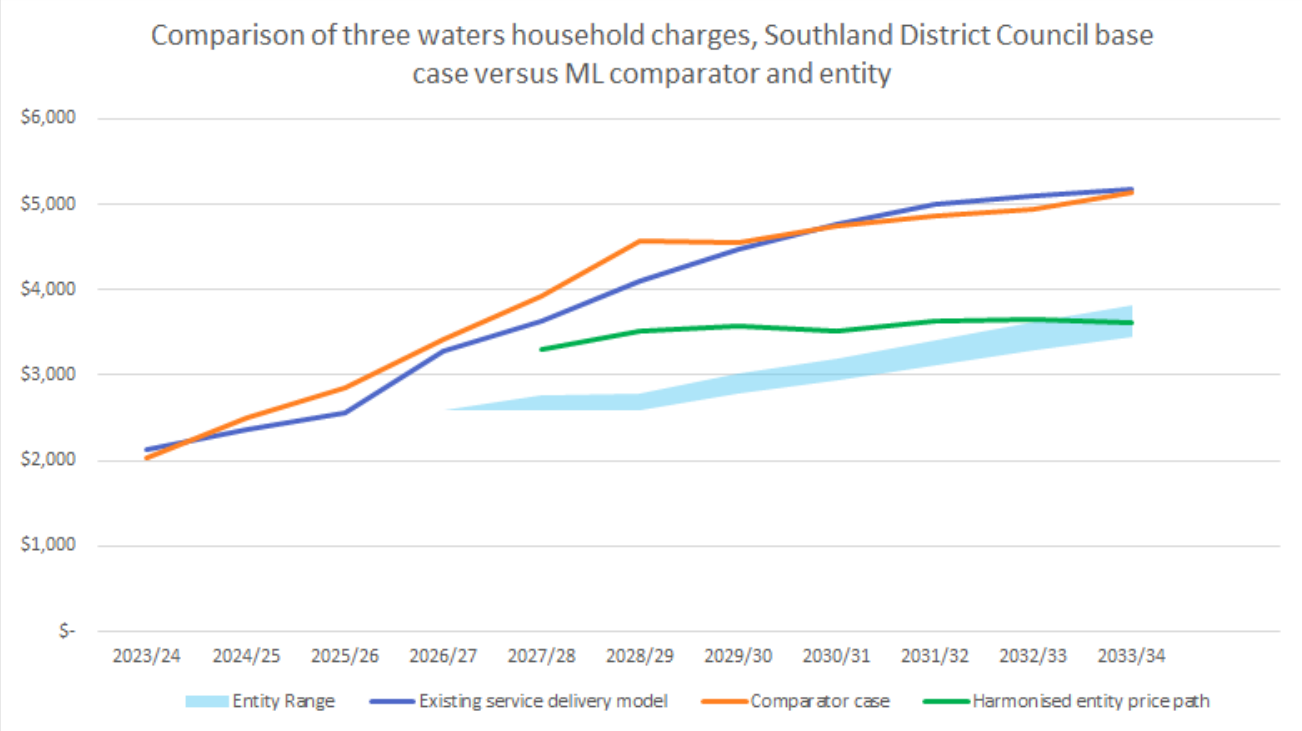
Household charges

The chart below shows Southland's base case financial projections against our comparator modelling and an Otago Southland WSE.

The two price paths are broadly consistent, reflecting minor differences as a result of adjustments to the calculation of borrowing costs, depreciation, and depreciation funding.

Our modelling includes total depreciation charges that are approximately 5% lower than those modelled in Southland's long term plan information provided. Full funding of depreciation is the most significant driver of changes between the modelled price path in the comparator case versus Council's existing service delivery model.

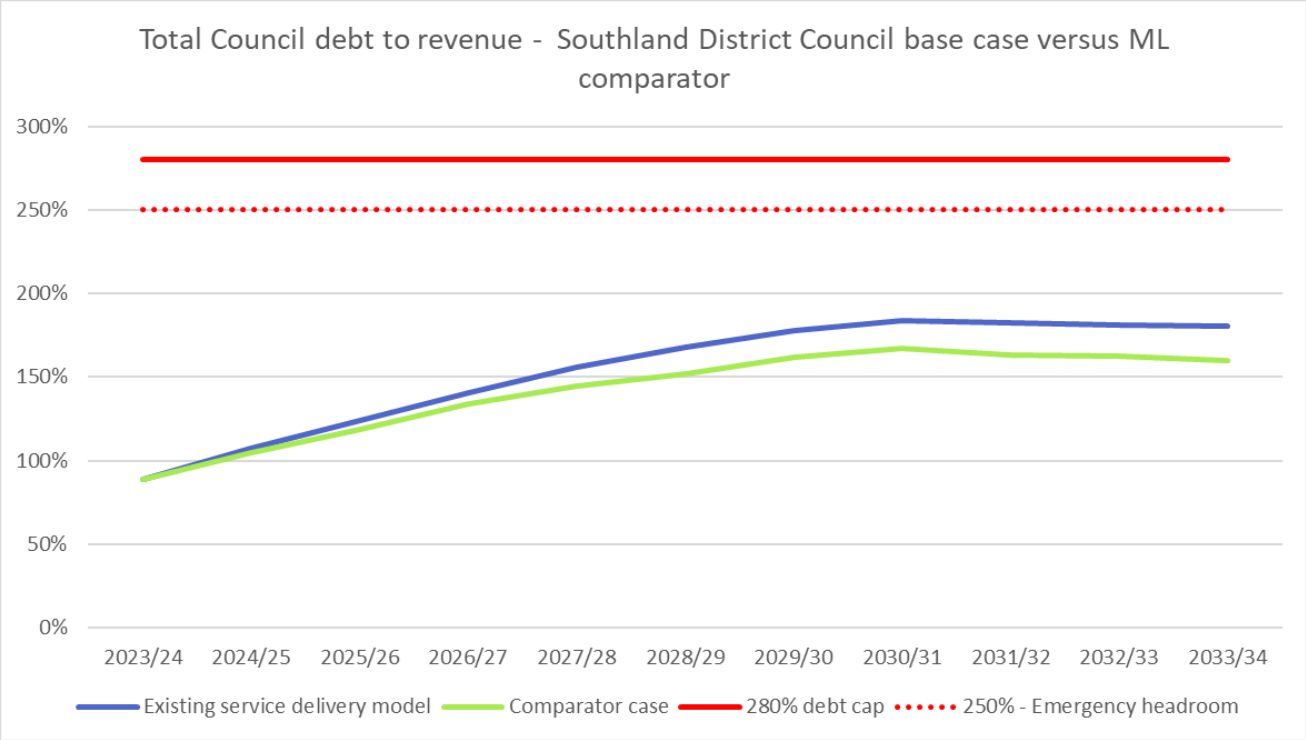
In all circumstances, the Otago Southland WSE provides a more affordable price path for water consumers in Southland.



Total Council debt to revenue

The chart below shows a comparison of total council debt to revenue under Southland's base case financial projections and our comparator modelling. The results are broadly consistent, with differences mainly being the result of the treatment of depreciation calculations and funding.

In all cases, Southland remains within LGFA lending covenants.



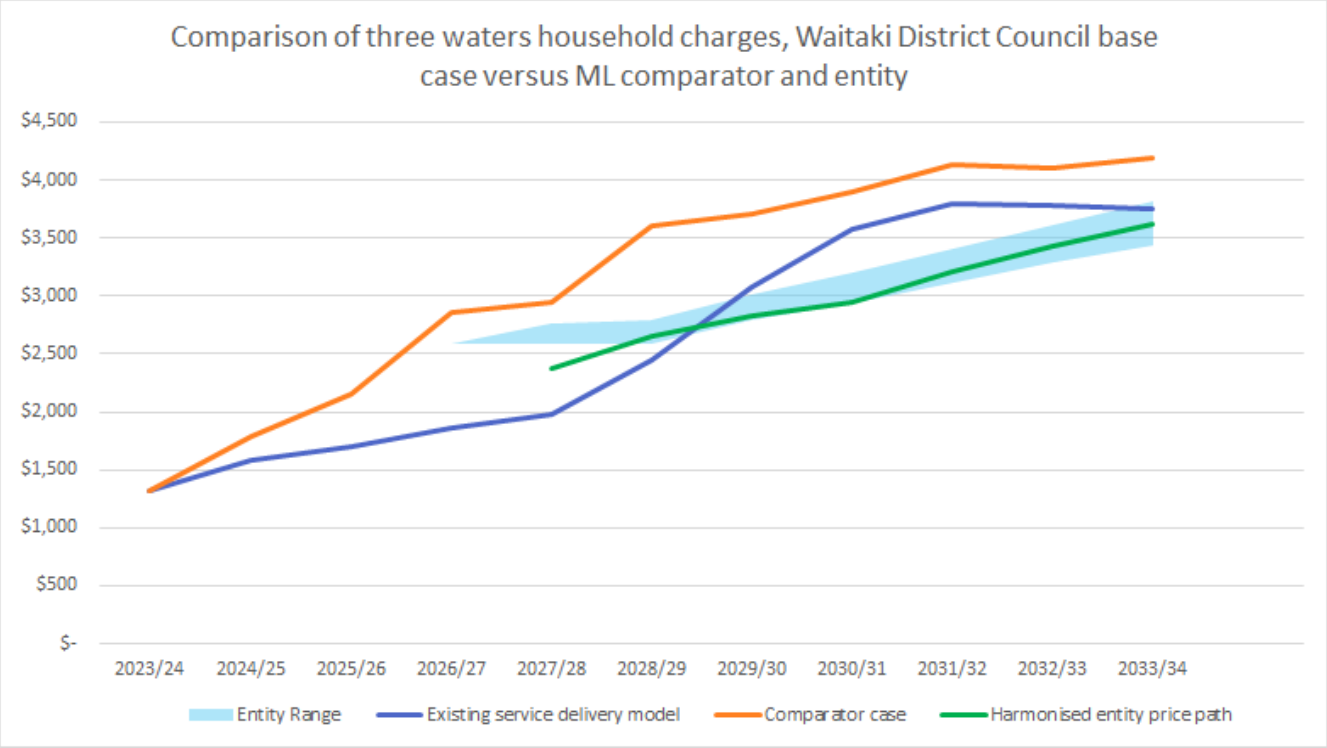
Waitaki District Council

Household charges

The chart below shows Waitaki's base case financial projections against our comparator modelling and an Otago Southland WSE. Notable differences between Waitaki's base case and our comparator scenario are:

- We have modelled a price path in the early years to allow for a progressive increase in depreciation funding from 2023/24 onwards. From 2027/28 our modelling assumes 100% depreciation funding, resulting in a higher overall charge when compared to base financial data that has been provided.
- We have modelled financing costs into the base case data provided by Waitaki without consequently increasing revenue in the base data provided. This means Waitaki's "base case" likely understates revenue requirements.

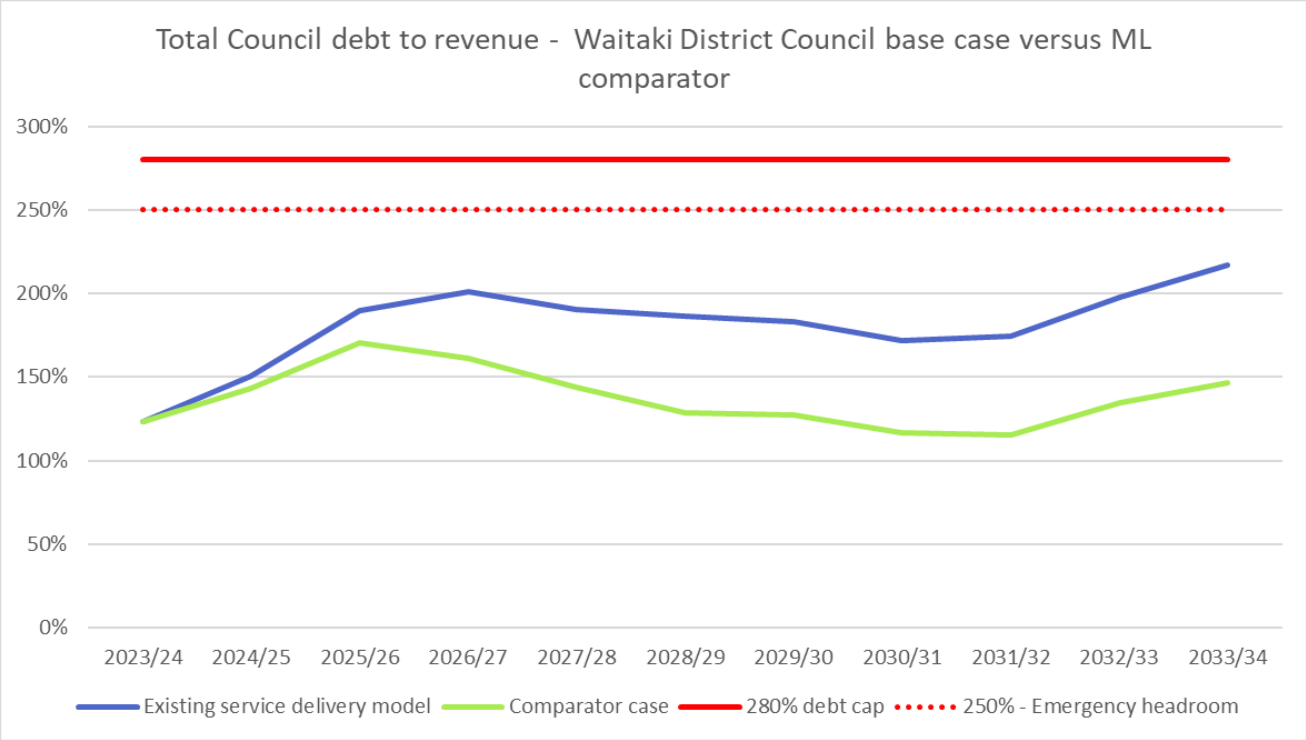
In all circumstances, the Otago Southland WSE provides a more affordable price path for water consumers in Waitaki.



Total Council debt to revenue

The chart below shows a comparison of total council debt to revenue under Waitaki's base case financial projections and our comparator modelling. It shows the impacts of including full depreciation funding and the under collection of in Waitaki's base financial data.

Under both scenarios, Council remains with in LGFA's total lending limits.



Appendix One – Modelling assumptions

Assumptions applied to our "comparator" scenarios

In order to enable a like for like comparison between regional delivery options and the existing delivery model, we have made adjustments to financial and capital investment programmes provided by each council as the 'status quo'. These adjustments ensure that differences between regional delivery models are not purely the result of a different approach to managing revenue, debt and expenditure, or differences to underlying assumptions across the individual models.

This also means that the comparator scenarios presented in our modelling may not mirror an individual councils' current long term plan projections.

We have endeavoured to ensure that our approach aligns with the requirements of a water services delivery plan. This means that some councils may wish to use the comparator case from this modelling as a starting point for a water services delivery plan (WSDP) for in-house delivery. This is however a "best endeavours" approach, and councils may further refine capital programmes before preparing their WSDP.

Where councils are undertaking detailed asset and investment planning work this should then be used to inform their WSDP.

To assist councils in understanding the alignment of our comparator case with their own WSDP or LTP work, we have outlined the key adjustments and changes we have made below.

Operating expenditure

Our modelling of the comparator case scenarios for operating expenditure predominantly relies on each council's own operating budgets, as provided through our information request. Adjustments have been made to:

- Reverse the impact of any internal transfers or overhead activities that occur between water, wastewater and stormwater activities. We have retained overhead allocations from other council activities to/from each of the waters activities.
- Recalculate interest costs based on any amendments made to the capital works programme (refer below) and any additional revenue generated in order to stay within borrowing limits.
- Recalculate interest rates using a common interest rate across all councils. The rate used will be the weighted average interest rate across the councils currently. We have applied an interest rate of 5.52% in our modelling. Interest is calculated off the previous year's closing balance, meaning the effective interest rate is slightly lower than this when current year movements are considered.
- Recalculate depreciation based on any amendments made to the capital works programme. The depreciation rate applied to the recalculation is based on each council's average depreciation rate. Depreciation rates are set at 1.48% for water supply, 1.62% for wastewater, and 1.32% for stormwater.
- Assets are revalued at 2% per annum and depreciation recalculated based off revalued asset base (including additions).
- Inflation is modelled at 2% per annum for years 11 – 30.

Capital expenditure

Our modelling of the comparator case scenarios for capital expenditure focuses on ensuring that each council's comparator case is able to meet the requirements of a water services delivery plan, being:

- The requirement to meet all relevant regulatory quality standards for its water services
- The requirement to meet all drinking water quality standards
- Supports the territorial authority's housing growth and urban development, as specified in the territorial authority's long-term plan
- The need to demonstrate financial sustainability through:
  - generating sufficient revenue to ensure long term investment in delivering water services
  - being financially able to meet all regulatory standards and requirements for the delivery of water services.

Renewals

Water Services Delivery Plan templates indicate some of the key measures that DIA expect to be reported in relation to these tests, and therefore what may be expected by the Department. In particular:

- The need to report on combined capital expenditure versus depreciation, indicating a desire from the Department for capex to exceed depreciation. We don't anticipate this being an issue for any councils over the ten year period.
- The need to report on an "asset sustainability index" which compares renewals expenditure with depreciation, and notably, where renewals expenditure is not equal to depreciation, why that approach is appropriate.
- The need to report on an asset consumption ratio, and note why that ratio may deteriorate over time (if it does). This is unlikely to be a problem for councils that spending more than their depreciation on capital investment each year. This ratio again is intended to ensure their adequacy of a renewals programme.

To support this we have reviewed asset register data and compare:

  - A renewals programme based on remaining asset life
  - A renewals programme based on asset condition
  - A renewals programme based on depreciation
  - Each council's own asset renewals programme that is provided to us
  - The impact of any revaluations that aren't yet reflected in asset data

This has been used to provide sensitivity testing and to "triangulate" the proposed investment programmes from councils. No changes have been made to renewals programmes in our comparator case other than changes applied through sensitivity testing.

Upgrades

Councils are also required to demonstrate and assert that their WSDPs contain sufficient investment to meet regulatory requirements and respond to growth. Our approach to reviewing this and making revisions to the status quo was to:

- Ensure that investment is provided for any drinking water treatment plants that are not currently compliant with Drinking water standards. We did not identify any significant missing expenditure through this process.
- Ensure that investment is provided for any wastewater treatment plants that have consents expiring during the period. We did not identify any significant missing expenditure through this process.
- We sought confirmation about whether any costs include the cost of disposing to land (which may mean a reduction in costs can be applied) or are for servicing populations of fewer than 1000 people (again meaning a potential reduction in costs). The adjustments we have made to this are outlined below under the headings “Small scale wastewater treatment plants” and “Disposal to land”.
- We reviewed AMPs and identified whether it appears that any upgrade projects have been deferred beyond the 10 year LTP period. Where these are identified, we will confirm whether these should be moved back into the 10 year planning period.
- We have undertaken sensitivity testing on upgrade capital expenditure using a blanket percentage uplift/decrease.

Growth

- We sought confirmation that the growth investment proposed in the LTP responds to the WSDP requirements, and for any significant projects to be identified if they are not already identified in AMPs/LTPs.
- We have not included any sensitivity testing on increased/decreased growth rates, however our model does allow for this to be completed if needed. In our model, sensitivity testing of growth assumes planned capex scales proportionally to the change in the number of new properties being connected.
    - Scaling is applied to original growth capital expenditure forecasts at the same rate as the uplift or decrease in connections on an annual basis. The cumulative impact of this is that if sensitivity testing results in 20% more properties over 10 years, the total capital expenditure will have been increased by 10%.
    - It is recognised that growth projects do not neatly scale in real life. The scaling recognises that there is likely to be some uplift, or advancement of timing, and that, at the least, increased or decreased rates of growth impact the capacity life of infrastructure.

Revenue

Water Services Delivery Plan templates indicate some of the key measures that DIA expect to be reported in relation to these tests, and therefore what may be expected by the Department. In particular:

- A chart demonstrating projected revenue versus projected costs including depreciation, and net operating surplus or loss. We anticipate that DIA are expecting revenue to at least equal total expenditure including depreciation based on the examples provided.

- An operating surplus ratio. DIA guidance notes that "Where this ratio percentage is negative, this represents the percentage increase required for revenues to cover costs". Costs in this ratio include depreciation.

Based on these questions, and additional commentary within the WSDP templates, we intend to model status quo arrangements to be fully funding depreciation from the 2028 financial year onwards. Councils that are not currently fully funding depreciation currently will be modelled to move to a fully funded scenario evenly over the remaining years.

In addition, from 2028 and beyond:

- Revenue has been modelled to "break even" before accounting for development contributions, vested assets and grants and subsidies.
- Additional revenue has been calculated to ensure that the council remains in borrowing limits. This revenue line is recovered through water/wastewater/stormwater charges and is calculated to be no more than the amount needed to remain within agreed debt caps.
- The additional debt repayment/control revenue is modelled to ensure that debt caps are not breached over the life of the modelling period, however the additional revenue is modelled over the entire modelling period, meaning revenue is collected in anticipation of debt otherwise exceeding limits. This will impact price paths, where councils may have otherwise deferred increases in revenue to a later year than our modelling. Our modelling smooths the impact of this increase.
- Development contribution revenue has been modelled to scale proportionally with changes in growth capital expenditure. Scaling is completed annually.

Debt and borrowing costs

Revisions to capital works programmes, revenue, and expenditure all impact the amount of debt required by councils to fund their three waters activity. Our modelling recalculates three waters debt under the base case scenarios to ensure comparability with regional delivery models.

To calculate debt, we have:

- Assumed each councils' starting debt position is correct.
- Identified the cash surplus available from operations, development contribution receipts, and capital and operating subsidies.
- Subtracted the cost of capital works from the cash surplus.
- Identified ongoing working capital requirements and any shortfalls in cash balances to meet those requirements.
- Where this value is negative, we have increased borrowings to fund the difference.
- Where this value is negative, we have modelled a debt repayment.

We have not assumed any "regular" debt repayments under a table loan facility. Council's typically borrow through bond issues that are repaid on maturity date. Our modelling effectively assumes that these bonds are renewed if needed. Our modelling also assumes that in any given year there will be sufficient bonds expiring that council will have the opportunity to repay debt if it holds surplus cash.

Small scale wastewater treatment plants

We've reduced capital costs for upgrades to wastewater treatment plants that service fewer than 1,000 based on the introduction of standardised designs and approach. Per comments made by Minister Simeon Brown in his speech to the Water New Zealand conference, we've assumed a reduction of costs of 50% is achievable in these circumstances. We have only applied this adjustment to planned upgrade capex which exceed $5 million within long term plans.

- While the Kingston and Cardrona WWTPs currently service populations of fewer than 1,000 people, growth projections mean that we haven't assumed that these plants will be able to take advantage of standardised design.

Disposal to land

We've reduced the capital costs for treatment plant upgrades which include upgrades to enable the disposal of treated wastewater to land. Where such plants have been included, we have reduced estimated capital costs by 30%, unless otherwise advised of a more appropriate allowance by Council staff. We note that:

- This cost reduction is not in addition to cost reductions for treatment plants that service fewer than 1,000 people.
- Central Otago and Waitaki District Councils have provided revised capital works programmes that already reflected a reduction in costs based on an anticipated change in standards/requirements.
- We have not reduced planned capital expenditure for treatment plants in Queenstown Lakes District Council or Dunedin City Council, because:
  - Queenstown Lakes District Council do not believe a reduction is appropriate based on current knowledge and understanding of their network needs
  - Dunedin City Council advises that their planned upgrades also address climate resilience concerns based on current disposal technology/sites, disposal to land is already in use, and that relationships with Mana Whenua would otherwise be compromised.

Assumptions applied to base data

We've also made the following minor additional assumptions to base data provided by Councils. These adjustments impact projections in the "status quo" modelling.

- The percentage of water, wastewater and stormwater revenue received from residential customers is assumed to be consistent with the percentage split across these activities as provided to WICS in their RFI of 2021.
- Where specific projections of the number of connections has not been provided, we've assumed connection growth continues at the rate of growth in rateable units.
- We've assumed the proportion of residential to non-residential customers is consistent with WICS RFI where detailed breakdown of these projections has not been provided.
- CODC, GDC (wastewater only) and WDC provided us forecast financial information that included a capital programme which has since been revised downwards by those Councils. Accordingly, we have had to adjust debt calculations for status quo scenarios for those Councils. Interest calculations have been unchanged to preserve the relative balance between costs and rates in status quo models.
- For WDC, we have assumed interest costs in the status quo model equal to the weighted average cost of borrowing across the remaining 7 councils, as borrowing cost forecasts were not provided.
- In all models, we have assumed that council revenue and debt relating to non-three waters activities is unchanged under all investment scenarios. That is, even where three waters investment, charges, or debt increase, we have assumed that there is no consequential or offsetting reduction in the corresponding expenditure/charge for non-three waters activities.
- In 30 years modelling, we have relied on capital programmes from infrastructure strategies or long term capital works plans provided to us by participating councils. In the case of Southland District Council, the 30 year capital works programme produced relies on asset register data for 30 year renewals forecasts, supplemented with the 12 year average value (2022/22 through 2033/34) of level of service investment.
- Corporate costs, as provided, have been retained in the base case. Some of these costs may represent "stranded overhead" in individual councils, however we note that the amount of cost allocated varies greatly across councils, and assessment of the amount of stranded overhead in each council would not be possible without a detailed assessment of the cost allocation and apportionment approaches used by each council. Corporate costs were not provided for Invercargill City Council.

Otago Southland WSE assumptions

To create an Otago Southland WSE we have modelled transitional and organisational costs for an Otago Southland WSE, based on a ground up approach. The full details of costs included in our model are outlined below.

Operating and capital efficiencies

Efficiencies have been modelled using the efficiency data produced by the Water Industry Commission of Scotland (WICS) for the Department of Internal Affairs (DIA) as a base case, noting the following adjustments:

- The total achievable efficiency identified by WICS have been scaled back by 75%. These total achievable efficiencies have been compared to our bottom up estimates to confirm that the scaling is appropriate. This has reduced the baseline total achievable efficiencies from 50% capital and 53% operating efficiencies to 13% operating and capital efficiencies.
- Efficiencies have then been scaled according to data produced by WICS in reports produced for DIA. This has resulted in modelled scale efficiencies of 15% capital and 16% operating efficiencies.
- We've assumed that these efficiencies are achievable over a 10 year period, commencing two years after the establishment of the entity. Efficiencies are modelled as being achieved evenly over that time period.

Borrowing

The Government and the Local Government Funding Agency (LGFA) jointly announced that water entities would be able to borrow up to a 500% debt to revenue ratio. The fine print of that announcement noted that entities will actually be measured based on an FFO to debt ratio, with the intention that lending covenants would be set at such a level that the entity could maintain an "investor grade" credit rating.

Our modelling adopts the Moody's credit rating approach, with non-financial components being set based on Moody's assessment of water entities in the United Kingdom, and based on their published guidance.

The result of the credit rating approach is that it is likely that an Otago Southland water services organisation would be able to maintain an investment grade credit rating with an FFO to debt ratio of 10% or higher. Our modelling assumes a 10% minimum threshold and includes additional modelled revenue, where necessary, to support that.

Costs of change

Corporate overhead from each council has been replaced with costs for the Otago Southland WSE, and transition costs have been included:

- Increased compliance costs associated with regulatory reforms (recognising the role and requirements to report to both a service and economic regulator)
- Transitional costs to establish the Otago Southland WSE (assumed to be borne by the Otago Southland WSE)
- Additional resources required or additional costs for resources
- Any change is assumed for modelling purposes to take place on 1 July 2026/7.

Costs have been indexed using BERL inflation rates for water services through 2034, and 2% per annum thereafter.

Transitional costs to establish an Otago Southland WSE

Item	Value	Rationale
Transitional body		Set up shell company, appoint Board, CEO and GMs progressively ahead
IT infrastructure & systems		The Otago Southland WSE will be required or will choose to purchase their own corporate (GL, billing, payroll etc), asset management, CRM and customer service and configure those
Legal & compliance		Transfer of all titles, duties, rights & obligations
Finance & Finding		Establish new entity financial structure, balance sheet, debt arrangements, charging and pricing etc
Restructure costs		No forced redundancies but assumed some technical redundancies would be allowed for where staff are between 20% and 80% on three waters
Programme and project management, back fill of key roles		Resources to manage the programme of change, stakeholder engagement and support councils to backfill key roles if and when those are drawn into the transition process.
Total transition costs	$50.6M	Used NTU estimates an approach for calculating and then apportioning total cost to transition to entity model by population. Total NTU transition costs ($1,.45B) scaled back by 50% to recognise new approach, tailored to each CCO and use localized solutions to reduce overall costs

CCO Costs and Benefits

Item	Value	Rationale
Governance	$180,000	Five Directors including Chair. Director fees based on Wellington Water and double for the Chair
Stakeholder governance	$400,000	Costs of supporting shareholder Councils & Māori to develop and implement accountability framework
Executive team costs	$1,350,000	CEO & Four Directors – CEO remuneration based on Tier 2 of Wellington Water (100% new), Directors at 70% of that.
IT infrastructure & systems	$12,646,837	Uses Watercare IT budget as the basis and scaled based on population served.
Regulatory compliance	$.4M per 1% of population	Budget of Taumata Arowai ($19M) doubled to represent an economic regulator as well, apportioned by population served *[exists in comparator case as well]*
Auditor costs	$200,000	Additional costs for audit
Council rates	$3,439,332	The cost of paying rates to councils for water assets located on council land
Additional resources	$3,312,000	Additional staff to create support structure. Includes HR, IT, Finance, health and safety and customer service + operational staff where required. Based on 12% of additional roles created in the organizational structure developed for Hawke's Bay Water CCO x $100K per additional staff member
Accommodation - office rent	$1,391,040	15m^2 per staff member based on reviewing average office rental in Provincial centres ($250m^2) used. Allowance for all staff to have office space provides for costs of multiple locations
Office overheads	$139,104	10% of office accommodation cost for insurance, electricity etc
Office fit out	$2,455,020	Based on 15m^2 per staff member x state service guide fitout allowance

Appendix Two – Modelling sensitivity testing

Three scenarios have been modelled for sensitivity testing purposes in this iteration of modelling. These are:

Base case

Our standard modelling for the comparator cases and an Otago Southland WSE includes no adjustment to the assumptions outlined elsewhere in this report.

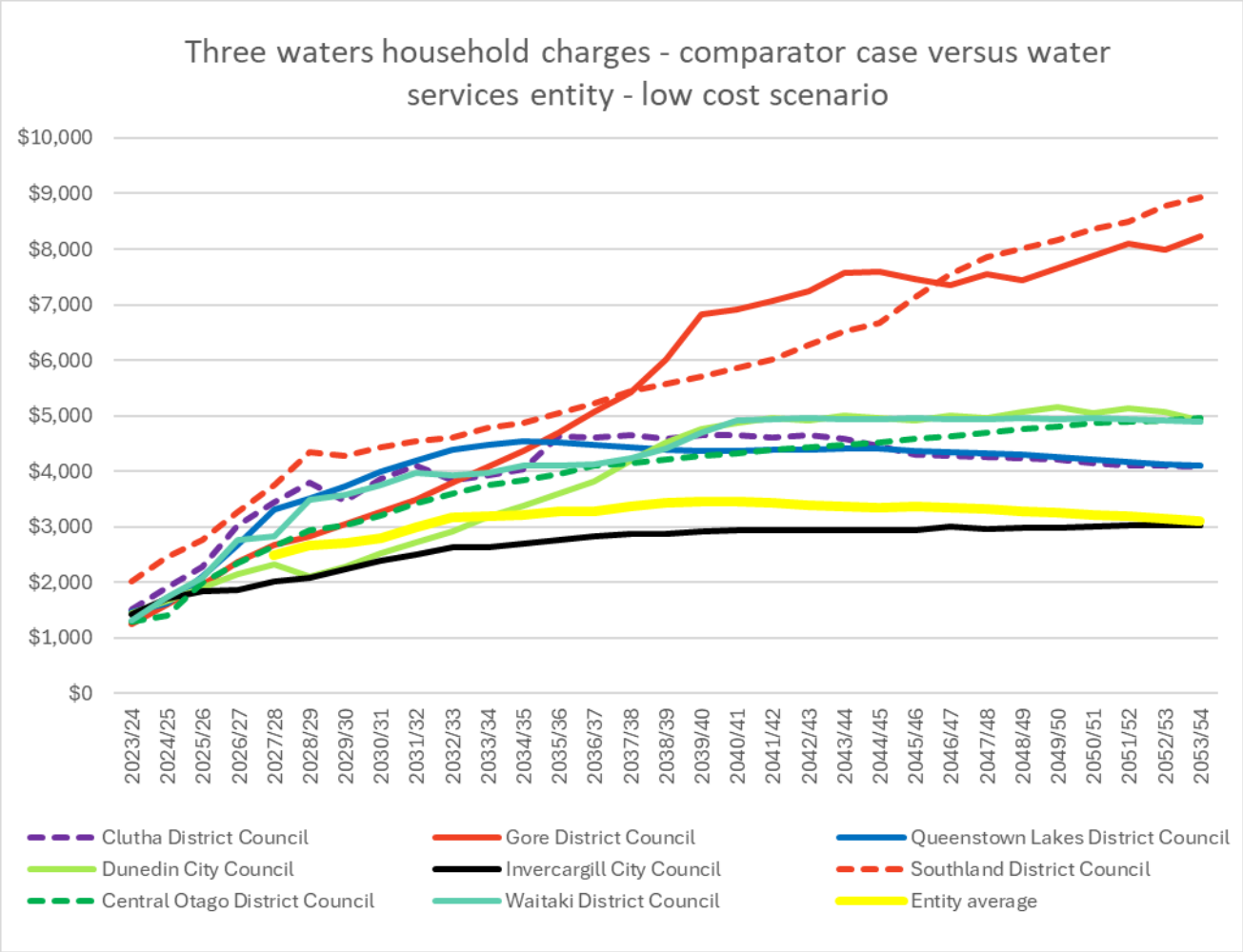
"Low cost" scenario

Our low cost scenario includes the following adjustments to the base case:

- We have assumed that 50% of the total available efficiencies are able to be achieved.
- We have decreased capital programmes by:
  - 10% to level of service investment
  - 10% to renewals

  based on a conservative assumption regarding potential programme optimization and additional possible savings available through improved standardization, national engineering standards, and improved asset data collection.
- We have assumed borrowing costs decrease by 1%.
- We have made no other changes to underlying assumptions or capital works programmes.

The modelling shows that in these circumstances, only Invercargill's three waters charges remain below the average three waters charge for the Otago Southland WSE at the end of the 10 and 30 year periods.



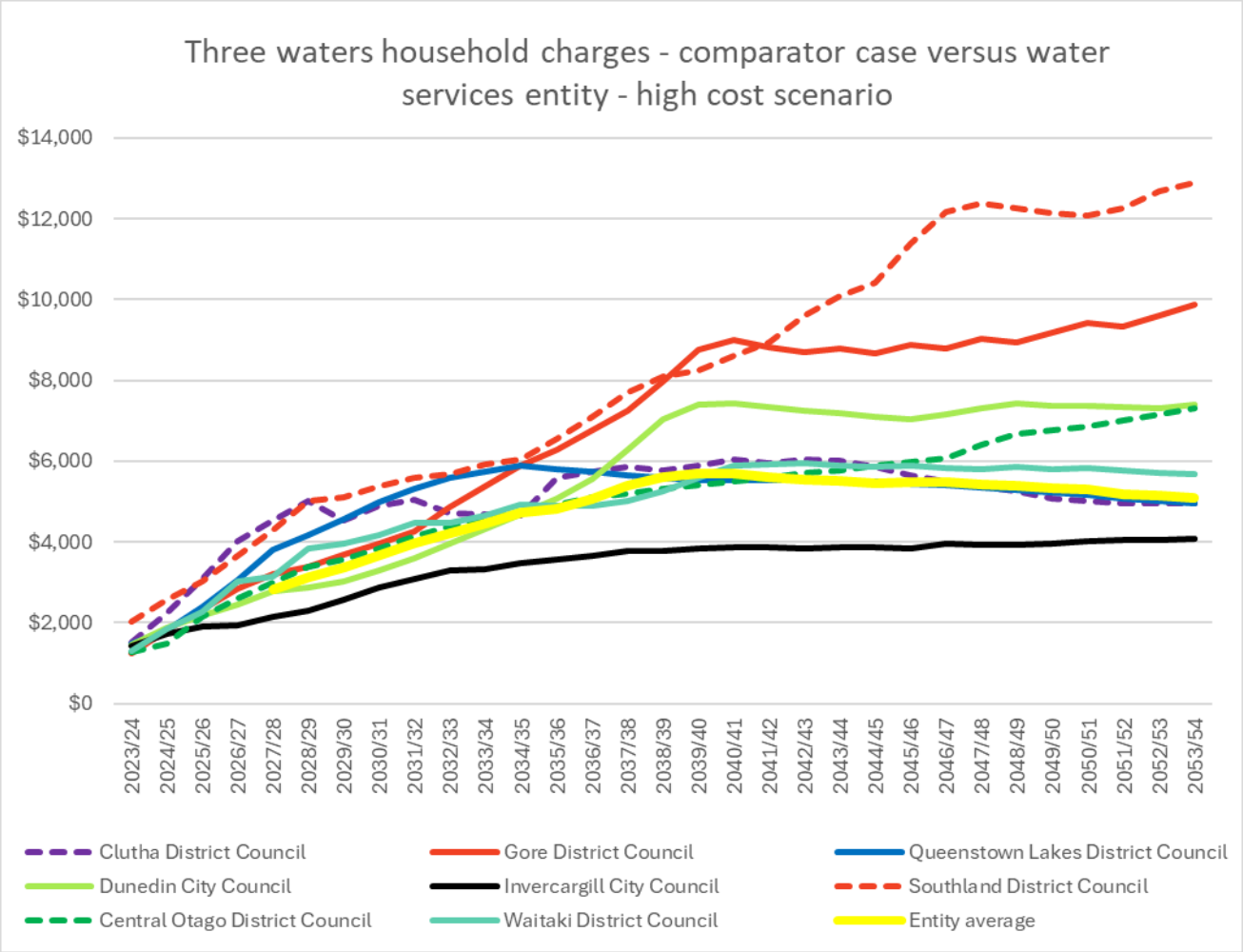
"High cost" scenario

Our high cost scenario includes the following adjustments to the base case:

- We have assumed that efficiencies will be achieved over 15 years instead of 10.
- We have increased capital programmes by:
  - 30% to level of service investment
  - 30% to renewals

  based on the average observed difference between LTPs and our maximum potential renewals investment programme through review of asset registers.
- We have assumed borrowing costs increase by 1%.

The chart below shows that in a high cost scenario three waters charges for Waitaki, Central Otago, Clutha and Queenstown may be lower than entity charges at various points during the modelling period, however these difference are well within the potential margin of error inherent in any long term financial model.


Three waters household charges - comparator case versus water services entity - high cost scenario
$14,000
$12,000
$10,000
$8,000
$6,000
$4,000
$2,000
$0
2023/24
2024/25
2025/26
2026/27
2027/28
2028/29
2029/30
2030/31
2031/32
2032/33
2033/34
2034/35
2035/36
2036/37
2037/38
2038/39
2039/40
2040/41
2041/42
2042/43
2043/44
2044/45
2045/46
2046/47
2047/48
2048/49
2049/50
2050/51
2051/52
2052/53
2053/54
Clutha District Council
Gore District Council
Queenstown Lakes District Council
Dunedin City Council
Invercargill City Council
Southland District Council
Central Otago District Council
Waitaki District Council
Entity average

Sensitivity to key assumptions

The table below sets out some of the key assumptions contained in our modelling, and highlights the risk of the assumption being incorrect t and its likely impact.

Assumption	Risk	Likely impact
Capital investment included within long term plans and infrastructure strategies is sufficient to meet future regulatory standards.	**Medium - High** Capital programs have been reviewed at a high level however plans have been moderated for affordability. Future standards are unknown.	**Moderate** Modelling of the high cost scenario outlined in Appendix Two addresses this scenario. It shows the comparative advantages of an Otago Southland WSE still remain for most councils.
Disposal of treated wastewater to land will not be required and that costs savings are available as a result. That small schemes will be able to generate cost savings due to standardised design.	**Medium** Government information releases strongly indicate that requirement to dispose of treated wastewater to land will be relaxed. Costs savings of some scale should be available.	**Moderate** Modelling of the high cost scenario outlined in Appendix Two addresses this scenario. It shows the comparative advantages of an Otago Southland WSE still remain for most councils.
Depreciation rates used in modelling are accurate and reflective of true economic depreciation	**Low** Depreciation rates are based on weighted average rates across the combined regions, reducing the impact of any one council having rates that are too high or low.	**Minor** Any changes to depreciation rates would be consistent across all scenarios and would be reflected in changing debt profiles and funding requirements.
Interest rates used in modelling are accurate and reflective of likely future borrowing costs	**Moderate** Interest rates are difficult to predict and are based on a range of external economic circumstances.	**Minor** Changes in interest rates are modelled in all of our scenarios. The difference between an Otago Southland WSE and a comparator case may reduce if interest costs modelled are too high. This will affect councils with higher debt more.
Operating and capital efficiencies included in our modelling can be achieved	**Moderate** The extent to which the Otago Southland WSE is able to achieve efficiencies will only be known in the event that it is established. However, efficiencies contained in modelling are modest compared to those suggested by analysis undertaken for the Department of Internal Affairs by the Water Industry Commission of Scotland.	**Minor** The modelling presented in this report shows the Otago Southland WSE as having a range of potential prices. The higher end of this range represents a scenario with half the efficiencies and double the costs.

Assumption	Risk	Likely impact
Establishment and operating costs for an Otago Southland WSEs are reflective of likely true costs	**Moderate** While establishment and ongoing costs have been estimated using a ground up approach and benchmarking with established entities and establishment processes, costs cannot be appropriately refined until detailed entity design is completed.	**Minor** The modelling presented in this report shows the Otago Southland WSE as having a range of potential prices. The higher end of this range represents a scenario with half the efficiencies and double the costs.
An Otago Southland WSE will be able to leverage debt up to an FFO ratio of 10% or higher.	**Low** The 10% FFO ratio used has been determined based on a review of Moody's credit rating matrix for water services utilities. The ratio is more conservative than ratios actually applied by international water utilities in many jurisdictions.	**Major** If the Otago Southland WSE is unable to borrow to the extent included in our modelling then charges will need to be substantially higher and its overall viability would likely be undermined.

Appendix Three – Long list of options

Least Ambitious → **Most Ambitious**

Service Scope *(what activities are included?)*	Agricultural water	Rural mixed use supplies	Rural drinking water supplies	Urban drinking water	All drinking water supplies	All water supplies	Water and Wastewater	Wastewater and stormwater	Water, wastewater and stormwater	Three waters plus community owned schemes	Three waters plus land drainage	All core infrastructure	
Service Solution *(what services are shared?)*	Develop consistent standards and bylaws	Regional operating strategy (after hours monitoring)	Pursue all regional quick wins	Joint procurement	Network O & M	Treatment O & M	Network and Treatment O&M	Funding/ Treasury support	Capital works delivery	Capital works planning/ design/ PMO	Engineering Centre of Excellence	Joint asset management and investment planning	Bulk water and wastewater treatment	All functions	All functions with asset transfer
Service Delivery *what are the structural arrangements?)*	Informal arrangement	Memorandum of Understanding	Contractual arrangement	Shared arrangement	Joint venture	Joint committee	Community owned cooperative or trust	Single CCO or entity	Multiple CCOs or entities	Consumer trust	Regional Council		
Implementation *(when do we do it?)*	Long term (7 + years)			Medium Term (3 – 7 years post WSDP)			Short term (1 – 3 years post WSDP)			Phased or staged implementation (progression through scope, solution, or delivery options)			
Funding options *(how will we pay for it?)*	Cost lies where it falls		Contractual agreement		Set by each council (including upon receipt of advice from entity)		Determined by entity, reflecting local differences		Determined by entity with full regionalisation				

Notes

The options framework is designed to facilitate the development of a full long list of options. Each dimension of choice (e.g. service scope., service solution, etc) should be considered as broadly as possible, and independently of the other options. This produces a list that is able to incorporate a number of different combinations of options.

Colours in the above long list denote options that have been ruled out during the shortlisting process. Options coloured red were ruled out based on failure to meet critical success factors, while options shaded orange were ruled out based on high level assessment against strategic objectives.

Appendix Four – Otago-Southland Three Waters Review FINAL Report

Current state overview

Otago & Southland three waters

September 2024

Document status

Job #	Version	Written	Reviewed	Approved	Report Date
2927	DRAFT	S.Cross & R.Slater	D.Bonifant	D.Bonifant	12 August 2024
2927	FINAL v1	S.Cross & R.Slater	D.Bonifant	D.Bonifant	30 August 2024
2927	FINAL v2	S.Cross & R.Slater	D.Bonifant	D.Bonifant	13 September 2024

Contents

Introduction and approach

Context

Following a widespread outbreak of gastroenteritis in Havelock North in 2016, the Government undertook a significant programme of work which resulted in:

- Updates to the drinking water standards
- The establishment of a drinking water supplier (Taumata Arowai)
- Identification of a range of systemic issues relating to the sustainable provision of three waters services across the country.

Over the period that followed there have been a number of attempts at changing the service delivery model for three waters services, including voluntary investigations completed by the councils in the Waikato and Hawke's Bay regions, and centrally led reviews which resulted in the previous Government's proposed "Affordable Waters" programme.

The "Affordable Waters" programme has now been repealed and replaced with a new programme called "Local Water Done Well". Under Local Water Done Well:

- Council's will be required to develop "Water Services Delivery Plans". These plans will need to demonstrate how councils will manage and invest in their three waters services to meet current and future standards, and remain financially sustainable
- Councils will be supported to voluntarily work together to combine services for more efficient and effective delivery
- New CCO models will be developed to allow councils to separate the finances (including debt) for three waters services from shareholder councils' balance sheets.

This report is the first stage of work completed by the councils of the Otago and Southland regions under the Local Water Done Well programme. The approach is to undertake work on a first principles approach (though drawing on data collected through previous studies), to identify a "no regrets" improvement pathway for service delivery in the two regions.

Specifically, this first stage of work is intended to:

- Highlight the key local and regional challenges
- Identify areas of common interest, complimentary issues, and clear opportunities
- Determine the strategic objectives that will be used to assess the likely effectiveness of potential improvement models; and
- Develop a long list of options to be considered.

Currency of data

The change in government and consequential repeal of the previous Government's Three Waters reform programme resulted in significant changes to planning assumptions made by councils in the development of their 2024/34 Long Term Plans. As a result, councils were given the opportunity to delay the adoption of their Long Term Plans by up to 1 year.

We have relied on the *latest* adopted/approved financial and asset information available for each council in the analysis included within this report. Where councils have elected to delay their Long Term Plans by a year, this information typically relates to either the 2021/31 LTP or early internal drafts of the 2024/34 long term plan that were prepared prior to the decision to defer. A detailed description of our approach to analysing the data provided from council's 2021 long term plans is outlined in Appendix One.

Combined regional view

A common set of challenges

The future delivery of three waters services across New Zealand faces challenges from a wide range of converging issues. However, these issues are typically able to be grouped into three common themes:

1. A need for significant investment in infrastructure, including:
    - Long held resource consents nearing expiry
    - Ageing infrastructure and increased renewals investment requirements
    - The increasing need to invest in, and utilise, technology to meet regulatory requirements for the provision of water and wastewater services
    - The condition of assets
    - Increasing or changing regulatory standards and intervention, including requirements to discharge treated wastewater to land rather than freshwater
    - Changing demand
    - Climate related pressures including increased frequency of droughts and severe wet weather events.
2. Increased financial constraints, including:
    - The need to significantly increase rates or other revenue that needs to be collected to fund service provision
    - A reduction in available borrowing capacity
    - The difficulty in funding significant infrastructure investment in small or remote communities
    - Ensuing affordability concerns for impacted communities
3. Challenges with the recruitment, retention, and development of skills, experience and expertise.

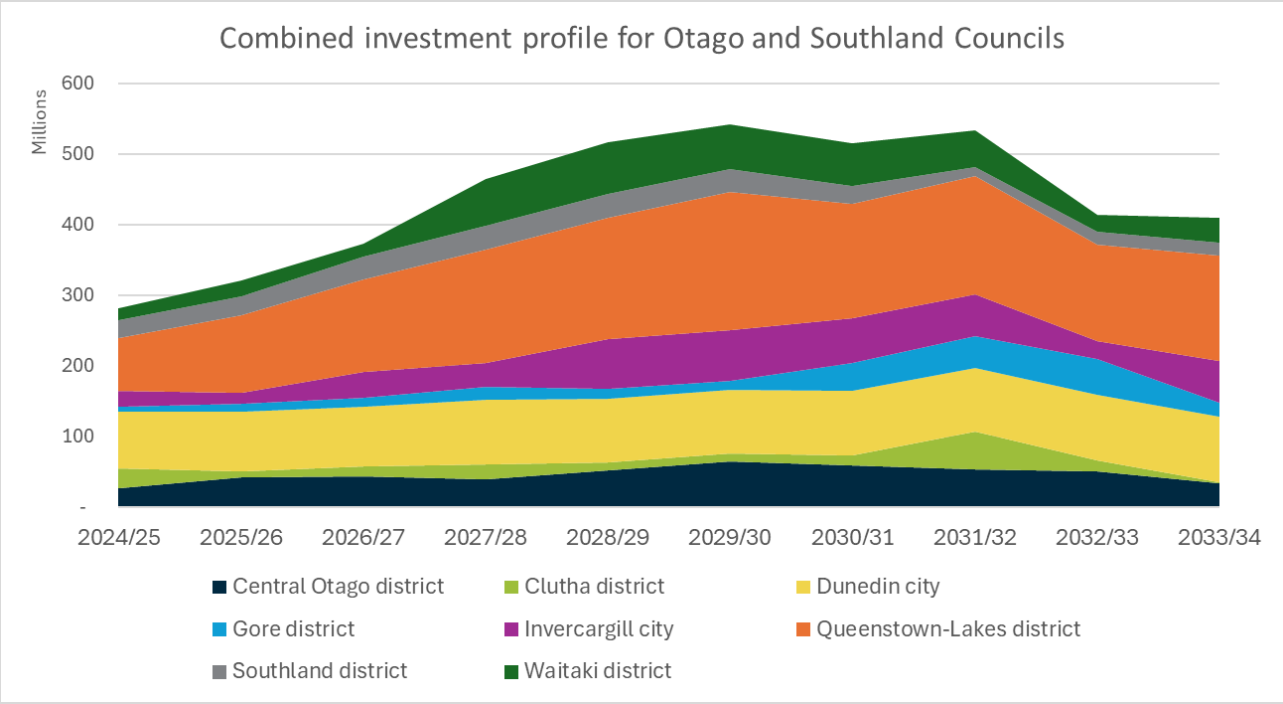
The Otago and Southland regions are no different. Our analysis of the current state challenges is summarised in the following section and in the individual council analysis. The analysis identifies that:

- The Otago and Southland regions are facing a wave of investment required from a large number of expiring wastewater treatment consents, ageing infrastructure and significant population growth at a local level.
- A rapid increase in total borrowings to fund investment in three waters infrastructure. In some cases, councils which have historically held very low levels of debt are now projected to exceed borrowing limits that have been imposed by the Local Government Funding Agency (LGFA).
- Large rates rises for the ongoing provision of three waters services. The three waters residential rates in some areas are anticipated to increase up to five-fold over the next ten years. This will raise significant affordability concerns for these communities.
- Our work in 2021 highlighted recruitment challenges across both regions, with vacancy rates averaging 13% across the two regions. Conversations with key staff through this piece of work have identified that recruitment and retention challenges have not improved significantly since that earlier work.

Investment requirements

The combined investment profile for the Otago and Southland councils features a $4.3 billion programme of work, across eight councils. The work programme almost doubles from $280 million to over $540 million dollars of planned annual capital delivery between 2025 and 2030.

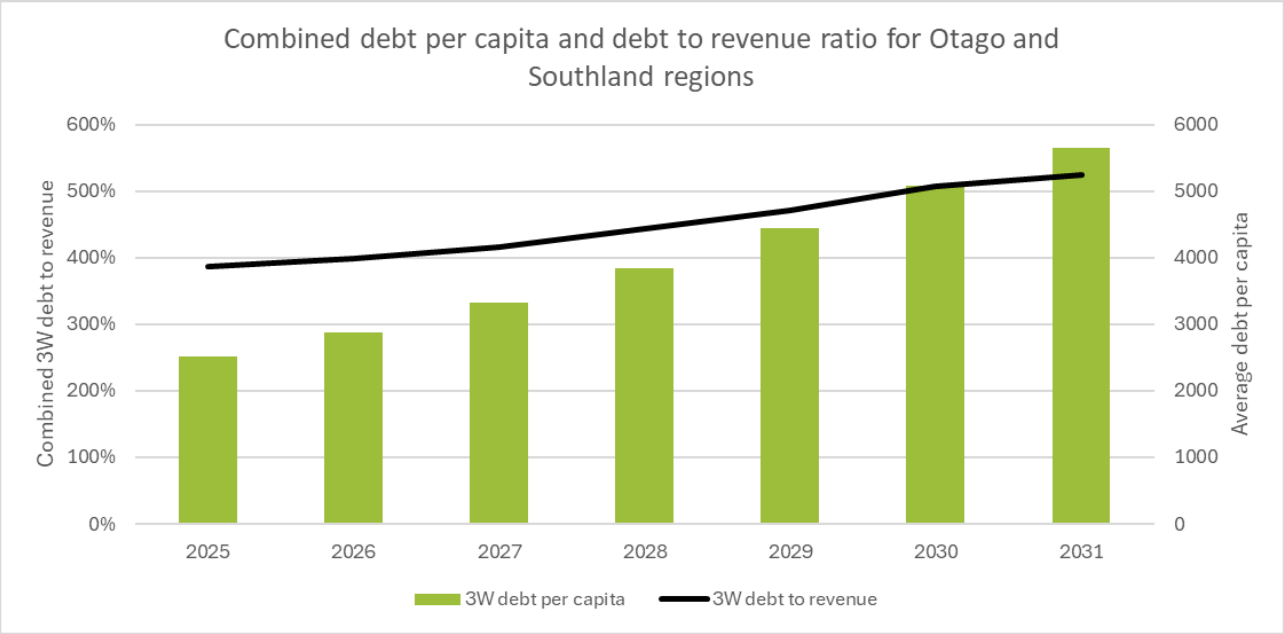
There is a significant delivery challenge associated with scaling up to such a large programme of work. The delivery of a three waters work programme that is double the current scale not only requires the funding but would require a significant increase in contracting, engineering and project management resources across the regions.



Borrowing requirements

Financing a $4.3 billion dollar work programme requires significant borrowing. Total three waters debt across the Otago and Southland Councils is expected to reach $2.2 billion by 2031 on conservative projections[1].

On a per capita basis, debt across the combined regions will more than double from $2,500 per person to over $5,600 per person in 2031. Servicing and repaying that debt will add $450 to the average annual three waters rates bill.



As three waters infrastructure has been the largest contributor to borrowing for councils, when considered in isolation three waters debt is likely to exceed 500% of three waters revenue in 2031.

Proposed financial arrangements announced by the Government on 8 August 2024 reference LGFA's willingness to lend to an effective rate of 500% of three waters revenue. We understand that it is unlikely that lending covenants will actually be measured based on debt to revenue, but rather an alternative benchmark will be used.

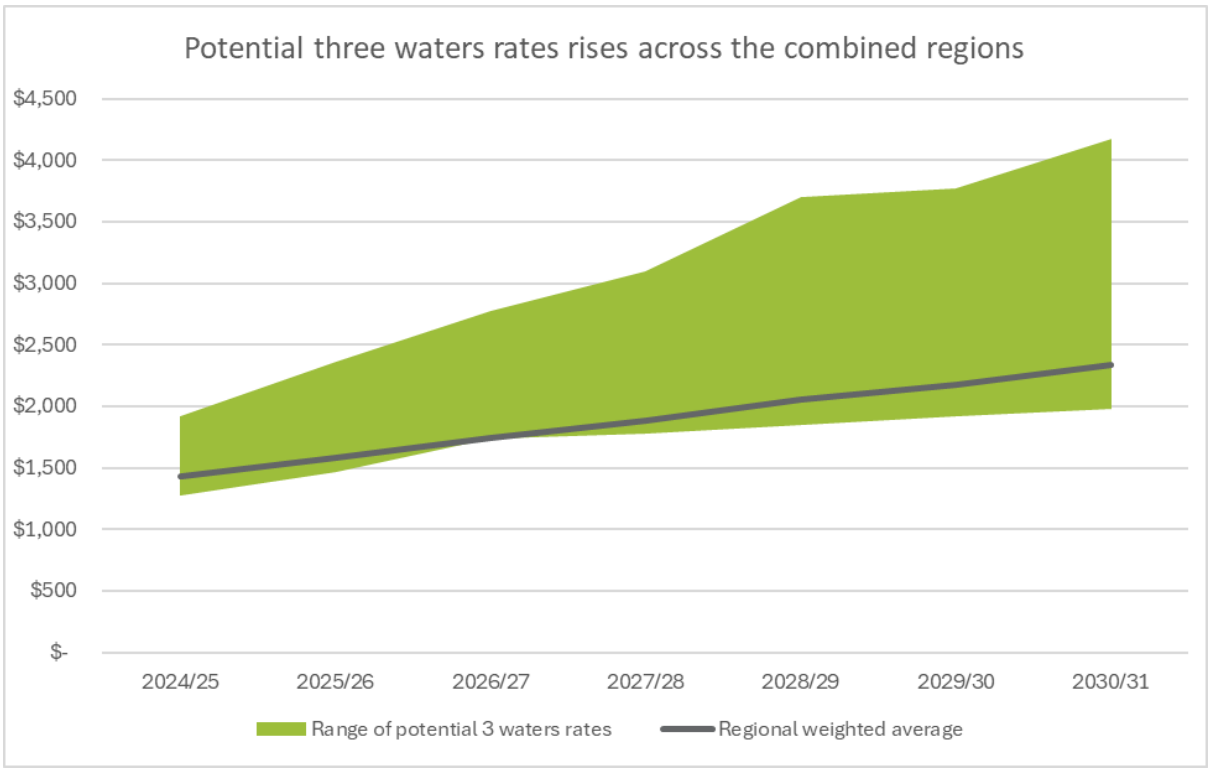
[1] These projections include debt projections based on modified 2021 LTPs for some councils. Given significant uplifts in capital works programmes from 2021 to 2024, we would expect debt to be higher than this in 2031.

Rates rises

Three waters rates across the Otago and Southland regions are predicted to rise significantly over the next seven years. Some communities are projected to experience increases of more than 160% to their existing residential three waters rates bills during that time period. By 2034, some councils will have three waters rates that are up to five times larger than they are in 2025. For some councils, this means a rapid increase in rates in the final years of their LTPs.

While there is significant variation across the regions, the affordability of three waters services and rates is likely to become a key consideration for all councils moving forward. Regionally, the weighted average residential rates will increase at least 63% from $1,435 in 2025 to over $2,350 in 2034.

This may be compounded by the announcements made on 8 August 2024 that indicated a future economic regulator will have the power to set minimum and maximum levels of investment and revenue, thereby restricting councils ability to smooth investment and rating impacts.

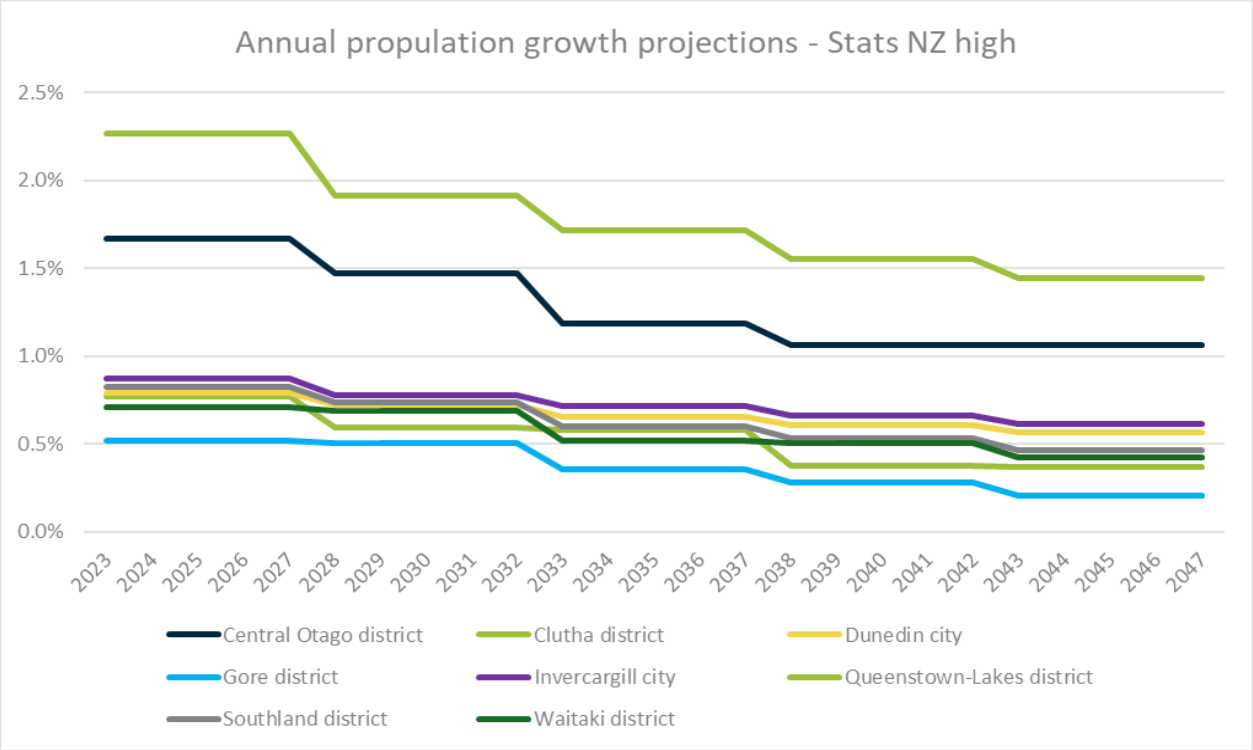


Local context matters

While there are clearly common themes that impact the future sustainability of providing three waters services in Otago and Southland, the local context for those issues differs significantly across councils. This local context helps to identify how similar challenges may need to be resolved through different approaches.

Some councils are experiencing rapid growth

The councils in Otago and Southland are vastly different in terms of their growth profile and population projections. While population is expected to continue to grow rapidly in areas such as Queenstown Lakes District Council (QLDC) and Central Otago District Council (CODC), in areas such as Southland District Council (SDC) and Gore District Council (GDC), population is expected to remain relatively stable.



The two Councils that are experiencing the highest levels of growth in the Otago and Southland regions (QLDC and CODC) have a combined three waters capital works programme of $966 million just to respond to provision of infrastructure to support that future growth. This represents approximately half of the three waters capital works programme for both Councils.

While Dunedin City Council (DCC) has allowed approximately $68 million for three waters growth infrastructure between 2024 – 2034, the remaining councils in the Otago and Southland regions have only forecast incidental expenditure on growth projects over the LTP period.

Servicing the growth that is occurring in QLDC and CODC requires significant organisational effort and planning. It can also have significant financial implications because development contributions that are used to fund that growth infrastructure are often received over time, meaning councils must borrow to fund its construction.

Growth councils require careful planning to ensure infrastructure is provided to support development just in time for the development to occur, and to ensure that consents, treatment plants, pump stations and bulk water/wastewater pipelines are appropriately sized to address future demand.

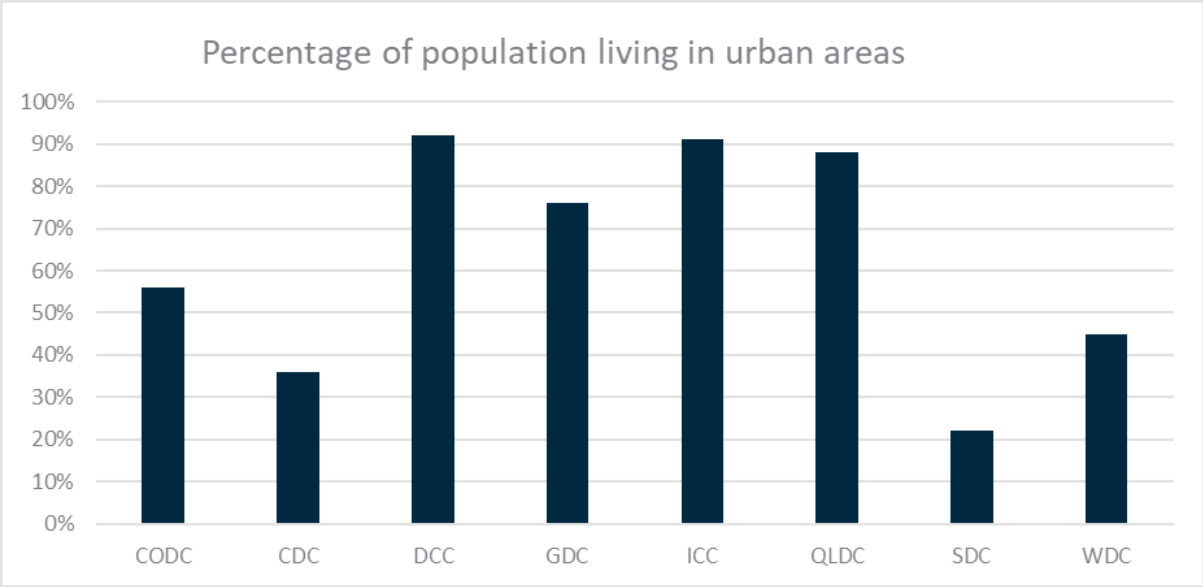
Addressing future growth demands is likely to become even harder following recent announcements by the Minister of housing. Tier one and two councils under the national policy statement on urban development will now be required to provide up to 30 years of plan enabled development capacity. This will likely require further investment in growth infrastructure.

Some councils have many small communities

Provision of water, wastewater and stormwater services is becoming increasingly expensive as drinking water, environmental, and health and safety standards continue to become more stringent. These increasingly stringent standards are requiring significant investment to be made, particularly in wastewater treatment plants.

The Otago and Southland regions include a mixture of highly urbanised and largely rural populations. DCC has as many as 92% of its residents living in an urban environment. Invercargill City Council (ICC) and QLDC each have greater than 85% of their population living in urban areas.

By contrast, Clutha District Council (CDC), Waitaki District Council (WDC) and SDC each have fewer than half of their population living in urban areas. Only 22% of SDC's population live in urban areas.



The costs of meeting increasingly stringent regulatory standards is particularly notable in small and rural communities, where costs are spread over a very small number of ratepayers. While some councils have adopted district wide charging to deal with this, these small schemes are still difficult to maintain economically.

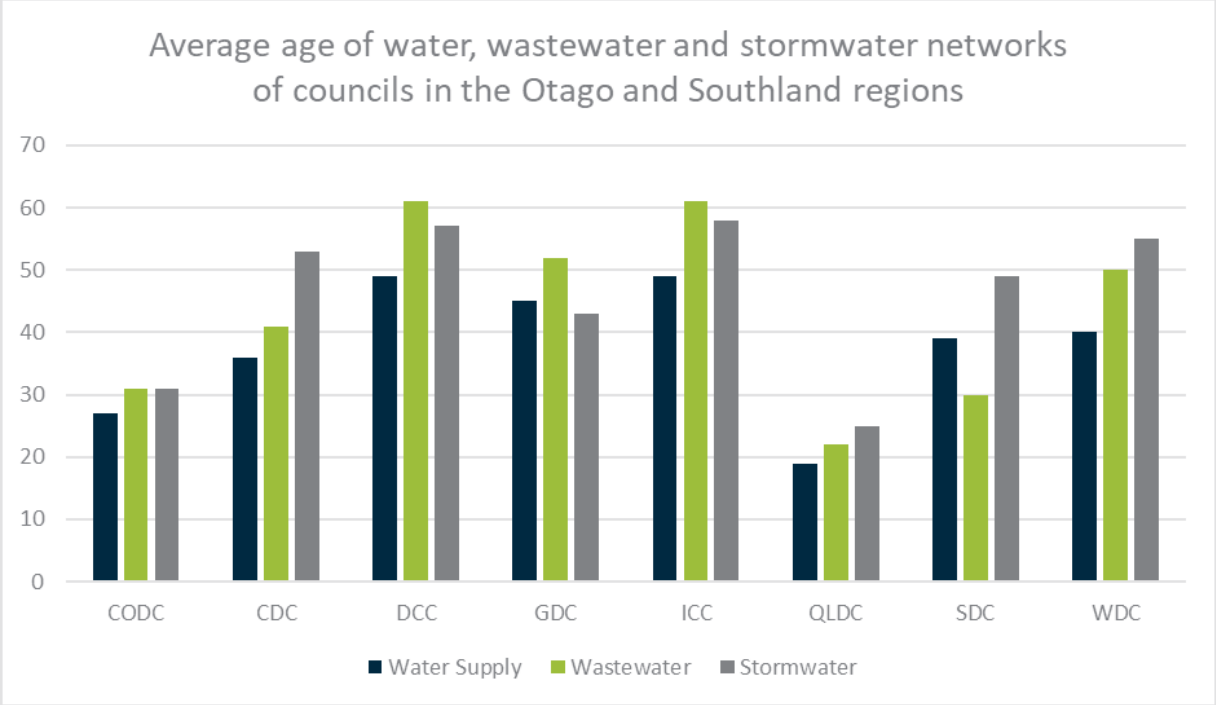
In most cases councils with multiple small townships also have comparatively low populations. Further, when a large proportion of a district's population lives in small townships, spreading costs is simply a matter of timing. While some townships may have (comparatively) expensive upgrades due in the next five years, the remaining townships may have similarly expensive upgrades due in the following 5 years.

Managing small schemes cost effectively requires a different approach to the management of three waters services in highly urbanised environments.

Some councils have older networks than others

While age is not the sole determining factor about whether a water, wastewater, or stormwater network is in good condition or needs to be replaced, in the absence of high-quality condition data or asset performance information, it can be a good indicator.

The Otago and Southland regions contain some of the oldest townships in New Zealand. As a consequence they also have a number of long lived assets. DCC notes in its infrastructure strategy that its main sewerage interceptor dates back to the early 1900s and is still in use. DCC also has a number of other assets of similar age.



Ageing infrastructure and the pending "renewals bow wave" are issues that have been frequently cited as major challenges for the waters sector in New Zealand. As could be expected, aging infrastructure is often in poor condition, or may be leaky due to age or material. Leaky water networks mean high rates of water loss, contributing to the need for water restrictions during summer, while leaking stormwater and wastewater overflows can lead to inundation of the wastewater network causing overflows of raw sewerage and potential consent breaches.

Councils with older networks such as ICC, DCC, WDC and GDC are expected to undertake a significant programme of renewals over the next 10 years. These councils are expected to spend over $850 million in three waters renewals over the next 10 years, or around half of their combined three waters capital works programme.

Among the issues lie a range of opportunities

The scale of the three waters infrastructure challenges facing the Otago and Southland regions is substantial. While the underlying causes for the increased level of investment facing councils may differ, there are a number of clear opportunities for collaboration that could be explored.

Examples of where further opportunities could be explored, or may be leverage as part of any new service delivery model include:

- Exploring opportunities for networks to be connected in neighbouring areas. There are only likely to be a small number of these opportunities (for example the Clifton and Winton wastewater treatment facilities) that are economically viable. However, combining networks is likely to give effect to longer term operating efficiencies and improved network resilience. There is nothing to prevent such opportunities to be explored currently.
- A number of Council's have in house operations and maintenance teams that work on part or all of their water and wastewater networks. These councils currently need to employ a large enough workforce to ensure adequate cover for after hours, and annual and sick leave of staff. Developing a shared workforce between neighbouring councils would provide more workforce resilience, and potentially enable operational efficiencies.
- All councils have significant capital works programmes ahead which will require engagement of specialist contractors to complete. However, given the comparatively remote location of the Councils of Otago and Southland, and the distance from most major population centres in New Zealand, attracting large scale contractors can be challenging. Alignment of procurement and project management approaches, and coordination of large scale work programmes would likely assist in attracting contractors to the regions.
- Councils across Otago and Southland differ in terms of the local context which influences their three waters investment and service delivery needs. These differences create further opportunities in a shared service model, as the increased scale will allow for increased specialisation of roles. For example, councils may be able to pool resources to have dedicated development engineering, design engineering, urban and rural water specialists, and project management skills that would otherwise be out of reach.
- Increased scale may allow for specialist equipment to be jointly acquired, for example CCTV equipment for condition assessment or equipment to aid leak detection.
- There may be funding and financing opportunities available through the ability to leverage a combined balance sheet and revenue base. The Government's announcements of 8 August 2024 indicated that wholly owned three waters CCOs may be able to access borrowing up to 500% of its revenue, and for that borrowing to be kept off a council's balance sheet. However the terms, including the interest rate, of that borrowing will be determined by LGFA based on its assessment of risk and credit worthiness. This means that bigger entities, with bigger asset and customer bases, may be able to access more or cheaper debt than their smaller counterparts.

Central Otago District Council

24,306 population (2023)

18,875 people serviced with water supplies

7 wastewater treatment plants

8 water treatment plants

453 km water supply pipes

73 km stormwater pipes

264 km wastewater pipes

28 water connections per kilometre

56% of people live in urban areas

$85,900 average household income (2019)

Key issues

Growth

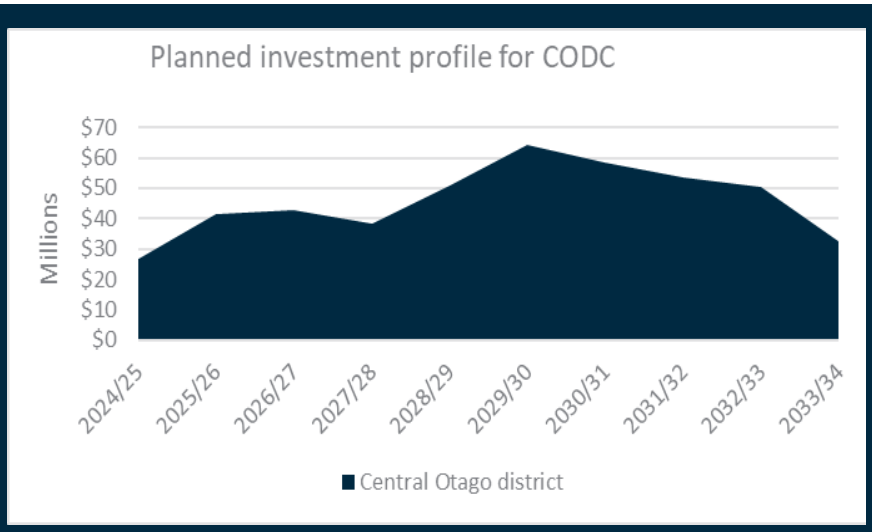
The CODC district has very high population growth in some of its townships. 53% of its planned capital works programme, totalling $244 million is intended to address growth pressures.

Small communities

Servicing small communities and balancing the need for significant investment in those communities in the future. Six of CODC's registered drinking water supplies service townships that individually have fewer than 1,000 people connected.

Affordability

To meet estimated investment needs in three waters, average three water rates are projected to increase 80% from $1,900 to over 3,450 by 2034.



$458 million of planned investment over 10 years

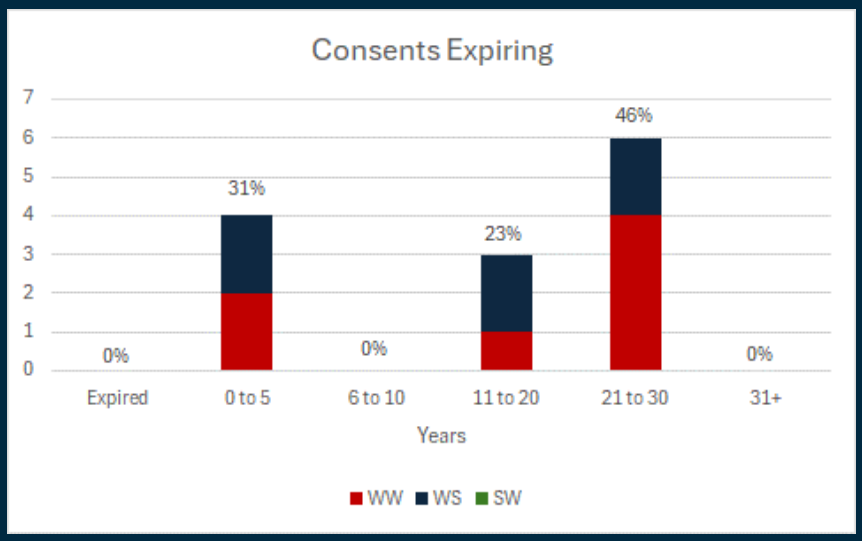
CODC's three waters capital works programme peaks at $64 million per year in 2029. For context, that's over 50% more than its entire capital works programme in 2024.

This investment profile is likely to reduce by up to $100 million due to recent government announcements that suggest discharge to freshwater environments will be permitted and fit for purpose water treatment for small supplies.

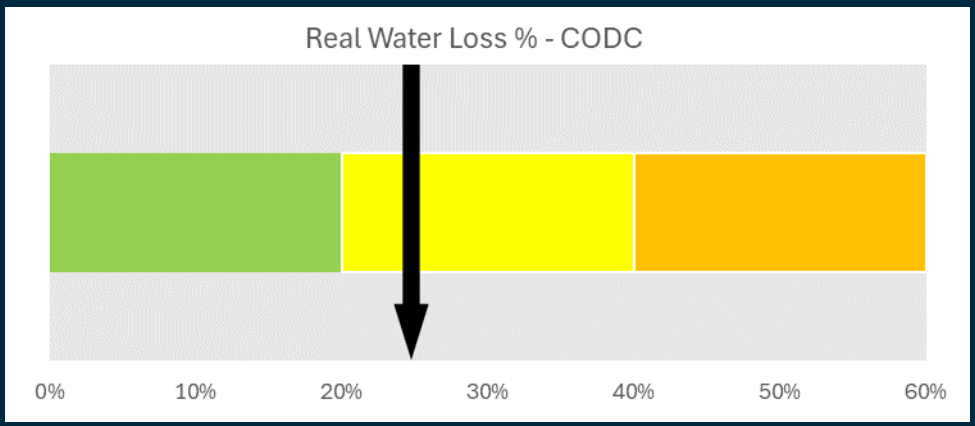
Expiring consents

CODC has four consents that are due to expire in the next 5 years. The two wastewater consents are for Alexandra and Omakau.

Both currently discharge to freshwater receiving environments. The additional financial impacts of discharging to land (if required) are expected to be in the order of $60 million - $70 million combined.



Network performance



CODC experienced an estimated 26% real water loss in the 2023 financial year, which is in the lower half of councils in the Otago and Southland regions. Water loss in 2022 was 25%.

There were 2.75 dry weather overflows of the wastewater network per 1,000 connections in 2023.

Compliance

CODC was not fully compliant with the drinking water standards in 2023, non-compliance related to a lack of Protozoal barriers in its Ranfurly, Patearoa, Cromwell and Omakau supplies. It also had supplier notifications for MAV exceedances in its Roxburgh and Cromwell schemes and issued temporary consumer advisories for its Ranfurly and Patearoa schemes in 2023.

Area	22/23 results	22/23 Target	21/22 results	Trend[2]
Bacterial compliance	Not Achieved	100% Compliance	N/A	↔
Protozoal compliance	Not Achieved	100% Compliance	N/A	↔

CODC received 5 Abatement Notices and 2 Infringement Notices for its wastewater treatment plants in 2022/23, an increase from 3 Abatement Notices in 2021/22. Two abatement notices have since been lifted, with three remaining in place as at August 2024.

Demand management

CODC has experienced a period of rapid population growth since 2013. The average annual growth rate of 3.7% is much higher than the growth seen from 2006-2013 which was an annual average of 1.2%. Over the last two years this growth has slowed to a rate of 2.5% due to impact of Covid. Short term and long-term indicators suggest the population growth rate will continue at a rate similar to the last two years, rather than the more accelerated rate seen prior to that.

Water Consumption
516 ↓
(lpd/resident)

To respond to infrastructure pressures arising from Growth, CODC has provided for $244 million of investment in growth projects. Existing universal water metering also provides opportunities to address growth challenges.

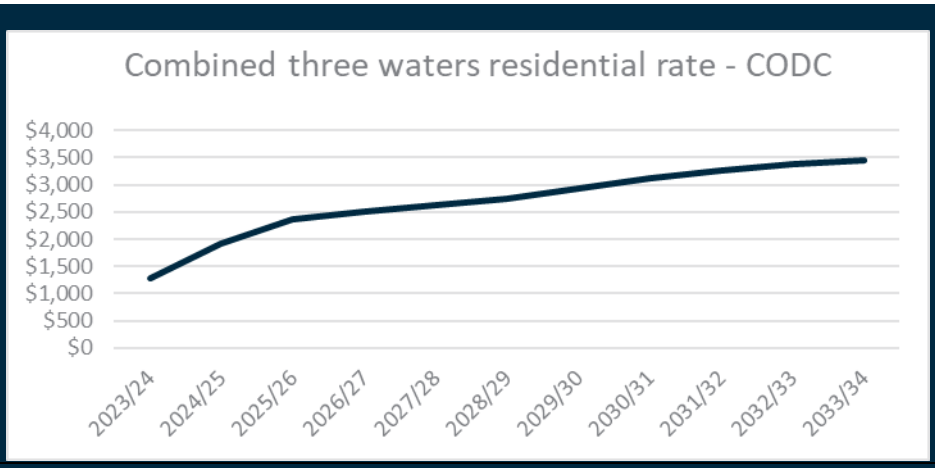
Network condition and age

CODC's water, wastewater and stormwater infrastructure has the second lowest average age of all of the councils in the Otago and Southland regions. Expected useful life of water infrastructure varies depending on a range of factors, including material, diameter, and operating conditions, however given the low average age of infrastructure, CODC is unlikely to have an immediate need for significant renewals investment.

Service	Age (avg)	C1	C2	C3	C4	C5	Unknown
Water Supply	27	84%	8%	5%	1%	2%	0%
Wastewater	31	86%	9%	3%	2%	0%	0%
Stormwater	31	99%	0%	1%	0%	0%	0%

Condition assessment of CODC's three waters assets show a high portion of assets in Condition 1. Again, this indicates no immediate need for significant renewals investment, however we would have expected to have seen more of a distribution in the other condition grades.

[2] Compared to previous year

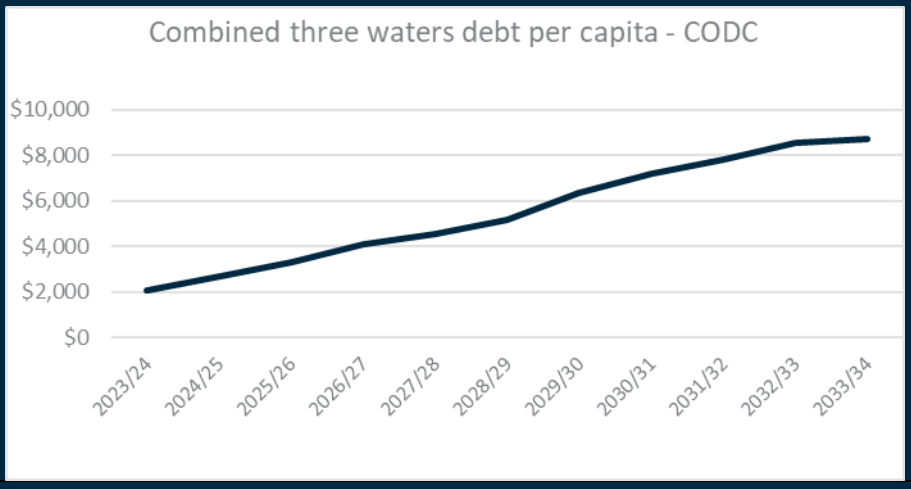


Three waters residential rates

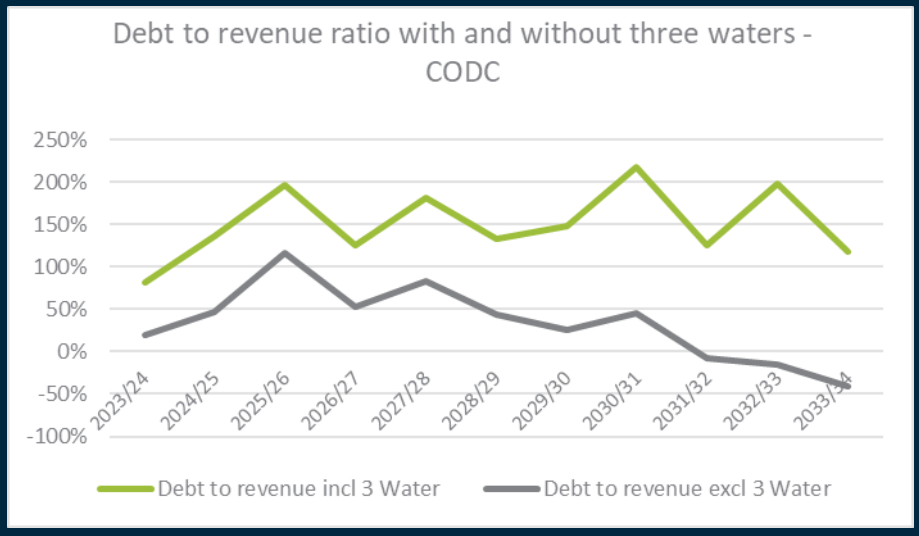
The average residential rate for three waters services in CODC is projected to more than double from about $1,300 including GST in 2024 to about $3,450 in 2034 according to early drafts of its 2024 long term plan (which was subsequently deferred).

Three waters debt

CODC's initial draft 2024 Long Term Plan forecast an increase in total three waters related borrowings from approximately $55 million in 2024 to about $297 million in 2034. This represents a four-fold increase in per capita debt, from about $2,000 per capita to about $8,700 per capita in 2034.



Whole of council debt



Over the period of the initial draft 2024/34 long term plan, CODC's debt was projected to grow to over 215% of its revenue; this is primarily because of intense capital investment requirements for three waters. The projections show CODC breaching LGFA's 175% debt to revenue limit for unrated councils in 2026, at which point CODC would need to obtain a credit rating.

Council expects to generate significant future revenue from the development of residential and industrial land in its district. This is the cause of the spikes in the chart above.

Clutha District Council

18,315 population (2023)

15,000 people serviced with water supplies

11 wastewater treatment plants

16 water treatment plants

2,505 km water supply pipes

57 km stormwater pipes

217 km wastewater pipes

3 water connections per kilometre

36% of people live in urban areas

$86,300 average household income (2019)

Key issues

Mixed use rural water schemes

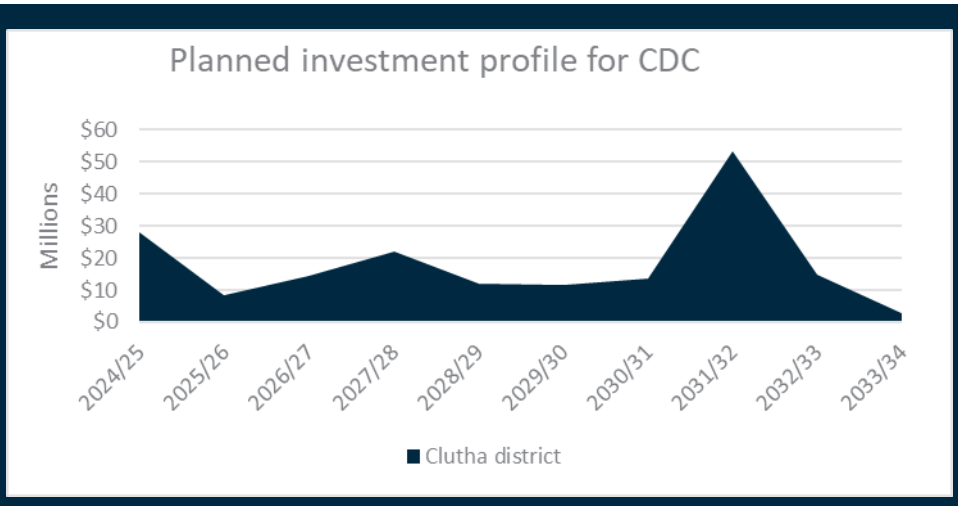
Council owns and manages 22 rural water schemes for domestics consumption and drinking water for stock. The ongoing costs of operation and maintenance of the schemes is expected to become unaffordable over time.

Low connection density

Council has one of the longest reticulated water networks in the country, and consequently the lowest connection density in New Zealand. Low connection density results in high costs to operate and maintain a network that services few people.

Compliance

Delivering drinking water that is compliant with drinking water standards has been challenging in a number of rural mixed use schemes in particular. 6,221 people connected to schemes had consumer advisory notices in place in 2023.



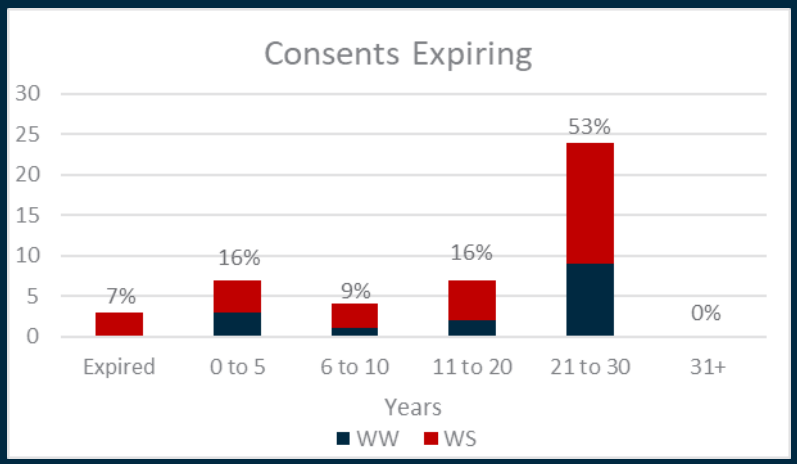
$181 million of planned investment over 10 years

The programme peaks at $53 million in 2032. For context, this is about equal to CDC's entire planned capital works programme (for all activities) in 2024.

Expiring consents

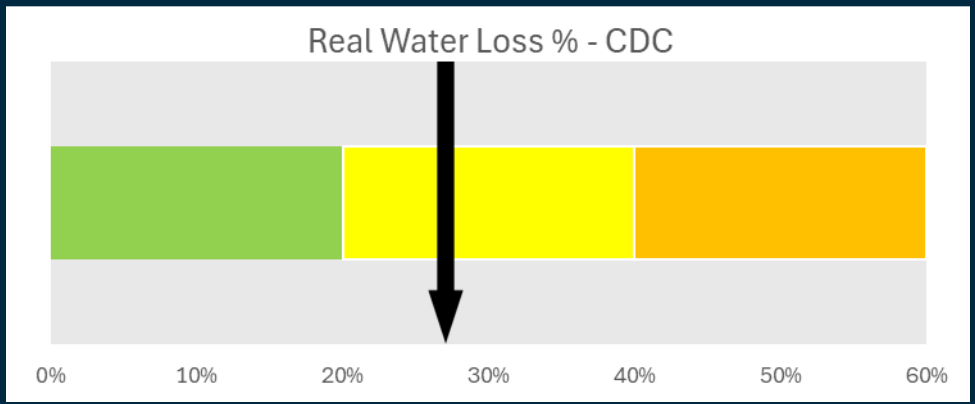
CDC has three water supply consents that have expired and 7 that expire in the next 5 years. There are a large number of consents (24) that expire in the years 21 to 30.

CDC has 45 resource consents across its 27 water and wastewater treatment plants. Some treatment plants have more than one applicable consent.



Network performance

CDC experienced 28% real water loss in the 2023 financial year. This is average for the councils in Otago and Southland. regions.



There were 4.19 dry weather overflows of the wastewater network per 1,000 connections in 2023. CDC's wastewater network met its target levels of service in the last two years, although with 4.19 dry weather overflows is worse than most other councils in the Otago and Southand regions and their targets are all also lower than CDC's.

Compliance

All 14 of Clutha's drinking water schemes have bacterial barriers, protozoal barriers, and residual disinfection in place other than Tuapeka West (which is to be replaced with the Greenfield Bore scheme).

Notwithstanding this, all schemes other than the Lawrence and Balclutha schemes issued supplier notifications to Taumata Arowai regarding unsafe, or maybe unsafe, drinking water. Eight of the 14 schemes had consumer advisory notices issued during the 2023 year, of which six were permanent advisory notices.

Area		22/23 results	22/23 Target	21/22 results	Trend[3]
Bacterial compliance	Urban	0%	100% - Not Achieved	81%	↓
	Rural	0%	94% - Not Achieved	39%	↓
Protozoal compliance	Urban	0%	>89% - Not Achieved	49%	↓
	Rural	0%	>66% - Not Achieved	0%	↔

Seven schemes exceeded Maximum Allowable Values for aluminium in 2023.

CDC received 7 Abatement Notices and 3 Infringement Notices for its wastewater treatment plants in 2022/23.

Demand management

The Clutha district is not expected to experience significant population growth in the near future. Changes in demand owing to population or economic growth are therefore not expected to create any significant challenges for the district moving forward.

Water Consumption
530 ↓
(lpd/resident)

A number of Clutha's existing surface water takes already have low flows, particularly during summer months. Any future increases to minimum water flow levels that may be imposed as part of future consent renewals may require CDC to find alternative water sources or implement further demand management strategies for those affected scheme.

Network condition and age

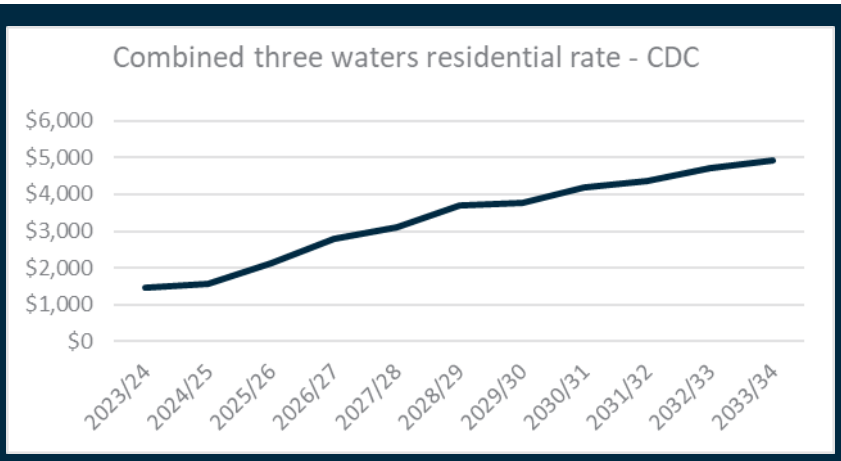
The age of each of CDC's water, wastewater and stormwater infrastructure is about average for the councils in the Otago and Southland regions.

CDC notes in its asset management plan that the impacts of an ageing network are becoming evident now, particularly in relation to its concrete and asbestos cement water supply reticulation assets.

Service	Age (avg)	C1	C2	C3	C4	C5	Unknown
Water Supply	36	28%	2%	5%	2%	1%	62%
Wastewater	41	49%	32%	13%	1%	2%	3%
Stormwater	53	20%	62%	6%	5%	5%	2%

A large quantity of the water supply network has yet to be condition assessed.

[3] Compared to previous year



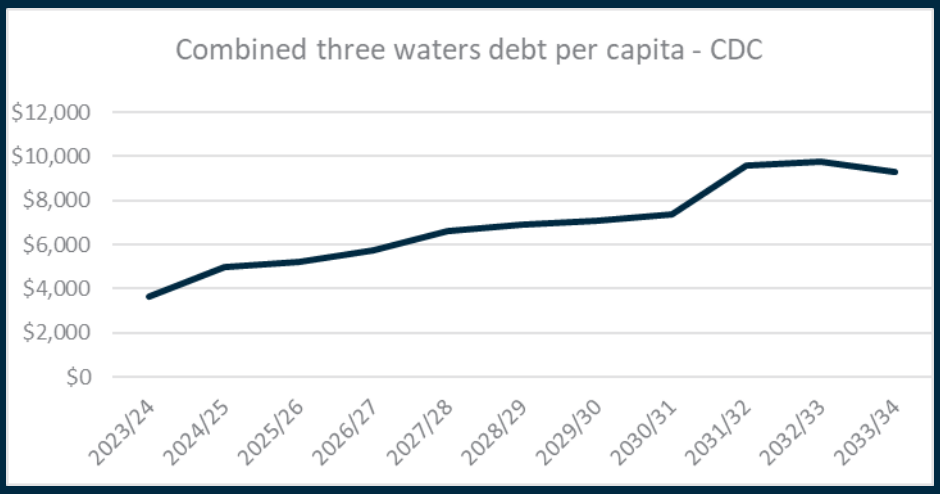
Three waters residential rates

The average three waters residential rate in CDC for 2023/24 was approximately $1,460 (including GST). Over the period of the LTP this is expected to more than triple to about $4,900 by 2034.

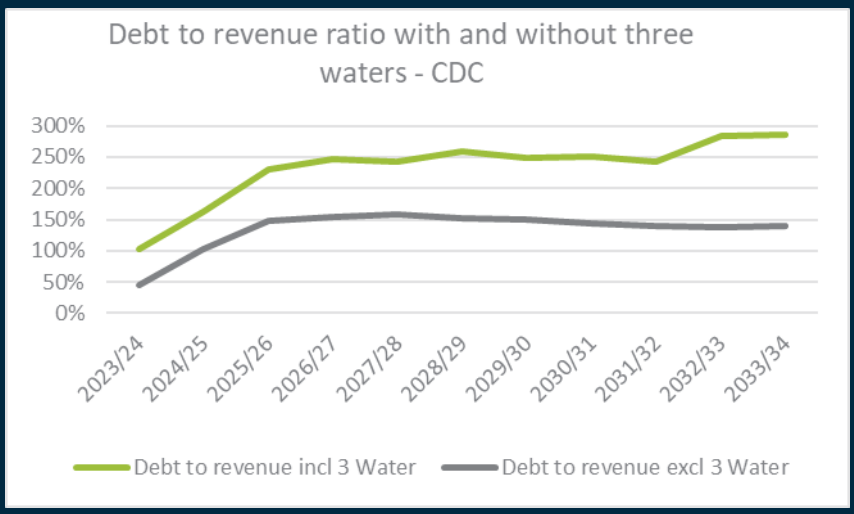
CDC separates rural and urban drinking water charges, so may not represent charges for all customer groups.

Three waters debt

Three waters debt for CDC is projected to increase from approximately $70 million in 2023/24 to a peak of $194 million by 2033/34. In per capita terms, three water debt will nearly triple from $3,660 per person to $9,300 per person.



Whole of council debt



Based on LTP projections, CDC will exceed LGFA's 280% debt to revenue lending covenant by 2032/2033. At this point it will be unable to borrow further funds without significant cost to ratepayers.

CDC's own draft Long Term Plan does not indicate that this lending limit will be breached. We note that our calculations of debt to revenue ratios rely upon data from funding impact statements and projected statements of financial position using a consistent approach across all councils. It is likely that actual calculations may differ given differences in reporting across councils.

Without three waters related debt, Council is unlikely to reach or exceed any borrowing limits within the foreseeable future.

Dunedin City Council

128,901 population (2023)

115,357 people serviced with water supplies

7 wastewater treatment plants

4 water treatment plants

1,390 km water supply pipes

385 km stormwater pipes

958 km wastewater pipes

35 water connections per kilometre

92% of people live in urban areas

$88,800 average household income (2019)

Key issues

South Dunedin flooding

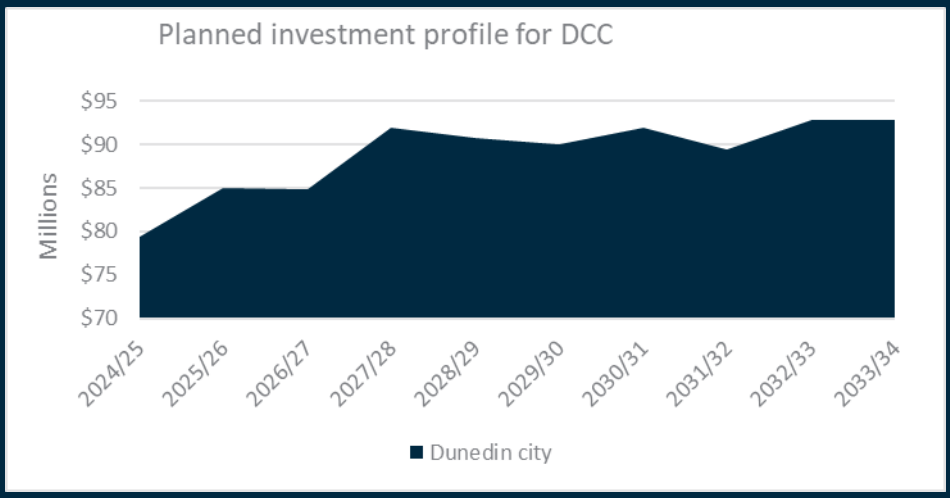
Periodic flooding in South Dunedin has been identified as a growing issue that needs to be managed.
A joint programme of work is underway with Otago Regional Council to look at planning, land use and infrastructure opportunities. A range of blended interventions will likely be required over decades, along with substantial investment.

Providing for growth

Network capacity issues on parts of Dunedin's water network mean that it is unable to provide for future housing development in parts of its city. Water take limits during dry periods also occasionally impact water supply across the network.

Ageing infrastructure

Dunedin's water, wastewater and stormwater networks are all the equal oldest in Otago and Southland.

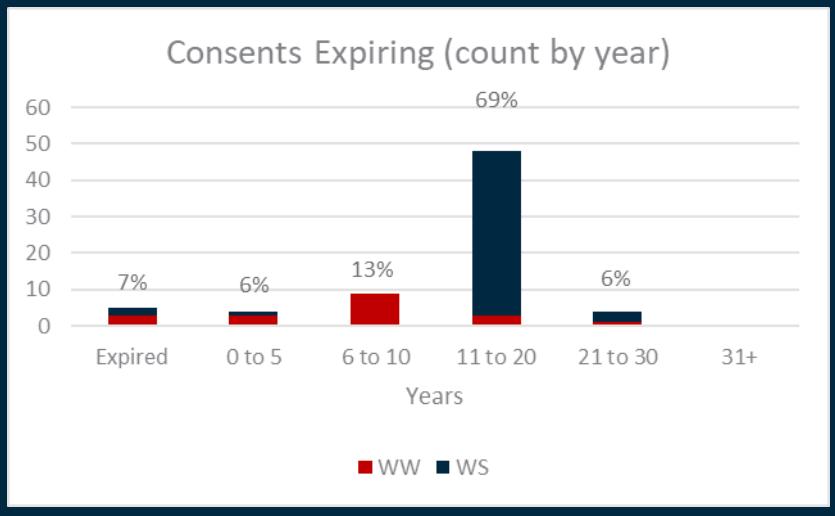


$890 million of planned investment over 10 years

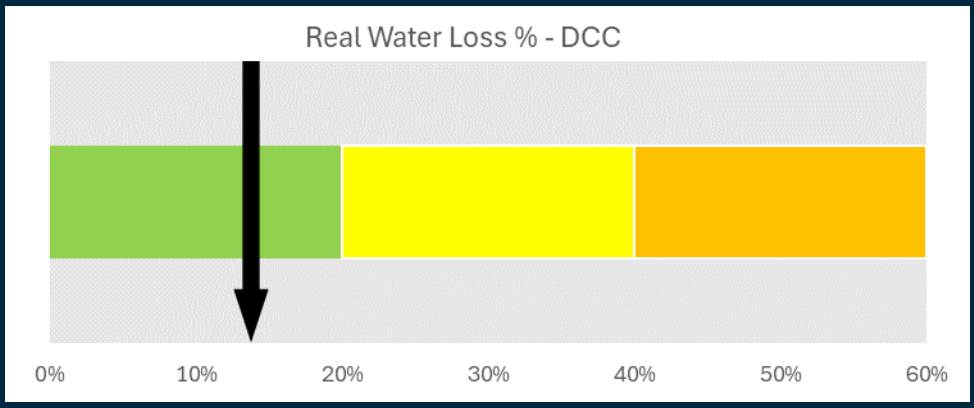
The programme is based on consistent delivery of around $90 million per year from 2028. For comparison, DCC's 2023 annual report shows it delivered $93 million in three waters capital projects during the year.

Expiring consents

The resource consents for the Green Island and Tahuna wastewater treatment plants are due to expire in 2032. Resource consents for the Waikouaiti and Middlemarch wastewater treatment plants are due to expire in 2027 and 2029 respectively.



Network performance



DCC experienced 15% real water loss in the 2023 financial year, which is amongst the lowest in the Otago and Southland councils. Water loss was 22% in 2022.

There were 3.58 dry weather overflows of the wastewater network per 1,000 connections in 2023, an increase from 2 per 1,000 connections in the previous year.

Compliance

DCC was not fully compliant with the drinking water standards in 2023. Non-compliance related to lower than required levels of free available chlorine in the Wingatui distribution zone and exceeding the maximum sampling intervals in a number of locations. Steps have been put in place to address all of these issues.

All of DCC's water supplies have bacterial and protozoal barriers and residual disinfection in place.

Taumata Arowai reports than in 2023 it received 3 notifications for MAV exceedance on the Dunedin City supply, and that the Waikouaiti supply exceeded lead MAVs on one occasion.

Area	22/23 results	22/23 Target	21/22 results	Trend[4]
Bacterial compliance	81%	100% - Not Achieved	50.5%	↑
Protozoal compliance	98.6%	100% - Not Achieved	99.6%	↓

Demand management

Dunedin experienced 3.2% growth in its population between 2022 and 2023.

Dunedin already faces some constraints on water supply. It's draft 2024 infrastructure strategy notes that constraints exist in relation to:

Water Consumption
280 ↑
(lpd/resident)

- Flows and pressure not always meeting requirements for firefighting purpose
- Occasional issues during summer months where raw water take needs to reduce to maintain minimum flows
- Infrastructural constraints on the volume of water able to be delivered to some parts of the city
- Expiring water take consents, particularly in the Taieri plains area which is already over-allocated

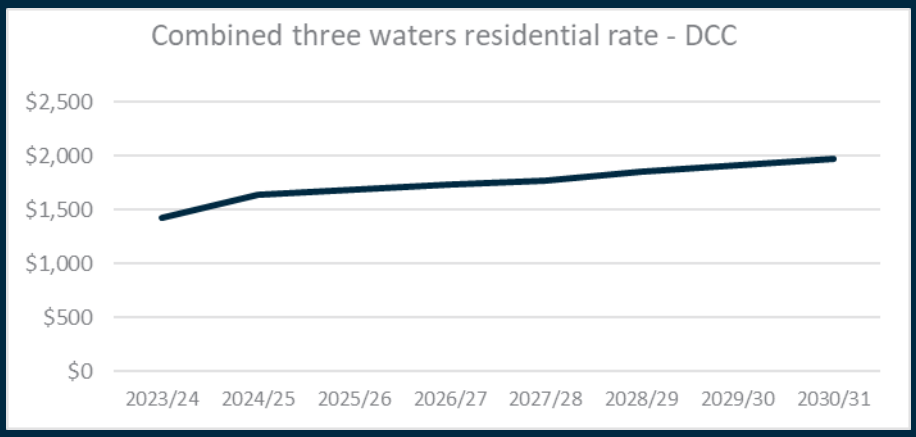
Network condition and age

A large proportion of Dunedin's three waters network is yet to have a condition assessment, however DCC's infrastructure strategy identifies that a significant proportion of its wastewater reticulation network and treated water pipelines are in poor condition.

Particular issues are noted relating to the wastewater network, which is experiencing stormwater and ground water infiltration and inundation. This also creates capacity issues in the network during high intensity rainfall events.

Service	Age (avg)	C1	C2	C3	C4	C5	Unknown
Water Supply	49	2%	4%	4%	1%	2%	87%
Wastewater	61	1%	3%	3%	1%	1%	91%
Stormwater	57	1%	1%	2%	1%	3%	92%

[4] Compared to previous year

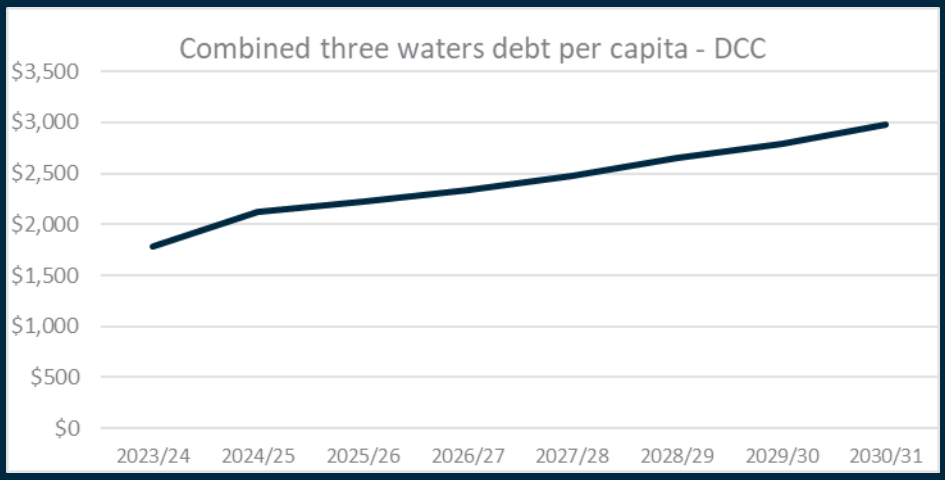


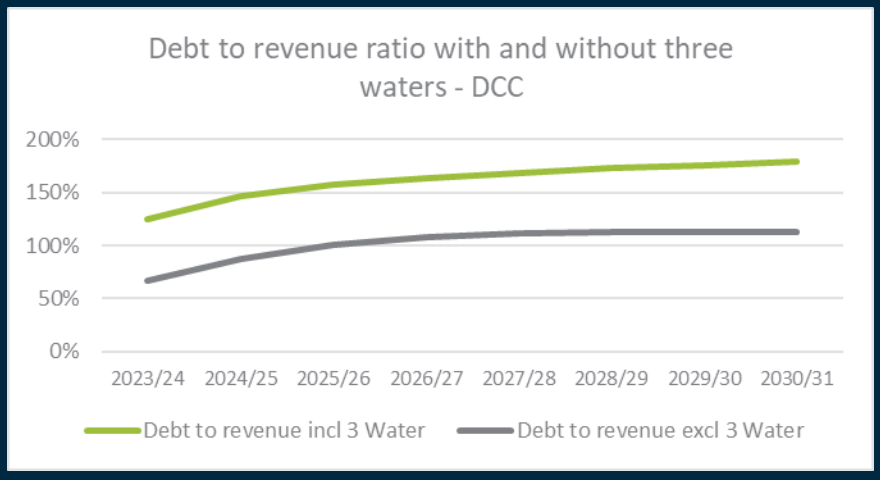
Three waters residential rates

Projections for Dunedin City Council, based on its adjusted 2021/31 Long Term Plan, see average residential three waters rates increase from $1,430 including GST in 2024 to $1,980 including GST by 2031.

Three waters debt

Dunedin's three waters net debt over the period of its adjusted 2021/31 long term plan is projected to rise from approximately $247 million in 2024 to $428 million in 2031. This translates to $2,980 per capita in 2031.





Whole of council debt

Dunedin's 2021 Long Term Plan projects total debt to reach 180% of revenue by 2031.

An increased capital works programme and borrowing requirements identified as part of the 2024 long term plan preparation would likely have resulted in further increases to debt to revenue ratios. Our projections do not anticipate Dunedin breaching its 280% borrowing limits based on increased three waters capital expenditure alone.

Notably, DCC's debt to revenue ratio is expected to improve if three waters revenue and debt were to be transferred. However, the upward trend of borrowings excluding three waters, indicates that at the time of the 2021 LTP, three waters investment needs were not significantly constraining planned investment in other council activities.

Gore District Council

12,711 population (2023)

9,290 people serviced with water supplies

3 wastewater treatment plants

3 water treatment plants

126 km water supply pipes

62 km stormwater pipes

108 km wastewater pipes

10 water connections per kilometre

76% of people live in urban areas

$96,800 average household income (2019)

Key issues

Separation of wastewater & stormwater

Approximately 40 % of Gore and 25 % of Mataura's wastewater and stormwater networks are combined.

A study completed in 2018 estimated that it would cost $175 million to achieve full separation of the Gore network.

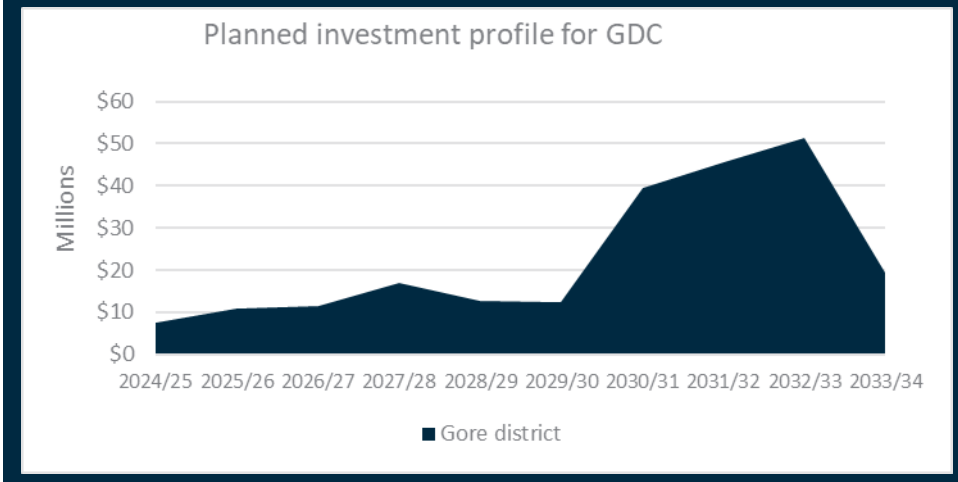
Water loss

Approximately 38% of Gore's water and 56 % of Mataura water is lost through leakage.

Given limitations on water takes from Gore's surface water supplies during dry periods, a reduction in leakage would reduce the need for water restrictions.

Debt constraints

GDC's current debt projections see it breaching both the LGFA lending covenants for credit rated, and unrated, councils. With the significant majority of this borrowing relating to three waters, investment in three waters infrastructure will be constrained without additional rates rises to support further lending.

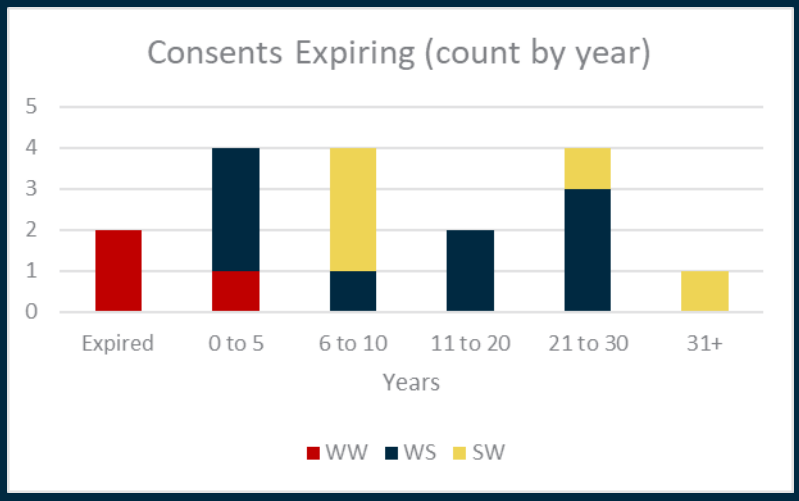


$227 million of planned investment over 10 years

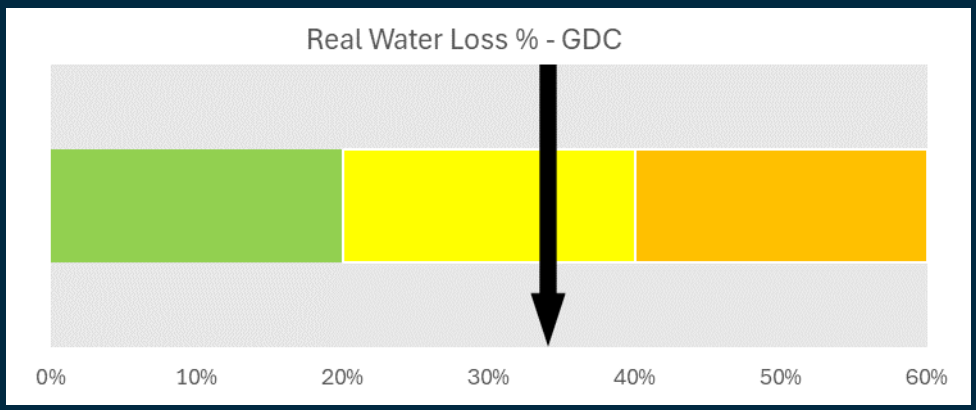
The programme is back loaded, peaking at $51 million in 2033. For context, GDC's entire planned capital works programme (for all activities) in 2024 equalled only $11 million

Expiring consents

GDC is currently in the process of applying to renew its expired discharge consents for the Gore and Mataura Wastewater Treatment Plants. Significant upgrades to improve the performance and minimise cultural impacts are expected as part of this consent renewal process.



Network performance



Approximately 38% of Gore's water and 56 % of Mataura water is lost through leakage. Investigations have not been able to identify the source of this leakage.

Managing water loss on the network would reduce the frequency of water restrictions being required in summer.

GDC's wastewater network met its target levels of service in 2023, with no dry weather overflows being reporting in its annual report.

Compliance

Gore reported that it was not compliant with protozoal and bacterial criteria in the drinking water quality assurance rules in 2023. Non-compliance related to the Mataura and Hilbre Ave water treatment plants. The Hilbre Ave water treatment plant is due to be decommissioned once a pipeline has been installed to enable raw water from that plant to be treated at the East Gore water treatment plant.

A temporary consumer advisory notice was in place for the Gore water supply for 2 days in 2023.

Area	22/23 results	22/23 Target
Bacterial compliance	Non-compliant	100%
Protozoal compliance	Non-compliant	100%

GDC had no abatement notices, infringement notices, or enforcement orders on its wastewater network in 2023 or 2022.

Demand management

GDC district is not expected to experience significant population growth in the near future, with population estimates indicating a small reduction in the population of the Gore district by 2043. Water consumption, at 452 litres per resident per day, is the third lowest in the two regions.

Water Consumption
452 ↓
(lpd/resident)

The district currently experiences periods where surface water takes for the Gore water supply need to be supplemented from a second water source. Increased frequency of extreme weather events and changing resource consent conditions may increase the need for this in the future.

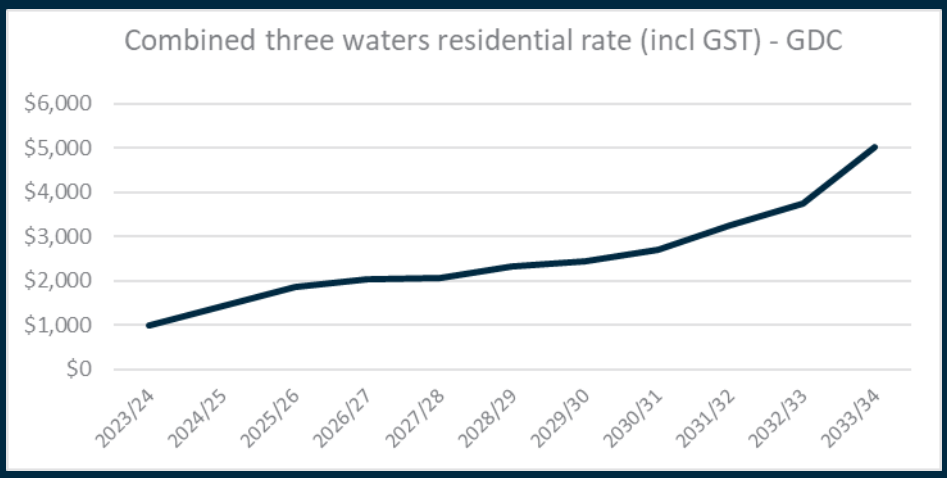
Increased frequency of intense rainfall events may exacerbate existing capacity issues on the wastewater network, which are primarily the result of the large portion (40% in Gore) of combined wastewater and stormwater network.

Network condition and age

GCC's assets are the third oldest across the two regions, with 21% of its water network having a predicted renewal date prior to 2030. Over 70km of water reticulation assets are predicated to require renewal in the 2030s, including the majority of its asbestos cement pipes.

Service	Age (avg)	C1	C2	C3	C4	C5	Unknown
Water Supply	45	18%	0%	0%	0%	0%	82%
Wastewater	52	10%	0%	3%	0%	1%	86%
Stormwater	43	17%	1%	0%	0%	0%	82%

A significant portion of the assets have yet to be condition assessed, this is a risk to Council. A condition assessment carried out in 2022 identified that over 60% of earthenware wastewater pipes were assessed as being in poor or very poor condition. Earthenware represents a significant proportion of the network.

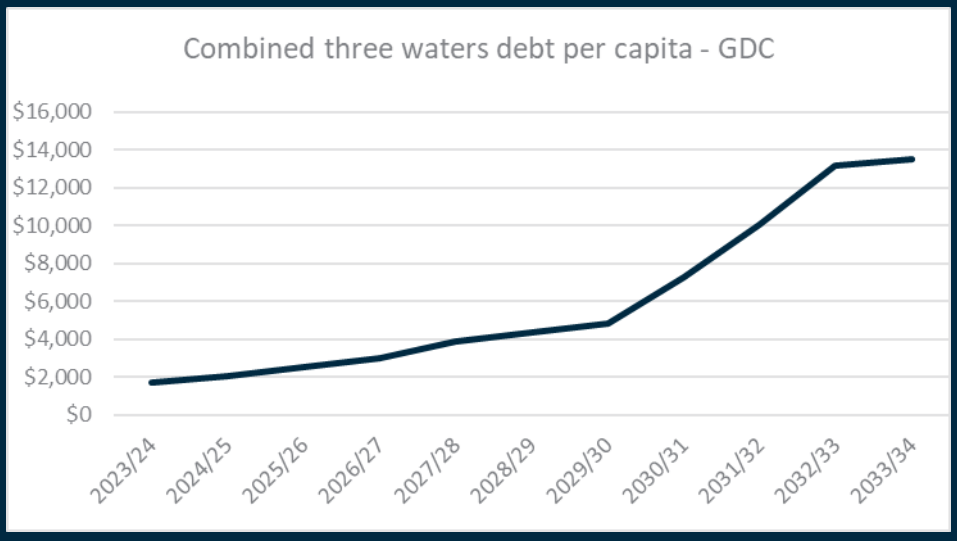


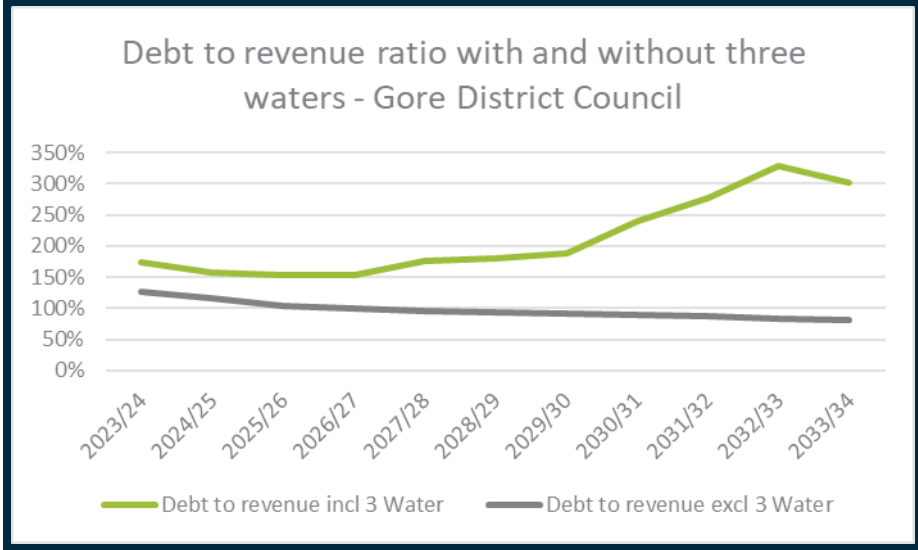
Three waters residential rates

The average three waters residential rate in GDC for 2023/24 was approximately $990 (including GST). Based on draft 2024 Long Term Plan financials that were prepared prior to Council opting to defer it's long term plan, this was expected to increase five-fold to $5,000 by 2034

Three waters debt

Three waters debt for Gore District Council is projected to increase from approximately $22 million in 2023/24 to over $180 million by 2033/34 according to early drafts of its now deferred 2024 long term plan. In per capita terms, three water debt will increase nearly six-fold from $1,750 per person to over $13,500 per person.





Whole of council debt

Gore District Council is projected to exceed its 175% borrowing limit for unrated councils until 2027/28 at which point it would need to obtain a credit rating to access further borrowing capacity. LGFA's 280% debt to revenue ratio is currently also projected to be exceeded in 2032/33 at which point GDC would need to increase revenue to fund further investment.

The removal of three waters sees Gore's debt steadily reduce over time, and for borrowing to remain well within the 175% limit.

Invercargill City Council

55,599 population (2023)

50,456 people serviced with water supplies

2 wastewater treatment plants

1 water treatment plant

422 km water supply pipes

417 km stormwater pipes

376 km wastewater pipes

52 connections per kilometre

91% of people live in urban areas

$98,000 average household income (2019)

Key issues

Expiring consents

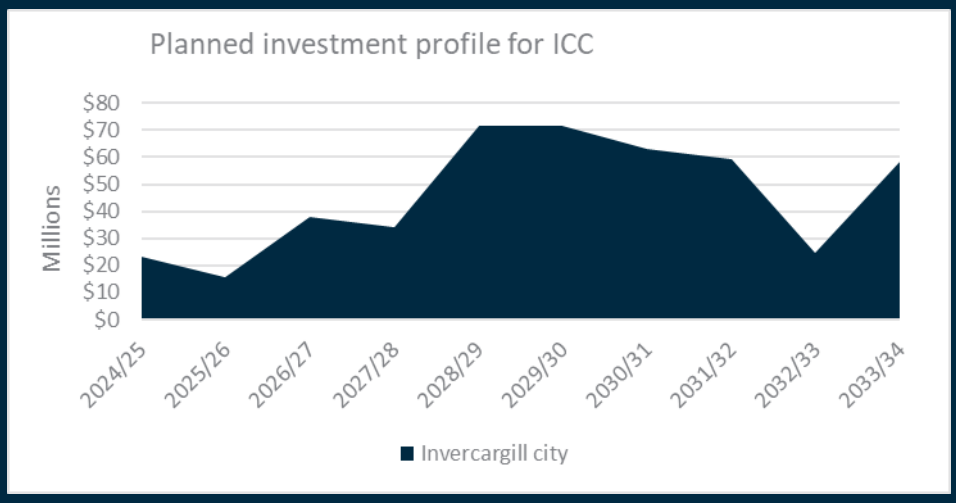
Expiring resource consents for wastewater treatment plants in Bluff and Clifton are estimated to cost a combined $111 million which is included in ICC's LTP. Any future requirement to discharge to land would incur further costs. Price estimates range from $5 – 27 million for Bluff and $40 – 200 million for Clifton

Water source resilience

ICC is currently dependent on a single water source, an additional source is required to provide water security and resilience. Development of an additional water source has been identified as a strategic priority and there is $60 million in ICC's LTP for this project

Ageing infrastructure

ICC's three waters infrastructure has the equal oldest average age across the group

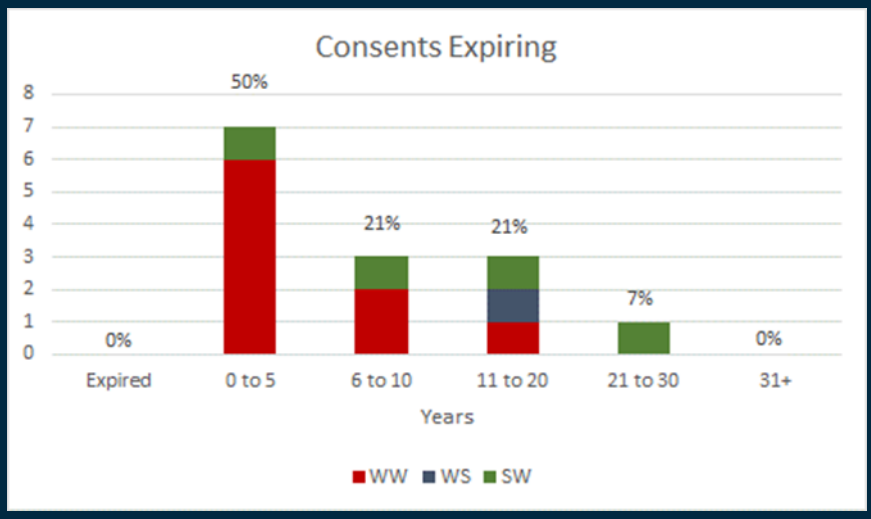


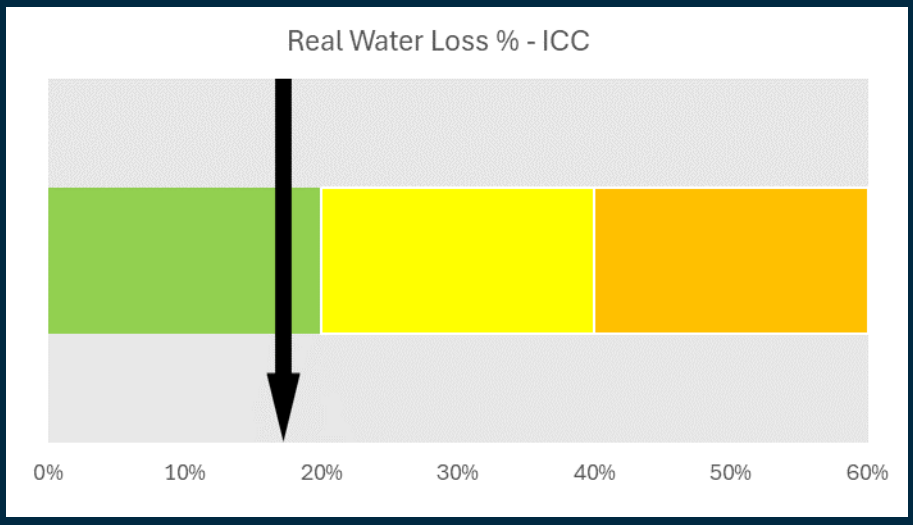
$460 million of planned investment over 10 years

ICC's three waters capital works programme peaks at $71 million per year in 2029; that's 50% larger than its entire capital works programme in 2024

Expiring consents

ICC has six wastewater consents that are due to expire in the next 5 years, with a further two due to expire in the following 5 years. These consents relate to its wastewater treatment plants in Clifton and Bluff, and $111 million has been provided for within its LTP for the upgrades to support these consent renewals.





Network performance

ICC experienced an estimated 18.5% real water loss in the 2023 financial year, which is in the lower half of councils in the Otago and Southland regions. Water loss in 2022 was reported as being 9.7%.

There were 1.37 dry weather overflows of the wastewater network per 1,000 connections in 2023

Compliance

ICC reports full compliance with the drinking water standards in its 2023 annual report and is not reported to have any Maximum Acceptable Value (MAV) exceedances or consumer advisory notices during the year.

Area	22/23 results	22/23 Target	21/22 results	Trend[5]
Bacterial compliance	100%	100% - Not Achieved	100%	↔
Protozoal compliance	100%	100% Not Achieved	100%	↔

ICC has been compliant with all of its wastewater consents, reporting no consent breaches in the last two years.

Demand management

ICC has planned to install water meters across its network and has set aside $10.8 million in its LTP to do this. ICC already reports the lowest average water consumption per resident out of all councils in the Otago and Southland regions.

Demand projections for ICC's water supply, show ICC is likely to remain within its consented water take limits for the foreseeable future, with or without the aluminium smelter at Tiwai point remaining open

Water Consumption
231 ↓
(lpd/resident)

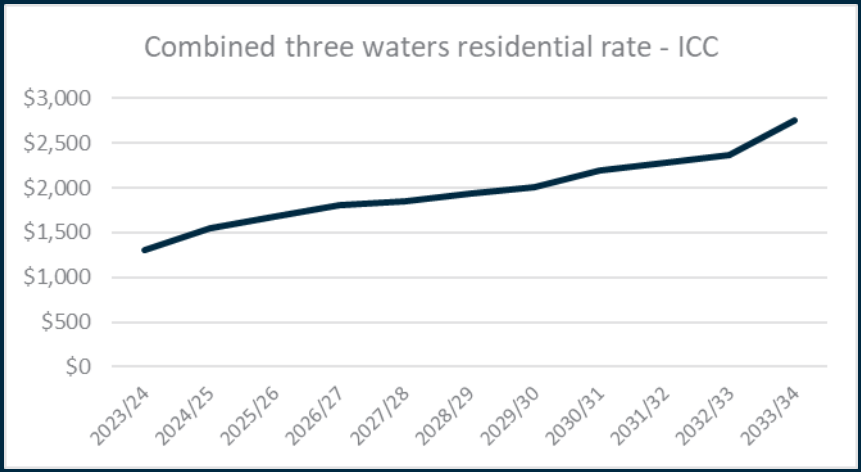
Network condition and age

ICC's water, wastewater and stormwater infrastructure each have the equal highest average age of all of the councils in the Otago and Southland regions.

Service	Age (avg)	C1	C2	C3	C4	C5	Unknown
Water Supply	49	16%	27%	18%	21%	18%	0%
Wastewater	61	21%	11%	44%	16%	8%	0%
Stormwater	58	18%	13%	37%	24%	8%	4%

39% of ICC's water network has been identified as being in poor or very poor condition, while 24% of wastewater assets and 32% of stormwater assets fell into the same categories. ICC's asset management plan notes a low level of confidence in the asset condition data as many of the assets sampled had known issues.

[5] Compared to previous year

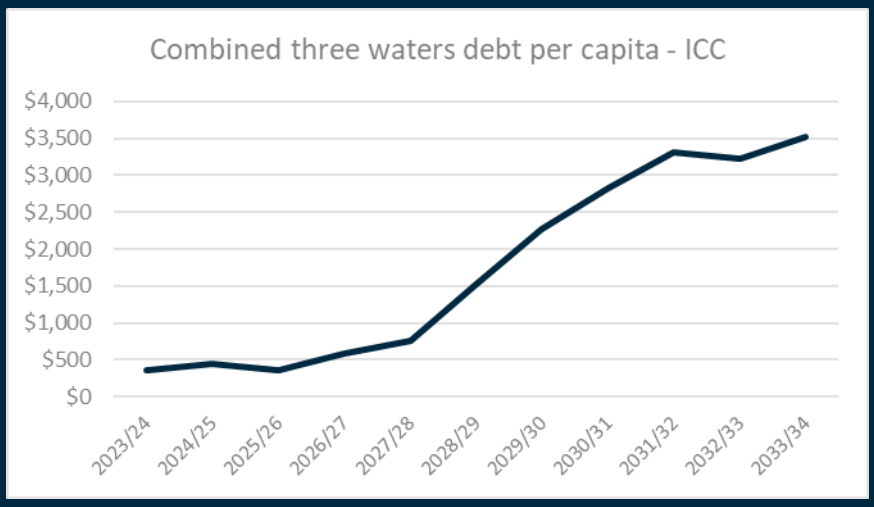


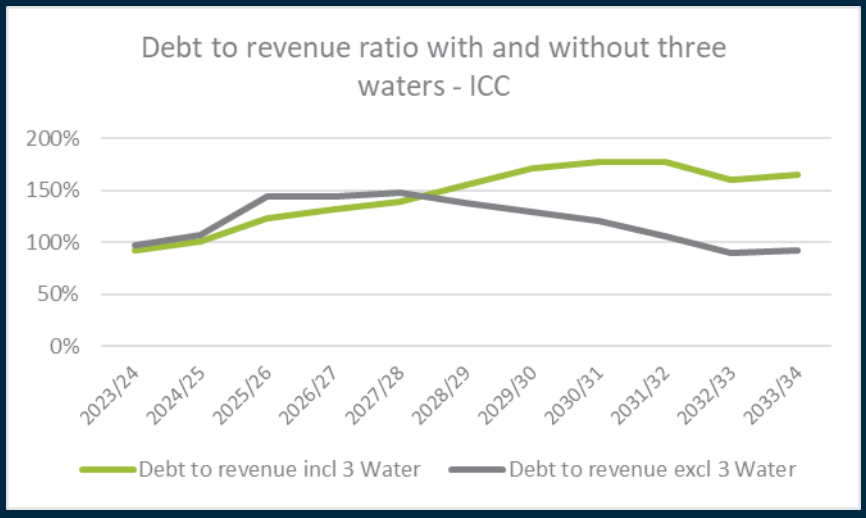
Three waters residential rates

Average residential rates (including GST) for three waters are expected to increase by 110% from approximately $1,300 in 2024 to over $2,750 by 2034.

Three waters debt

Net three waters debt is projected to increase from approximately $20 million in 2024 to over $220 million by 2034, or from $358 per head of population to over $3,500 per capita.





Whole of council debt

Council's total debt to revenue ratio is forecast to peak at 178% in 2031/32, and it is unlikely to exceed LGFA lending limits.

In the short term, without three waters debt and revenue, ICC will have reduced borrowing capacity (though still within LGFA lending limits).

Longer term, ICC will have an improvement in its total borrowing capacity if three waters debt and revenue was transferred.

Queenstown Lakes District Council

47,808 population (2023)

96,471 people serviced with water supplies

14 wastewater treatment plants

14 water treatment plants

642 km water supply pipes

465 km stormwater pipes

516 km wastewater pipes

51 water connections per kilometre

88% of people live in urban areas

$110,600 average household income (2019)

Key issues

High level of growth

QLDC continues to experience significant levels of population growth.

Providing infrastructure to support that growth is expensive, $721 million of investment has been identified as being needed in the next ten years.

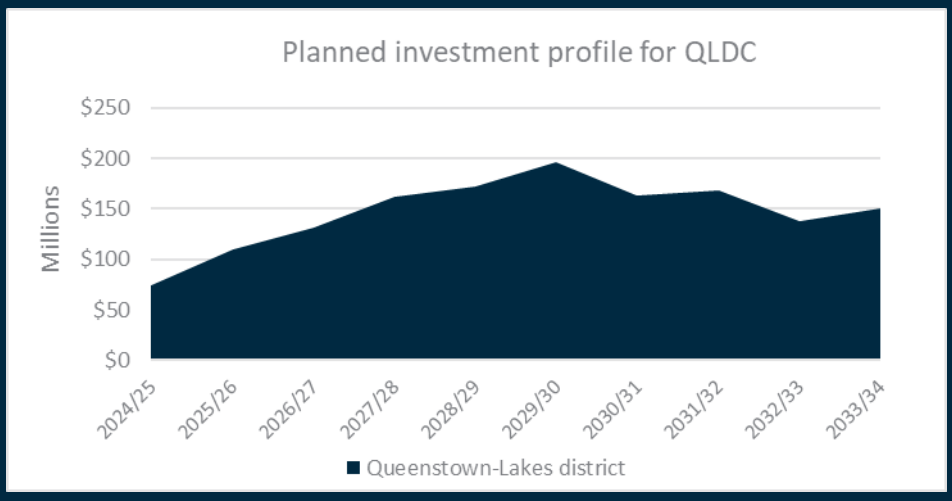
Borrowing capacity

QLDC's LTP projects an average debt to revenue ratio over the ten year period of 260%. The costs of serving this debt and funding depreciation account for half of the 15.6% rates rise proposed for the 2024/25 financial year.

Debt limits leave very little borrowing headroom.

Servicing tourism demand

QLDC's economy is dependent on its high levels of tourism. While tourism supports business in the district, the high peak tourist population means QLDC's three waters infrastructure needs to support a population that is almost double its resident population.

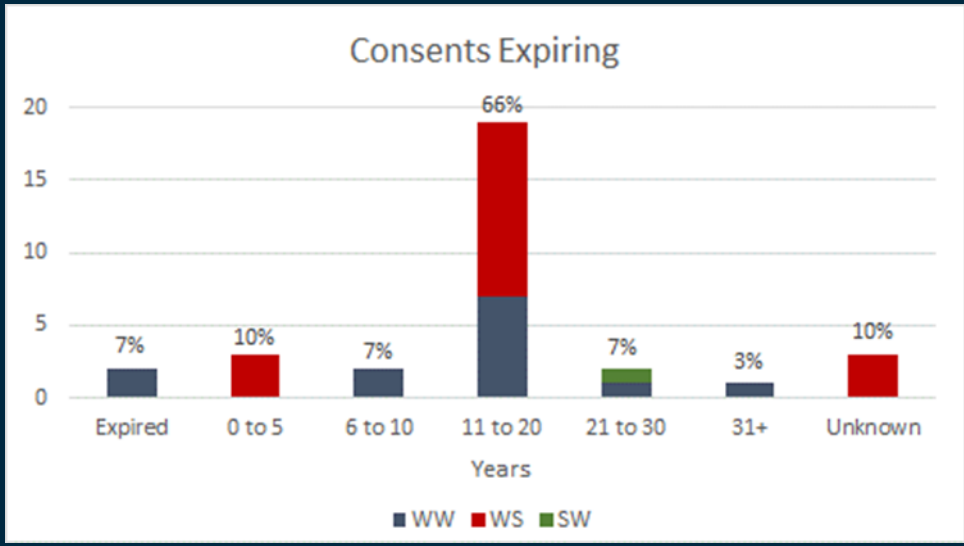


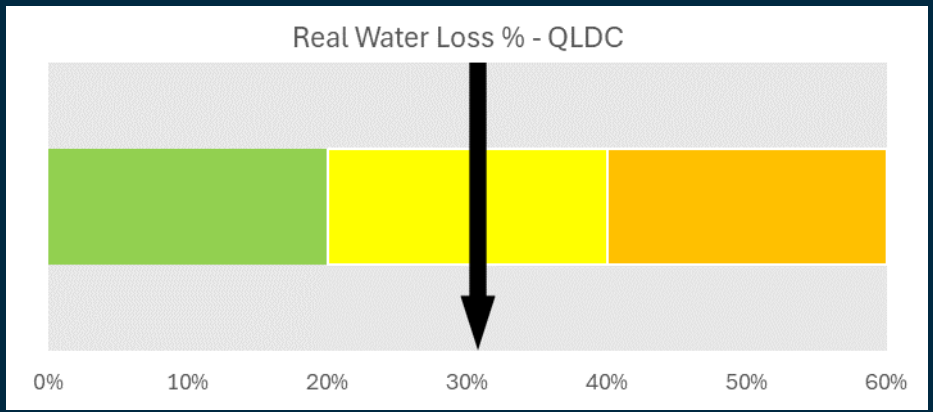
$1.5 billion of planned investment over 10 years

QLDC's three waters capital works programme peaks at $196 million per year in 2029, for context QLDC's entire capital works programme in 2024 total $202 million.

Expiring consents

QLDC has a steady rate of consents expiring until the 11 to 20 year period where 66% of its consents are due to expire.





Network performance

QLDC experienced an estimated 32% real water loss in the 2023 financial year, which is in the top half of councils in the Otago and Southland regions and high for a young network age.

There were 2.03 dry weather overflows of the wastewater network per 1,000 connections in 2023

Compliance

Queenstown has 10 registered drinking water schemes. Of these, six have all barriers in place, and four do not have protozoal barriers. All ten schemes have residual disinfection in place.

Area	22/23 results	22/23 Target	21/22 results	Trend[6]
Bacterial compliance	55%	100% - Not Achieved	100%	↓
Protozoal compliance	40%	>50% Not Achieved	11%	↑

QLDC reported 85% compliance with its resource consents in 2023 (the same as the previous year). There were two abatement notices for two wastewater treatment plants in the district in 2023.

Demand management

Demand management and servicing growth are the biggest issues facing QLDC. It's long term plan sets aside half of its three waters capital works programme, or $721 million over the next ten years to support growth.

Water Consumption
508 ↑
(lpd/resident)

QLDCs three waters asset management plan notes that the district is already facing regular water restriction during peak periods and is struggling to meet consumer demand in some areas.

QLDC's 2022/23 water consumption rate is among the highest in the Otago and Southland regions and the consumption trend has worsened compared to the previous year.

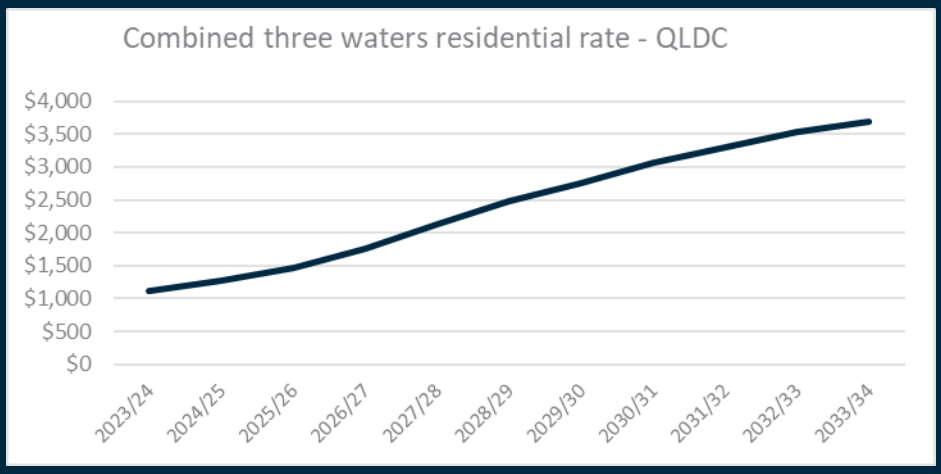
Network condition and age

QLDC's water, wastewater and stormwater infrastructure all have the lowest average age of all of the councils in the Otago and Southland regions.

Service	Age (avg)	C1	C2	C3	C4	C5	Unknown
Water Supply	19	58%	14%	11%	9%	1%	7%
Wastewater	22	53%	13%	10%	12%	5%	7%
Stormwater	25	58%	15%	11%	4%	8%	4%

QLDC notes that the condition of its three waters infrastructure is very good, with over 70% of its water supply and stormwater assets rated as good or very good. 66% of QLDC's wastewater network is also in good or very good condition.

[6] Compared to previous year

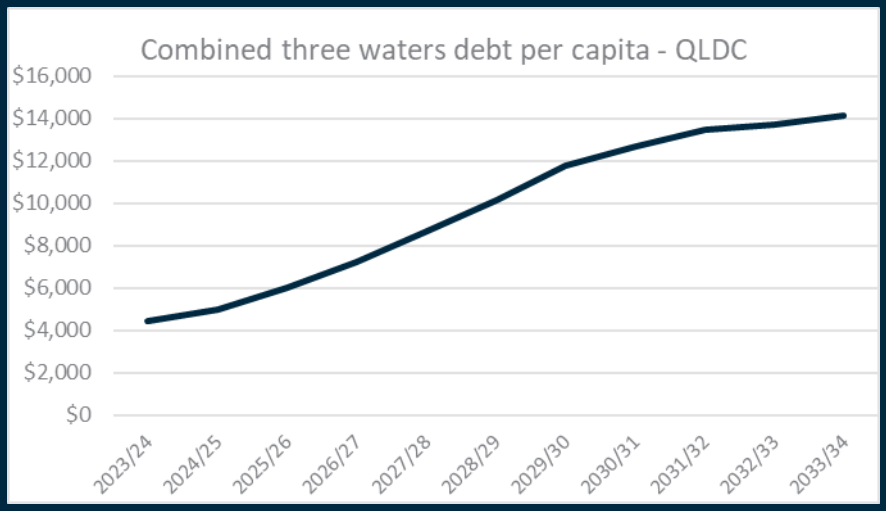


Three waters residential rates

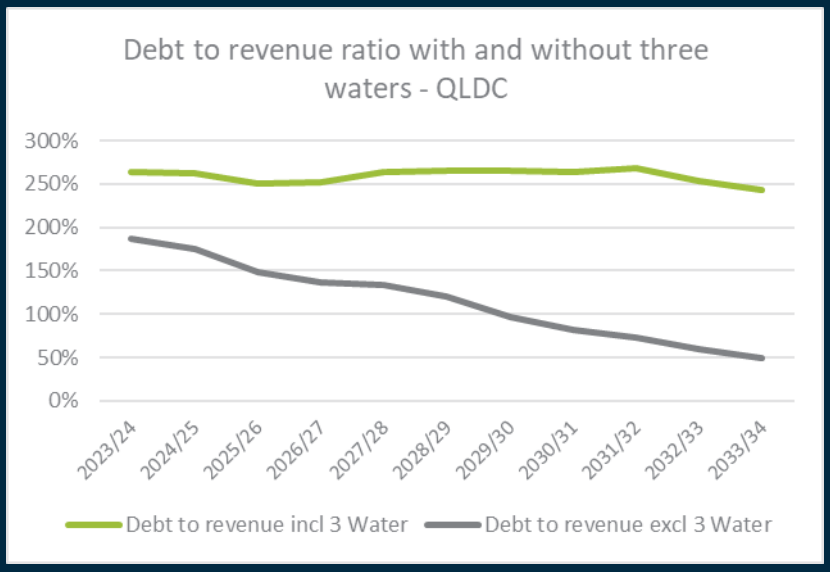
The average three waters residential rate in QLDC for 2023/24 was approximately $1,100 (including GST). Over the 10 years covered in QLDC's LTP the three waters rate is expected to increase by 230% to almost $3,700 in 2034.

Three waters debt

Three waters debt for QLDC is projected to increase from approximately $240 million in 2023/24 to over $1 billion by 2033/34 according to its 2024 long term plan. In per capita terms, three waters debt will triple from $4,470 per person to over $14,167 per person.



Whole of council debt



Based on LTP projections, QLDC is projected to remain very closely within its 280% borrowing limit through the period of its LTP. While projected debt levels do not exceed borrowing limits, QLDC will retain very little borrowing headroom.

The removal of three waters sees Queenstown's debt reduce steadily during the LTP period. This indicates that investment in community infrastructure outside of three waters has been constrained during the LTP period due to the need to invest in three waters. 60% of Queenstown's capital works programme relates to three waters services, while only 33% of its operating revenue (excluding development contributions) is from three waters charges.

Southland District Council

31,833 population (2023)

11,403 people serviced with water supplies

19 wastewater treatment plants

12 water treatment plant

681 km water supply pipes

112 km stormwater pipes

246 km wastewater pipes

13 water connections per kilometre

22% of people live in urban areas

$112,000 average household income (2019)

Key issues

Small communities

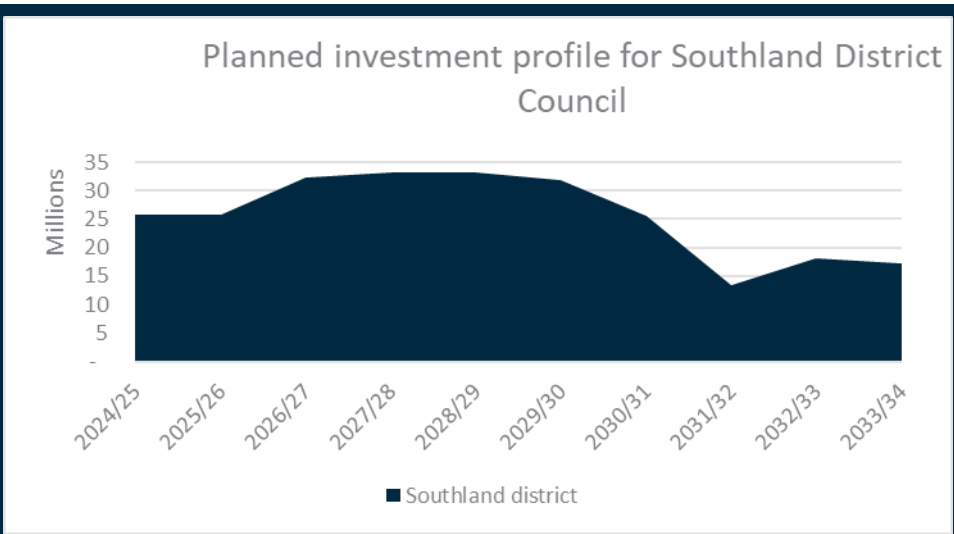
SDC provides reticulated drinking water to 12 communities within its district, and reticulated wastewater to 19 communities. Only two of these communities have populations over 1,000 people and opportunities to connect schemes are very limited.

Expiring consents

Half of SDC's existing resource consents across its three waters activities are expiring within 10 years, including 13 consents relating to wastewater treatment

Affordability

Average residential rates for three waters are expected to more than double from approximately $1,465 in 2024 to over $4,310 by 2034.



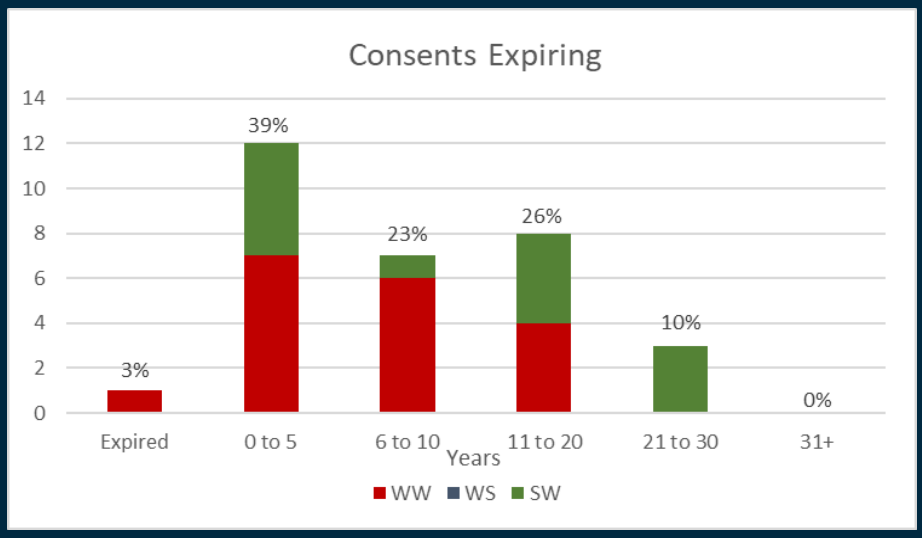
$256 million of planned investment over 10 years

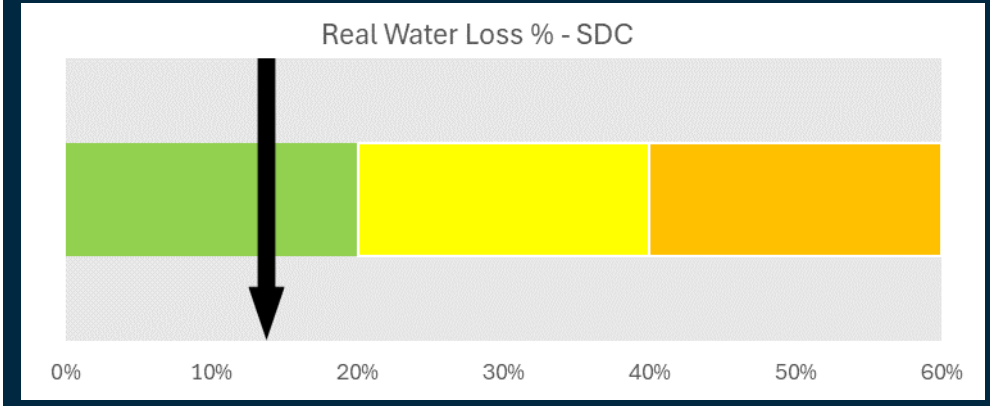
SDC's three waters capital works programme peaks at $33 million per year in 2028, for comparison its three waters capital works programme in 2024 was $12.5 million.

Expiring consents

SDC has 13 wastewater consents that are due to expire in the next 10 years. Treatment plant upgrade and consent renewals are planned for Balfour, Winton, Gorge Road, Manapouri, Nightcaps and Ohai, totalling around $37 million.

Recent announcements regarding standardised design for wastewater treatment plants with populations of fewer than 1,000 people may reduce future investment requirements for some of these plants.





Network performance

SDC experienced some of the lowest rates of estimated water loss in the Otago and Southland regions, with 15% water loss across its water supply schemes in the 2023 this was down from 16% in 2022.

There were no dry weather overflows of the wastewater network reported in 2023.

Compliance

SDC has 12 drinking water schemes registered with Taumata Arowia. All 12 schemes have bacterial and protozoal barriers and residual disinfection in place other than the Eastern Bush/Otahu Flats RWS scheme which does not have a protozoal barrier in place.

SDC had one long term consumer advisory notice in place on its Tuatapere scheme for 198 days in 2023.

Area	22/23 results	22/23 Target	21/22 results	Trend[7]
Bacterial compliance	96%	100% - Not Achieved	91%	↑
Protozoal compliance	18%	100% Not Achieved	36%	↓

SDC reported that in 2022/23 there were 15 incidents where resource consents for wastewater were breached.

Demand management

SDC does not anticipate any significant growth in demand across the district.

Given the limited expected growth it is not anticipated that a specific programme will be required to manage people related growth. SDC intends to undertake further work in the upcoming three years to more fully understand the impact of climate change related demand.

Water Consumption
583 ↓
(lpd/resident)

SDC notes that it has existing capacity issues on its stormwater network, and that future efforts to separate its wastewater and stormwater networks in those areas may overwhelm the existing stormwater infrastructure.

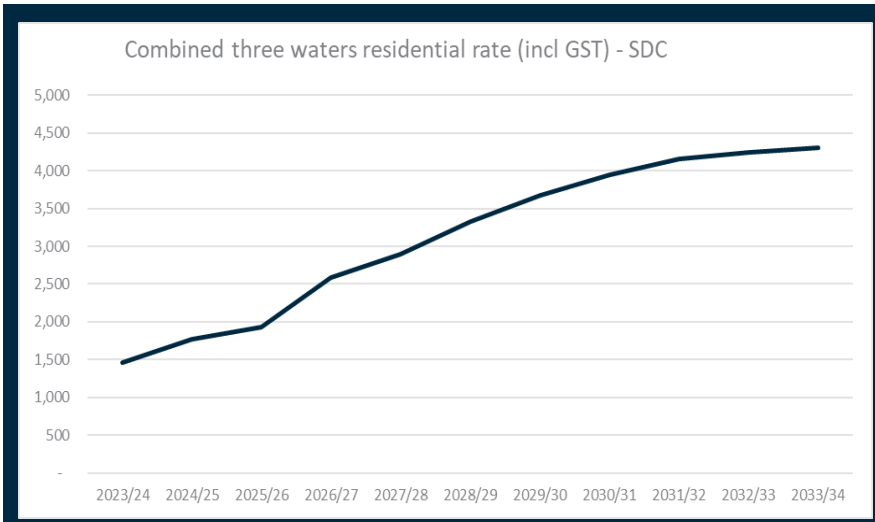
Network condition and age

The age of SDC's 3 waters assets are all in line with the Southland/Otago region average, except its wastewater which is younger.

Service	Age (avg)	C1	C2	C3	C4	C5	Unknown
Water Supply	39	19%	5%	65%	6%	5%	0%
Wastewater	30	10%	20%	40%	20%	10%	0%
Stormwater	49	17%	16%	24%	30%	9%	4%

A high proportion of SDC's wastewater and stormwater assets are in poor or very poor condition, while the majority of its water infrastructure is in an average condition.

[7] Compared to previous year

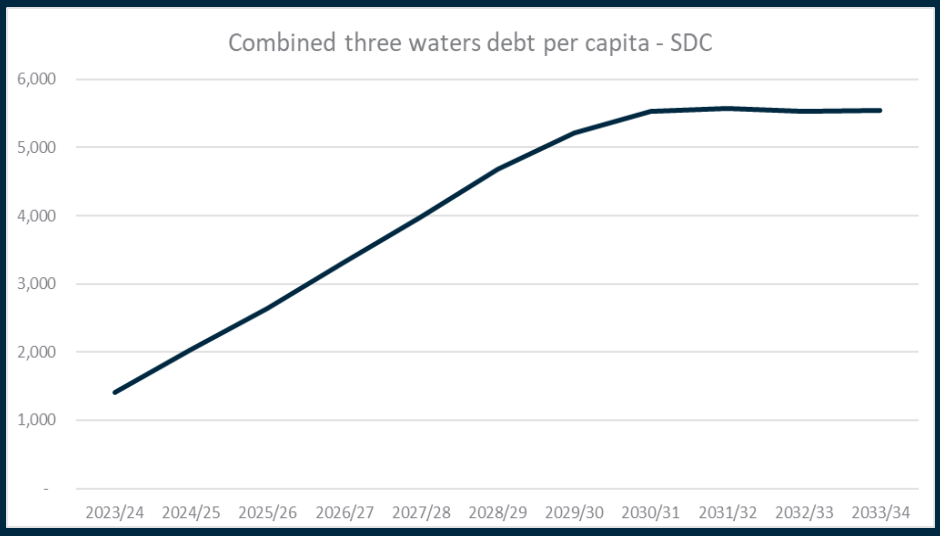


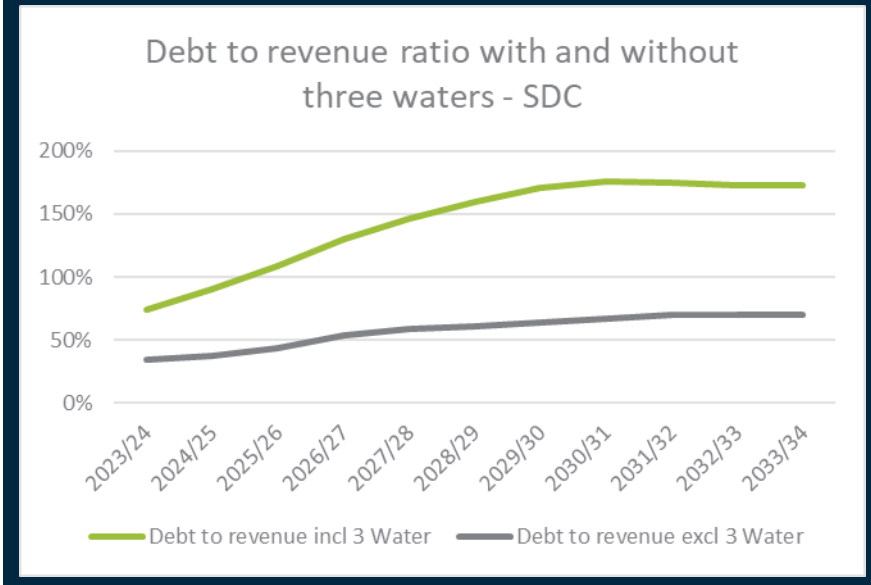
Three waters residential rates

Average residential rates (including GST) for three waters are expected to more than double from approximately $1,465 in 2024 to over $4,310 by 2034.

Three waters debt

Net three waters debt is projected to increase from approximately $46 million in 2024 to almost $200 million by 2034, or from $1,410 per head of population to over $5,540 per capita.





Whole of council debt

SDC does not currently hold a credit rating and therefore has a borrowing limit from LGFA of 175%.

Based on LTP projections, this will be close to being exceeded in 2031. Borrowing capacity will be heavily constrained without a credit rating.

Removal of three waters debt and revenue would ensure SDC stays well within LGFA lending limits.

Waitaki District Council

23,472 population (2023)

20,202 people serviced with water supplies

8 wastewater treatment plants

15 water treatment plants

1,766 km water supply pipes

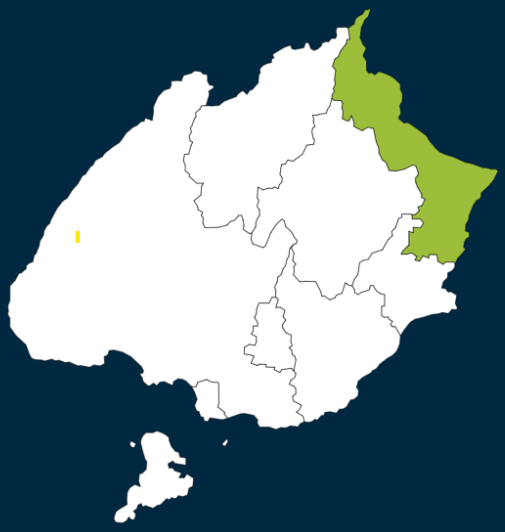
57 km stormwater pipes

201 km wastewater pipes

7 water connections per kilometre

45% of people live in urban areas

$82,200 average household income (2019)



Key issues

Small communities

WDC provides drinking water and wastewater services to a number of small schemes. 13 of its 15 drinking water schemes serve a population under 1,000. Every water and wastewater scheme in WDC has their own targeted rate, meaning large variations in the rates paid to receive water and wastewater services.

Compliance

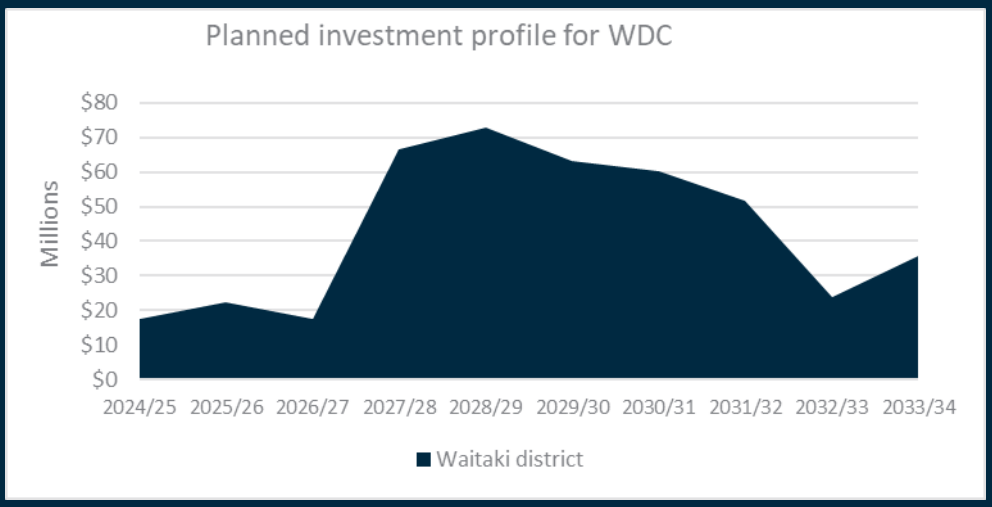
Delivering drinking water that is compliant with drinking water standards has been challenging in a number of small and rural schemes in particular.

Over half of WDC's water schemes were under long term consumer advisory in 2023, with an estimated 1,478 people affected.

Water loss

WDC experiences the highest rates of water loss across the Otago and Southland regions, with an estimated loss as high as 60% in Kurow.

Water loss can be difficult to detect due to the high prevalence of free draining soil meaning loss is not often evident on the surface.

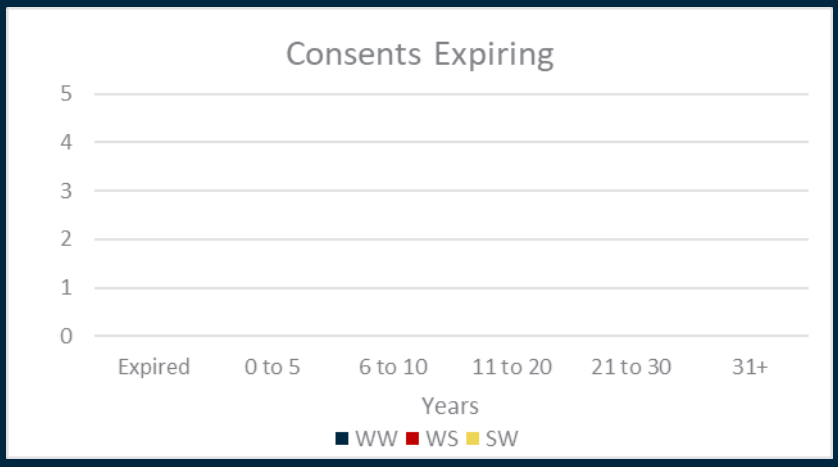


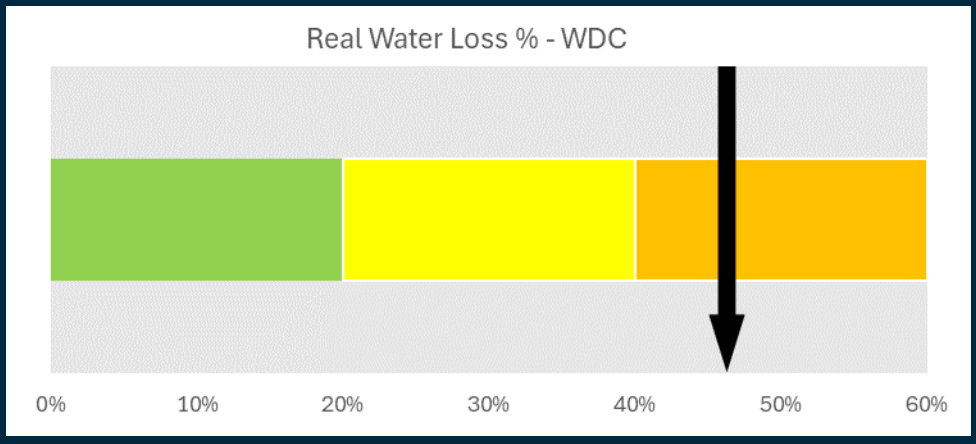
$430 million of planned investment over 10 years

WDC's three waters capital works programme peaks at $72 million per year in 2029, for context WDC's entire capital works programme in 2024 totalled $84 million.

Expiring consents

We have not been provided with consent expiry data for WDC. However, WDC's capital works programme includes consent related upgrades for Duntroon, Kurow, Lake Ohau, and Oamaru wastewater treatment plants. Total estimated capital expenditure for these upgrades total $89 million.





Network performance

WDC experienced between 35% - 60% water loss across its water supply schemes in the 2023 financial year. This is the largest rate of lost water across the Otago and Southland regions.

There were 1.3 dry weather overflows of the wastewater network per 1,000 connections in 2023

Compliance

WDC reported only 25% compliance with the drinking water standards in its 2023 annual report. Eight of its 15 registered water supply schemes were under long term consumer advisory notice during 2023. Combined, these schemes service a population of 1,478.

Area	22/23 results	22/23 Target	21/22 results	Trend[8]
Bacterial compliance	25%	100% - Not Achieved	67%	↓
Protozoal compliance	25%	100% Not Achieved	50%	↓

WDC received two infringement notices in 2023 for its wastewater consents, these related to abatement notices received in 2022.

Demand management

WDC has high levels of water loss and the third highest level of water consumption per resident across the Otago and Southland regions.

WDC is only expected to experience modest growth over the next ten years. Controlling water loss and demand management should ensure that infrastructure and existing water consents are able to manage future demand for three waters services.

Water Consumption
524 ↑
(lpd/resident)

Funding has been set aside to undertake wastewater treatment plant capacity studies for the Oamaru and Kurow wastewater treatment plant and the Oamaru stormwater network over the next five years. This should provide additional data to confirm whether capacity upgrades are required in the future.

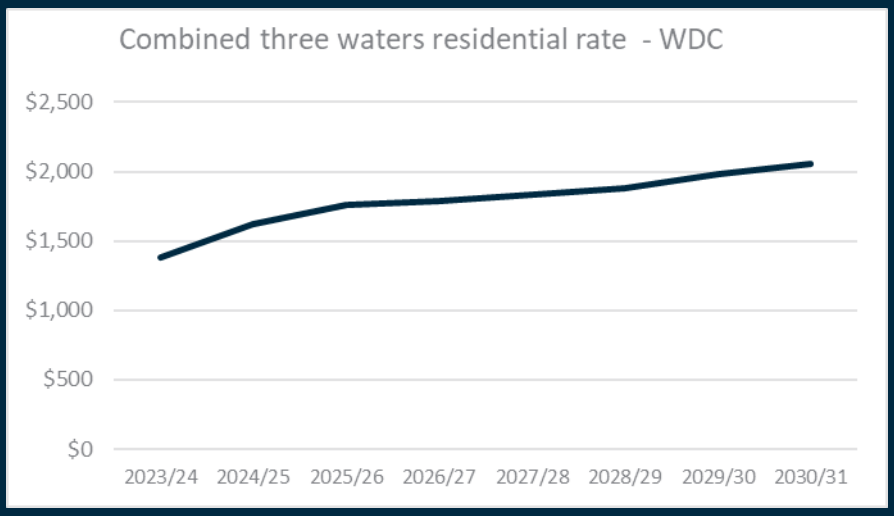
Network condition and age

WDC's wastewater and stormwater infrastructure have average ages of 50 years or more. It's water network has a lower average age, of 40 years. This makes WDC's water network among the oldest in the Otago and Southland regions.

Service	Age (avg)	C1	C2	C3	C4	C5	Unknown
Water Supply	40	0%	0%	0%	0%	0%	100%
Wastewater	50	23%	3%	0%	2%	1%	71%
Stormwater	55	0%	0%	0%	0%	0%	100%

The majority of WDC's water, wastewater, and stormwater networks are in an unknown condition. The proportion of wastewater assets rated as being in very good condition appears high compared to average asset age.

[8] Compared to previous year

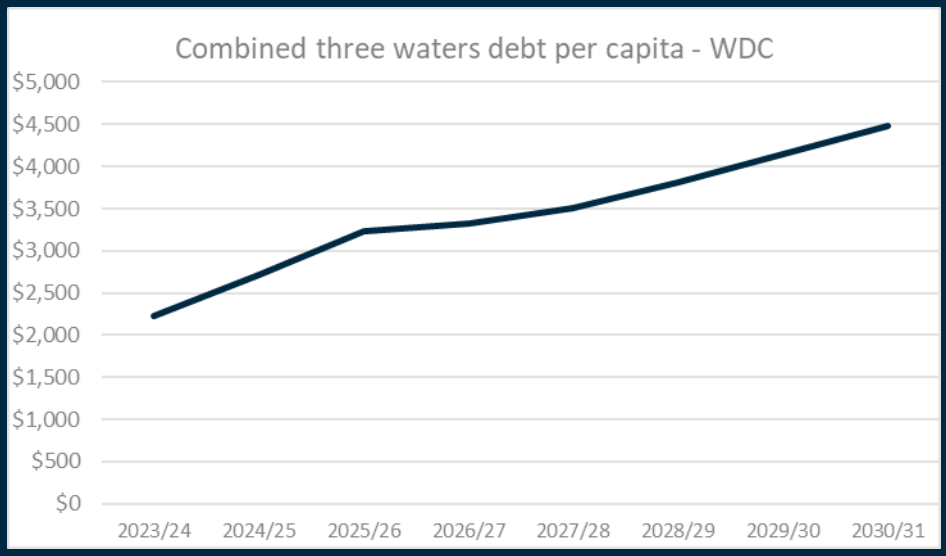


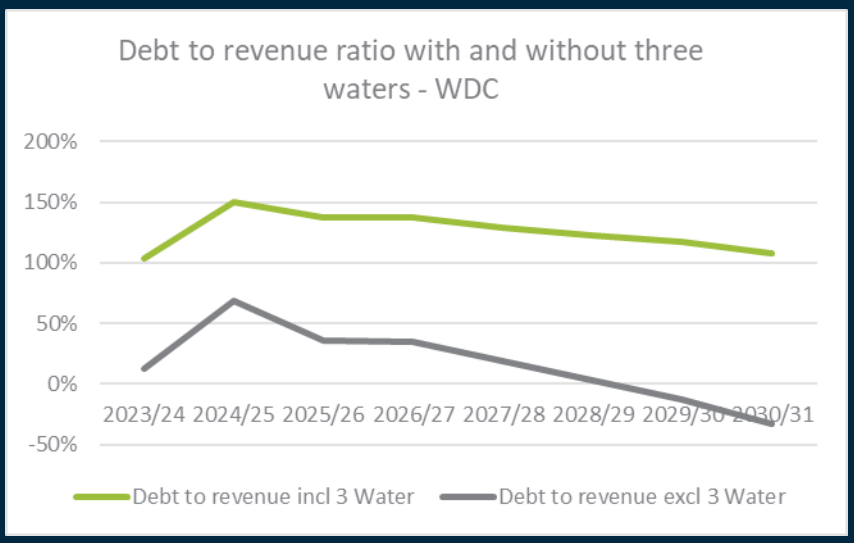
Three waters residential rates

Average residential rates (including GST) for three waters are expected to increase by 51% from approximately $1,380 in 2024 to over $2,050 by 2031.
Increases in planned investment since the 2021 LTP may increase rates by a further $1,600.
There may be a wide variation in actual charges due to the WDC's use of scheme based targeted rates.

Three waters debt

Net three waters debt is projected to increase from approximately $54 million in 2024 to over $110 million by 2031, or from $2,230 per head of population to over $4,470 per capita.





Whole of council debt

Council's total debt to revenue ratio is forecast to peak at 150% in 2025, and it is unlikely to exceed LGFA lending limits.

Transfer of three waters debt and revenue would improve Council's debt to revenue ratio, and improve its access to funding through LGFA. Negative values represent council holding investment assets that exceed its debt in later years.

We understand updated financial projections show debt significantly exceeding LGFA limits.

Appendix One

Addressing inconsistencies with currency of data

The change in government and consequential repeal of the previous Government's Three Waters reform programme resulted in significant changes to planning assumptions made by councils in the development of their 2024/34 Long Term Plans. As a result, councils were given the opportunity to delay the adoption of their Long Term Plans by up to 1 year.

In the analysis included within this report, we have relied on the *latest* adopted/approved financial and asset information available for each council. Where councils have elected to delay their Long Term Plans by a year, this information typically relates to either the 2021/31 LTP or early internal drafts of the 2024/34 long term plan that were prepared prior to the decision to defer.

We have disclosed information sources for these councils within this report.

Councils that have delayed their LTP include:

- Central Otago District Council and Gore District Council, who provided draft LTP operating and capital budgets for the 2024 – 2034 period. These budgets were used in lieu of a final 2024 LTP.
- Dunedin City Council and Waitaki District Council, who provided draft LTP capital budgets but were unable to provide draft LTP operating budgets for the entire 2024 – 34 period. For these two councils, we have:
  - Not produced forecasts beyond 2031
  - Relied on actual results for the 2021, 2022 and 2023 financial years
  - Relied on Annual Plans for the 2024 and 2025 financial years
  - Not included draft capital works programmes in our projection of future rates or debt for this exercise.

The differences between the 2024 and 2025 financial years in the 2021/31 Long Term Plans and Annual plans are significant. To address this, we have amended revenue, operating expenditure, asset and liability balances to reflect the increase values included in 2024 and 2025 annual plans. To achieve this, we have:

- Calculated the projected annual movement in income, expenditure, debt and assets in the adopted 2021/31 Long Term Plan in dollar terms
- Added the calculated annual movement from the 2021/31 long term to the previous year's closing balance.

Given observed increases in expenditure in long term plans across the sector, our approach is likely to have understated debt and income projections for those councils that have delayed adoption of their Long Term Plans.

This difference in data baselines will need to be resolved for the development of any financial modelling that may be included in the next phases of this project.

We have presented financial information out to 2034 for Councils that have been able to provide 2024 Long Term Plans or financial data. This is included in the individual council summaries.

Appendix Five – Alternate Scenarios

Introduction and approach

In addition to the base case Otago Southland WSE, we have also completed modelling for two additional scenarios. These scenarios were agreed by the LWDW working group and chief executives, and include:

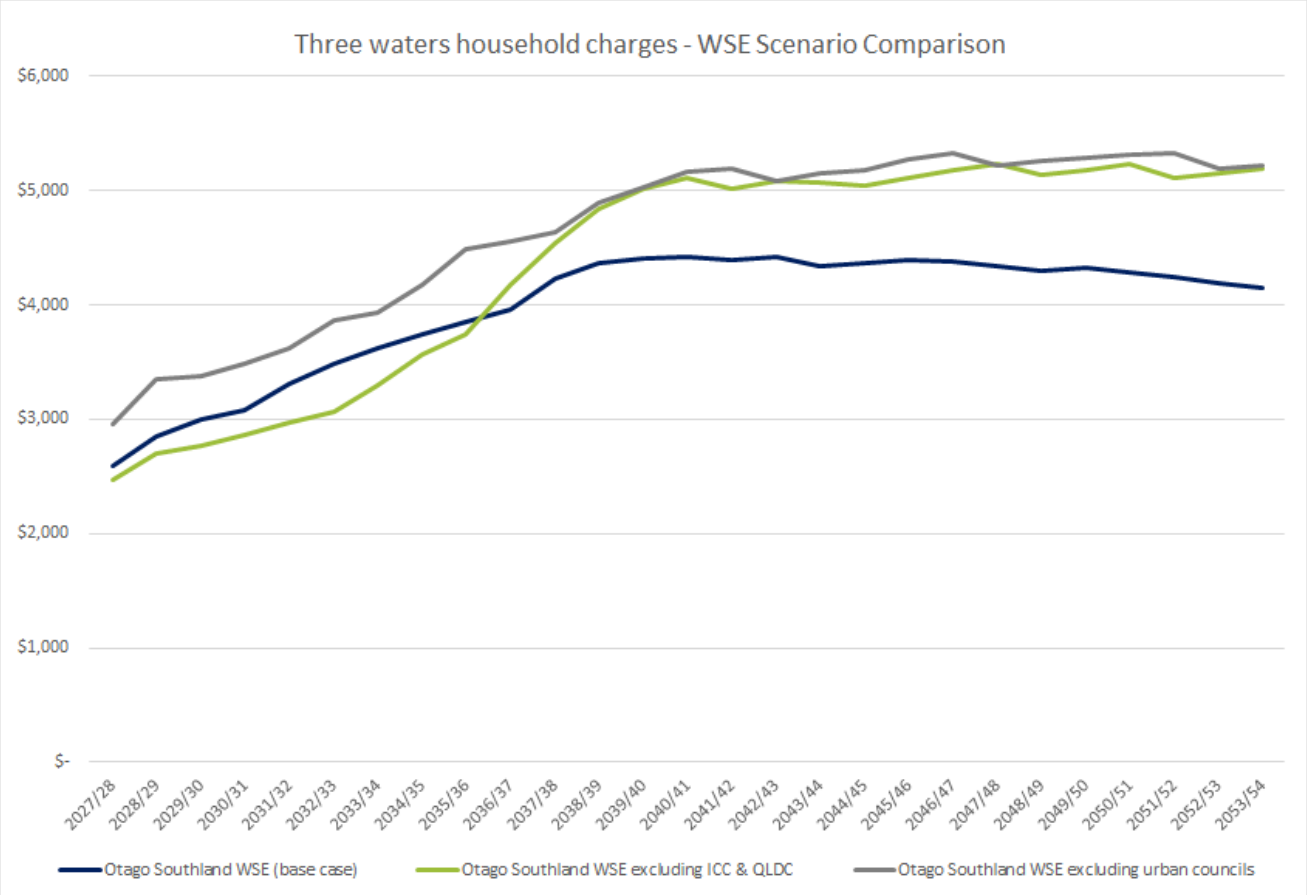
- **Otago Southland excluding urban councils,** this model covers the establishment of a WSE with the following councils:
  - Central Otago District Council
  - Clutha District Council
  - Gore District Council
  - Southland District Council
  - Waitaki District Council
- **Otago Southland excluding ICC and QLDC** this model covers the establishment of a WSE with the following councils:
  - Central Otago District Council
  - Clutha District Council
  - Dunedin City Council
  - Gore District Council
  - Southland District Council
  - Waitaki District Council

Modelling relies on the same underlying assumptions as provided for in the base case, with the following exceptions:

- Corporate overheads for Waitaki District Council have been included in the cost base for both entity models. Overheads allocated to three waters in Waitaki's base information are significant and exclusion of these costs in the smaller entity models is material to the results. If these are purely corporate overheads, then inclusion in these scenarios may overstate the entity costs, however these costs have been included to adopt a conservative approach.
- Total available efficiencies for the **Otago Southland excluding urban councils** have been scaled back to reflect the lower population density of this entity and the impact of that on being able to achieve operational efficiencies.
- Establishment and ongoing costs of the entities have been scaled to reflect the reduced size of the entities. The basis for determining these costs is consistent with the assumptions outlined in Appendix One.

Overall results

The modelling of additional scenarios shows that a WSE remains an attractive option for councils in Otago and Southland even without Invercargill, Dunedin or Queenstown. In both of our alternative scenarios, most water consumers in all the areas that take part in the entity are likely to have lower household three waters charges by 2034.



While a combined Otago Southland entity may appear to have a lower overall price path, benefits are likely to exist under all arrangements.

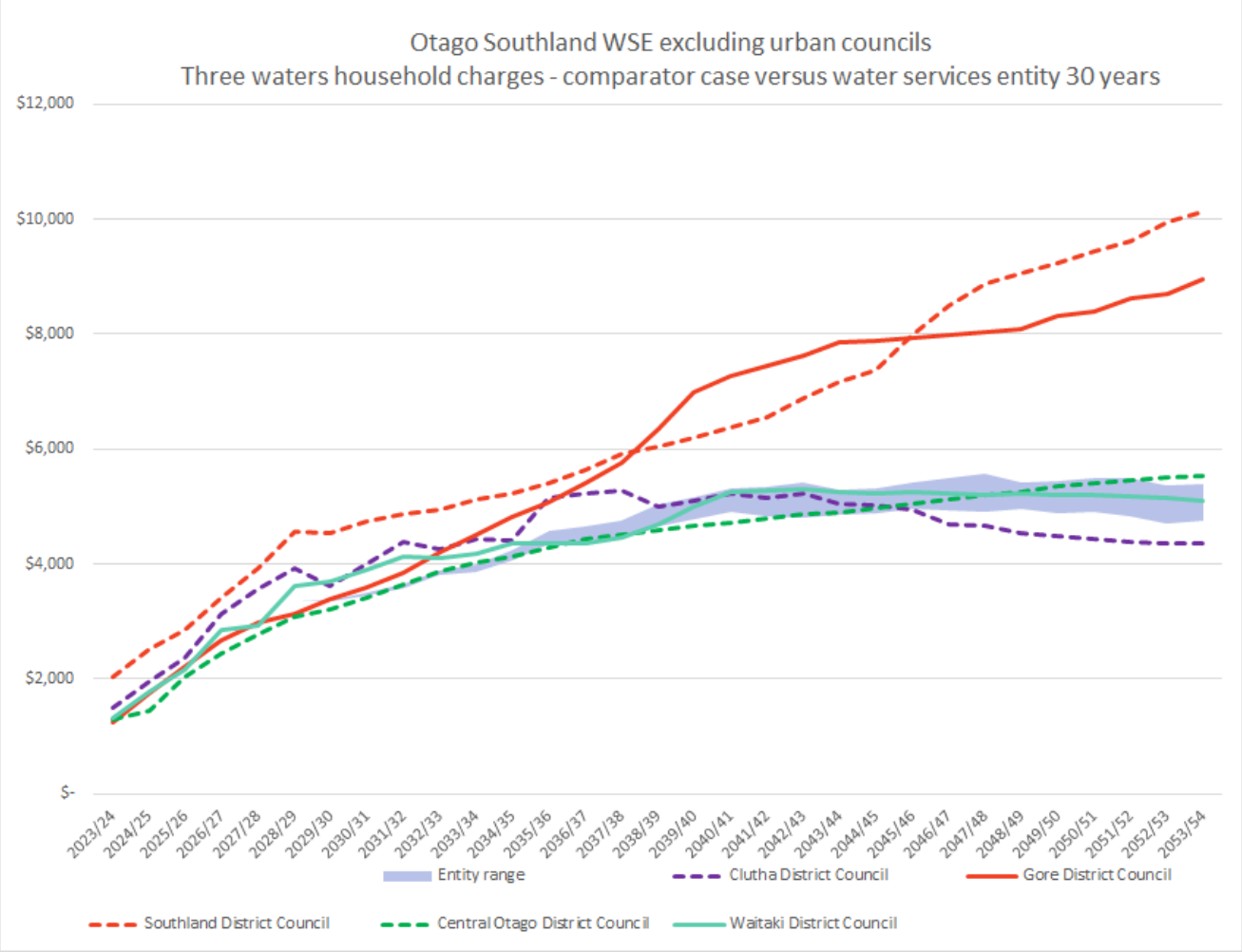
Importantly, the results presented here are the results of *financial modelling only.* An Otago Southland WSE that excludes urban areas will still be comparatively small at a national level. With total revenue of $128 million in 2027/28, such an entity would be a similar size to Dunedin alone, but would be spread over a significantly larger geographic area. In order to be effective, such an entity would need to operate differently, reflecting the different demographics of its customer base.

Otago Southland WSE excluding urban councils

Average household charges

The chart below presents (nominal) average household charges for the base comparator case for each council against the average regional charge for an Otago Southland WSE, excluding the urban councils of Dunedin, Invercargill, and Queenstown.

The range of charges for the entity is represented by the shaded area behind the chart. The range represents uncertainty regarding costs and benefits of an Otago Southland WSE excluding urban councils, and includes an upper range which incorporates double the costs with half the benefits, and a lower range which represents a 50% uplift in available efficiencies (from 8% on capital expenditure and 9% on operating expenditure to 15% on capital expenditure and 16% on operating expenditure).



The charts shows all of the population of the participating council areas having lower household three waters charges over the short term. Over a 30 year period Central Otago, Clutha and Waitaki may have three waters charges that are within, or below, the expected price range of a WSE.

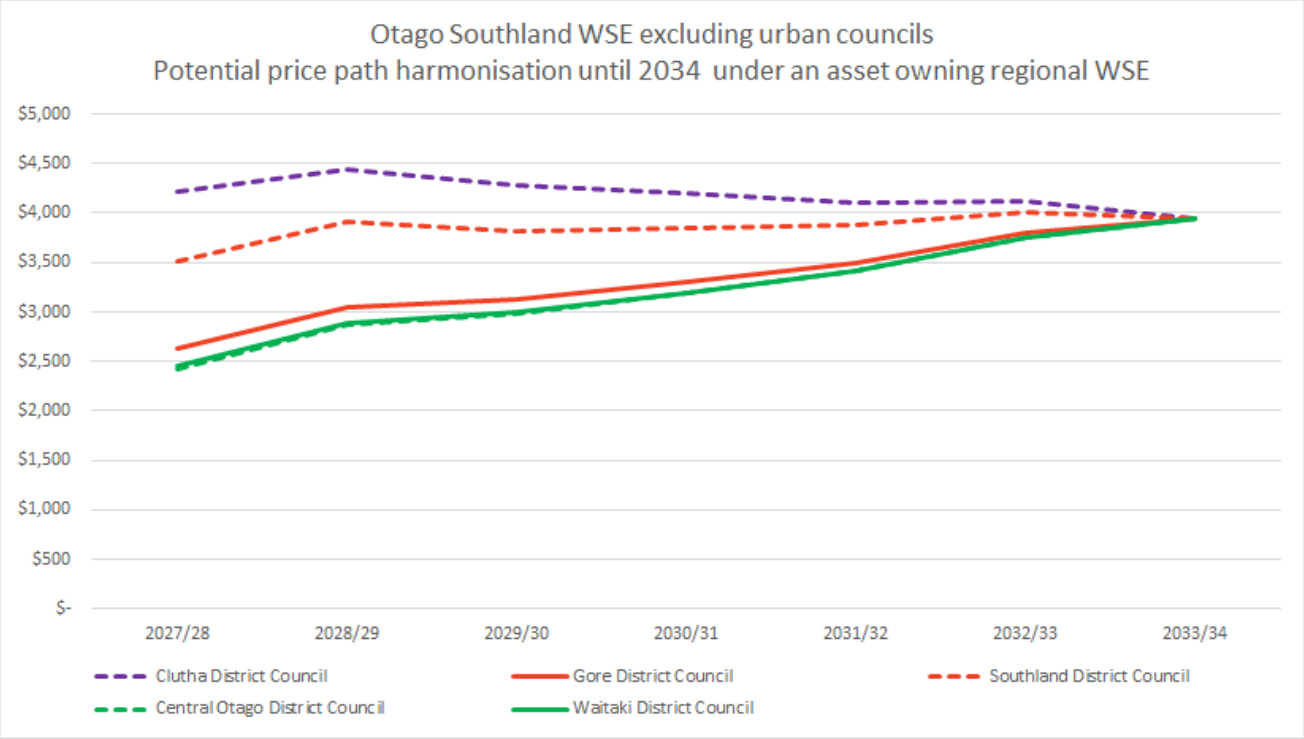
While these forecasts have been prepared based on council infrastructure strategies, we would caution that financial estimates over this extended time period are highly uncertain.

Establishment of an entity under such circumstances would not necessarily mean that the urban councils would need to be excluded indefinitely. We would anticipate any such WSE being designed in such a way as to allow other councils to join at a later date.

Alternatively, such an entity could also provide some shared services to the urban councils, providing the entity with additional revenue and scale, although its smaller scale may mean this is not an attractive proposition.

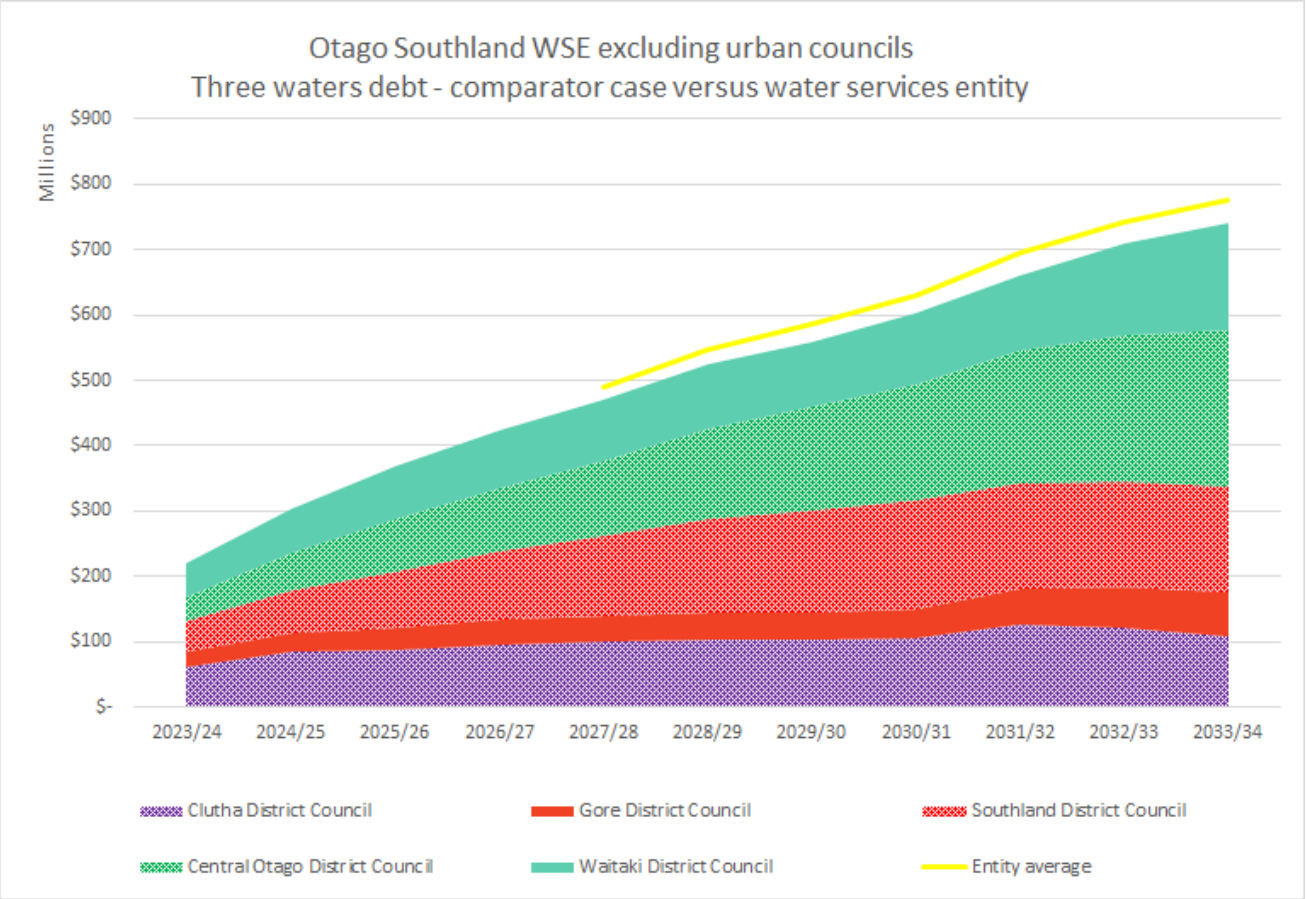
While the Otago Southland WSE excluding urban councils price path is presented as an average charge across the combined regions, we note that this price path could instead be harmonised over time (or not at all).

A potential path towards harmonisation of water charges across the participating councils is presented below. The full details of a price path would need to be agreed upon if an Otago Southland WSE excluding urban councils were to be established.



Debt

The chart below shows the total Otago Southland WSE excluding urban councils debt compared to the combined three waters debt of the participating councils. While borrowing under the entity remains higher than the combined councils, it is less pronounced than in the other modelled WSE scenarios. This is due to the WSE's ability to leverage its debt more effectively than the individual councils and the absence of Queenstown and Dunedin's large capital works programmes.

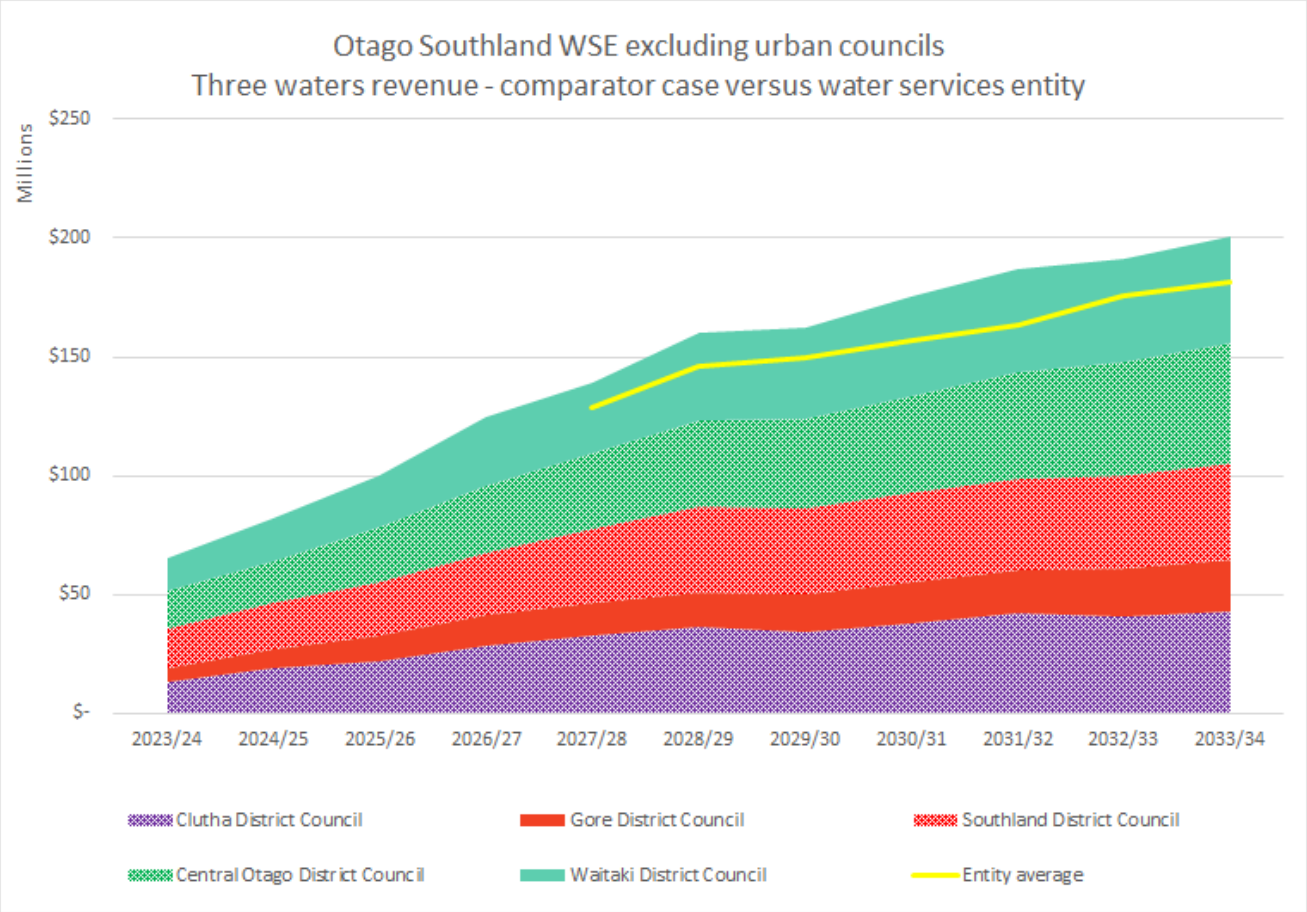


Revenue

The chart below shows the total revenue for an Otago Southland WSE excluding urban councils compared to the combined three waters revenue of the participating councils.

The WSE is able to leverage its balance sheet to a greater extent than individual councils. Subsequently, it can reduce its overall revenue required to support that debt, reducing consumer charges compared to individual councils.

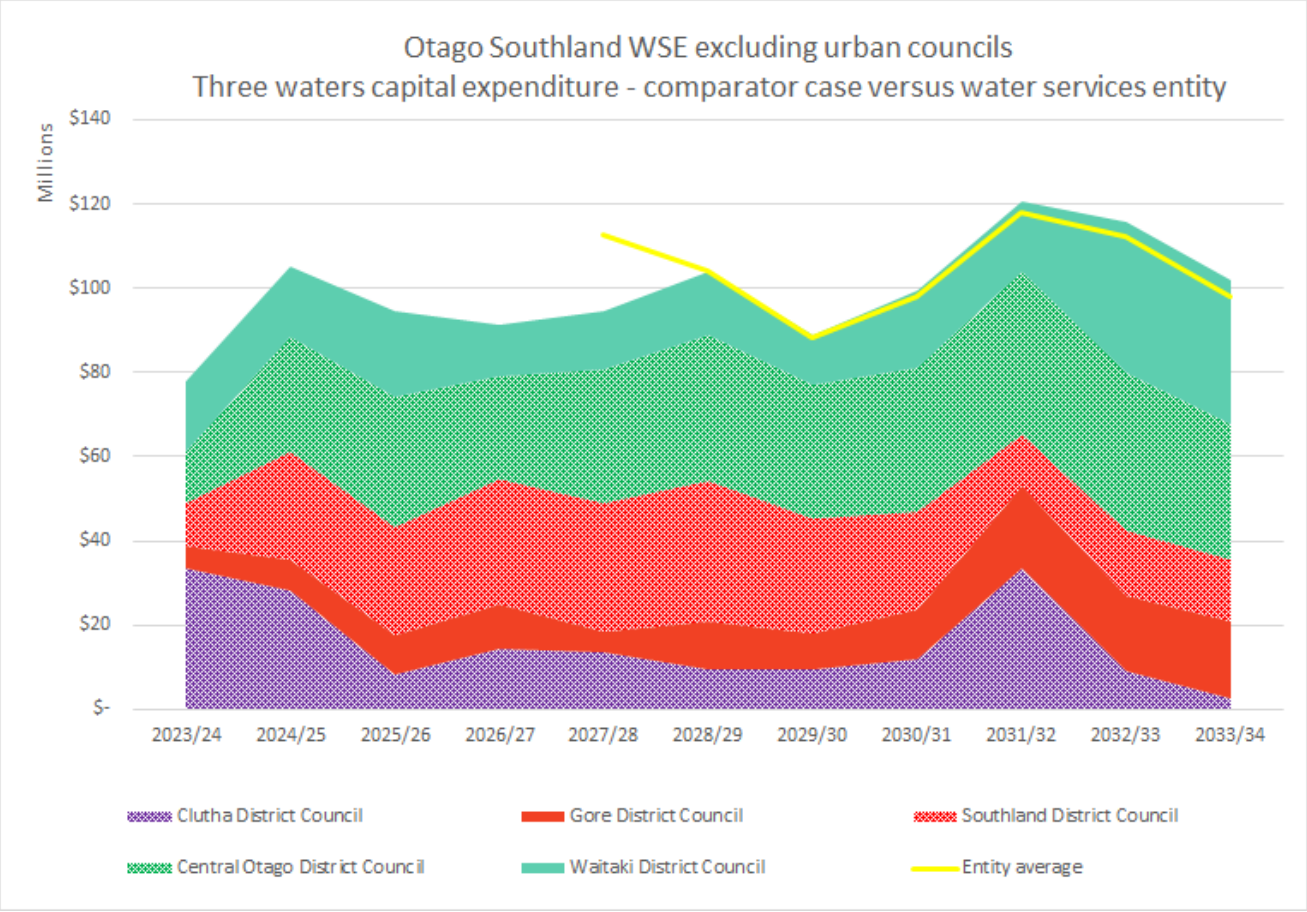
Relative to other WSE scenarios, the share of revenue attributable to individual councils is much more evenly distributed, as the larger entities of Dunedin and Queenstown are excluded from the results below.



Capital expenditure

The chart below shows the total capital expenditure for the Otago Southland WSE excluding urban councils compared to the combined three waters debt of the participating councils.

The WSE has higher capital expenditure levels than the combined councils in its first year, reflecting the need to incur significant establishment costs[7]. Over time, the WSE can reduce capital expenditure compared to the combined councils as it begins to achieve organisational efficiencies through improved asset management practices and coordinated procurement to deliver the same programme of work. These efficiencies are directly reflected in the WSE's borrowing profile.

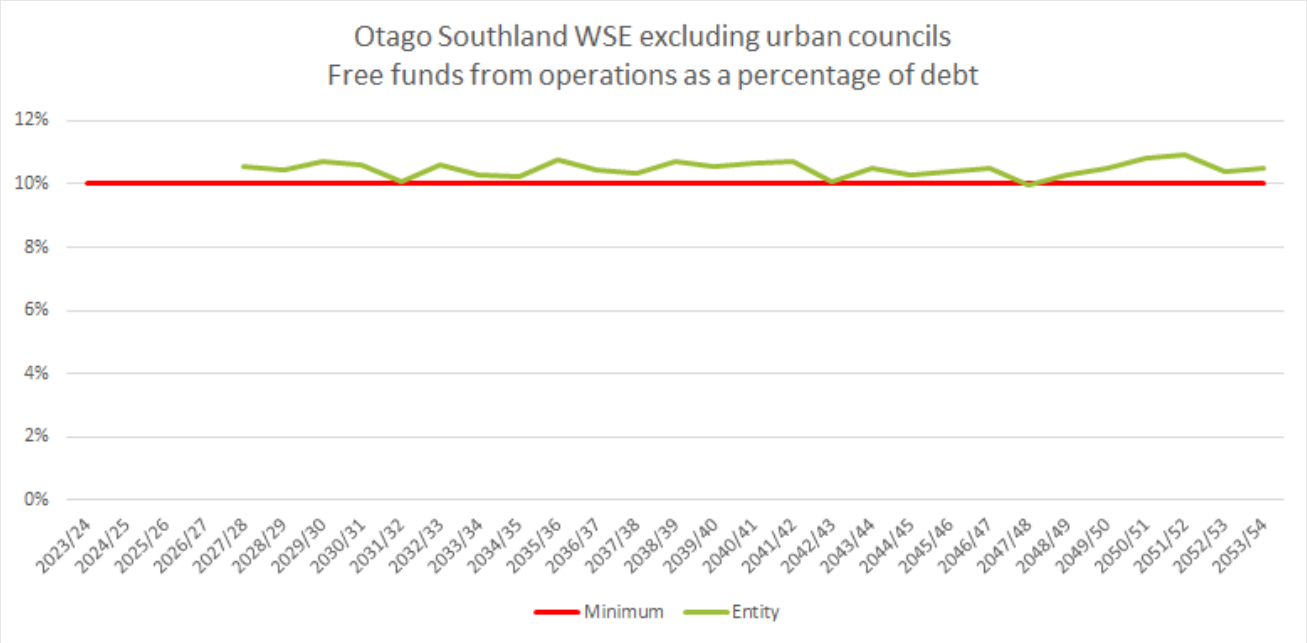


[7] Refer to Appendix One for the modelling assumptions used

30 year borrowing profile

Our modelling assumes that the Otago Southland WSE excluding urban councils will maintain an FFO to debt ratio of 10% over the long term. We note that as the economic regulation regime and the WSE matures, the entity may become even more highly leveraged over time, should it so desire.

The FFO ratio adopted as a benchmark in our reporting is conservative, and we understand that it is likely that LGFA would provide flexibility in lending covenants in the case of an emergency.

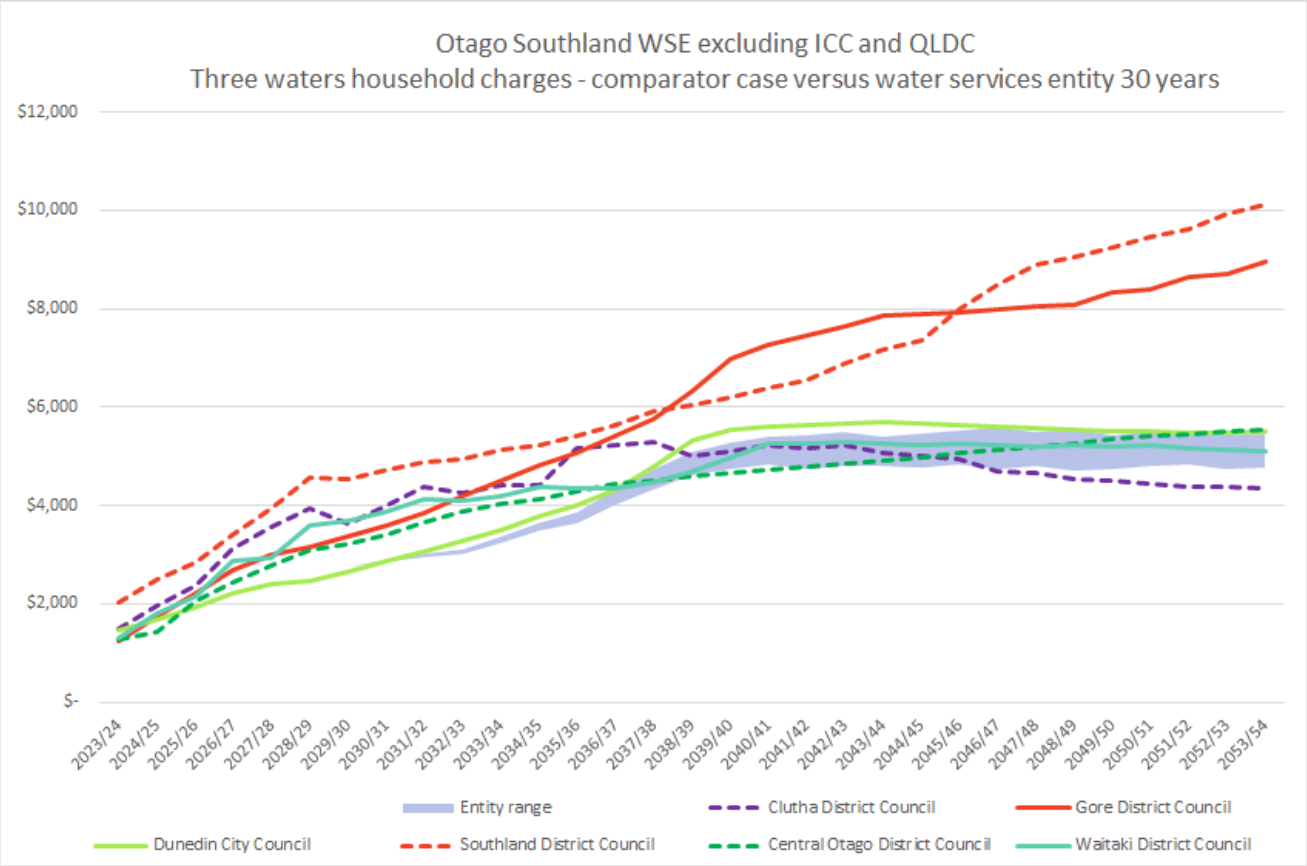


Otago Southland WSE excluding ICC and QLDC

Average household charges

The chart below presents (nominal) average household charges for the base comparator case for each council against the average regional charge for an Otago Southland WSE excluding ICC and QLDC.

The range of charges for the entity is represented by the shaded area behind the chart. The range represents uncertainty regarding costs and benefits of an Otago Southland WSE that excludes ICC and QLDC, and includes an upper range which incorporates double the costs with half the benefits, and a lower range which represents a 50% uplift in available efficiencies (from 13% on capital expenditure and 14% on operating expenditure to 20% on capital expenditure and 21% on operating expenditure).



The charts shows all of the population of the participating council areas having lower household three waters charges over the short term. Over a longer time frame, modelling indicates that household charges for Clutha, Central Otago, Dunedin and Waitaki all fall within, or below, the potential price range for a WSE.

We would caution that while 30 year projections have been developed based on capital programmes contained within each council's infrastructure strategy, cost estimation over this time horizon is highly uncertain.

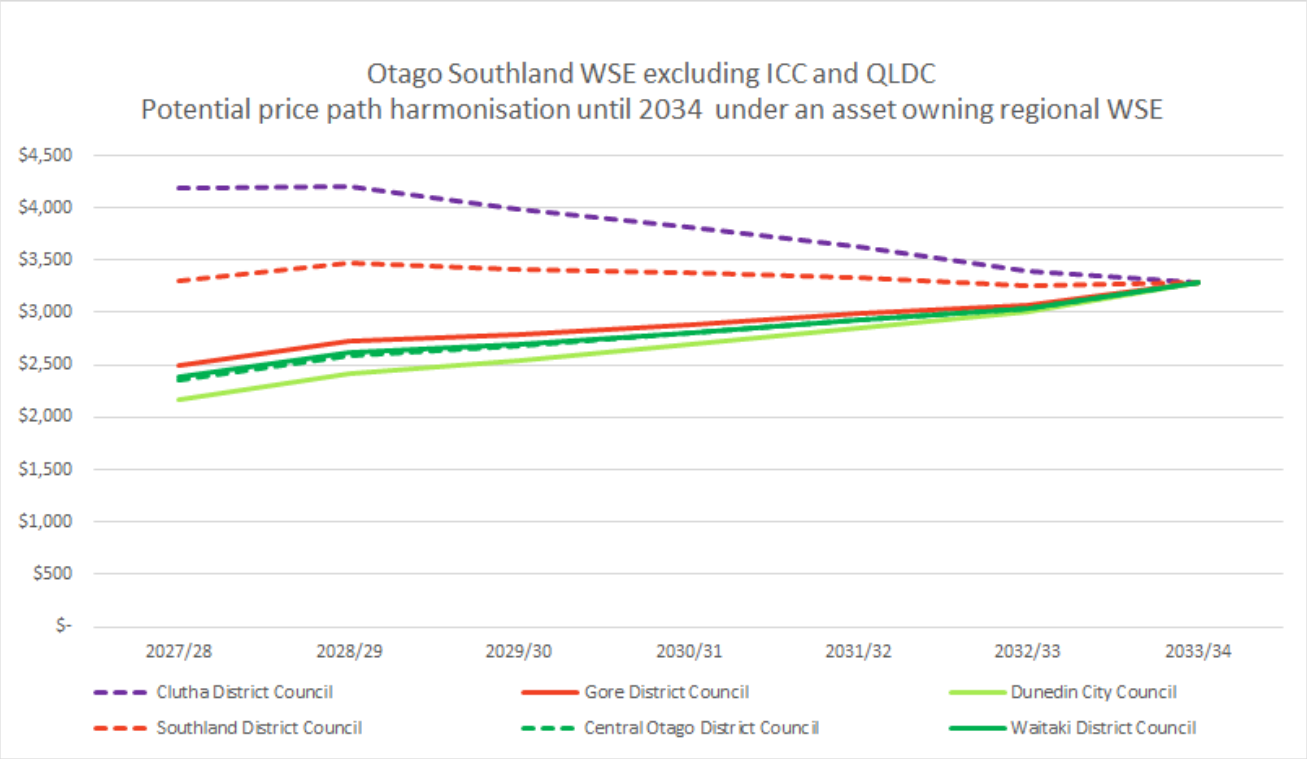
It is likely that an Otago Southland WSE would still be beneficial for water consumers if Invercargill and Queenstown did not take part.

Establishment of an entity under such circumstances would not necessarily mean that Invercargill and Queenstown would need to be excluded indefinitely. We would anticipate any such WSE being designed in such a way as to allow other councils to join at a later date.

Alternatively, such an entity could also provide some shared services to Queenstown and Invercargill, this would provide the entity with additional revenue and scale.

While the Otago Southland WSE price path is presented as an average charge across the combined regions, we note that this price path could instead be harmonised over time (or not at all).

A potential path towards harmonisation of water charges across the participating councils is presented below. The full details of a price path would need to be agreed if a WSE were to be established.

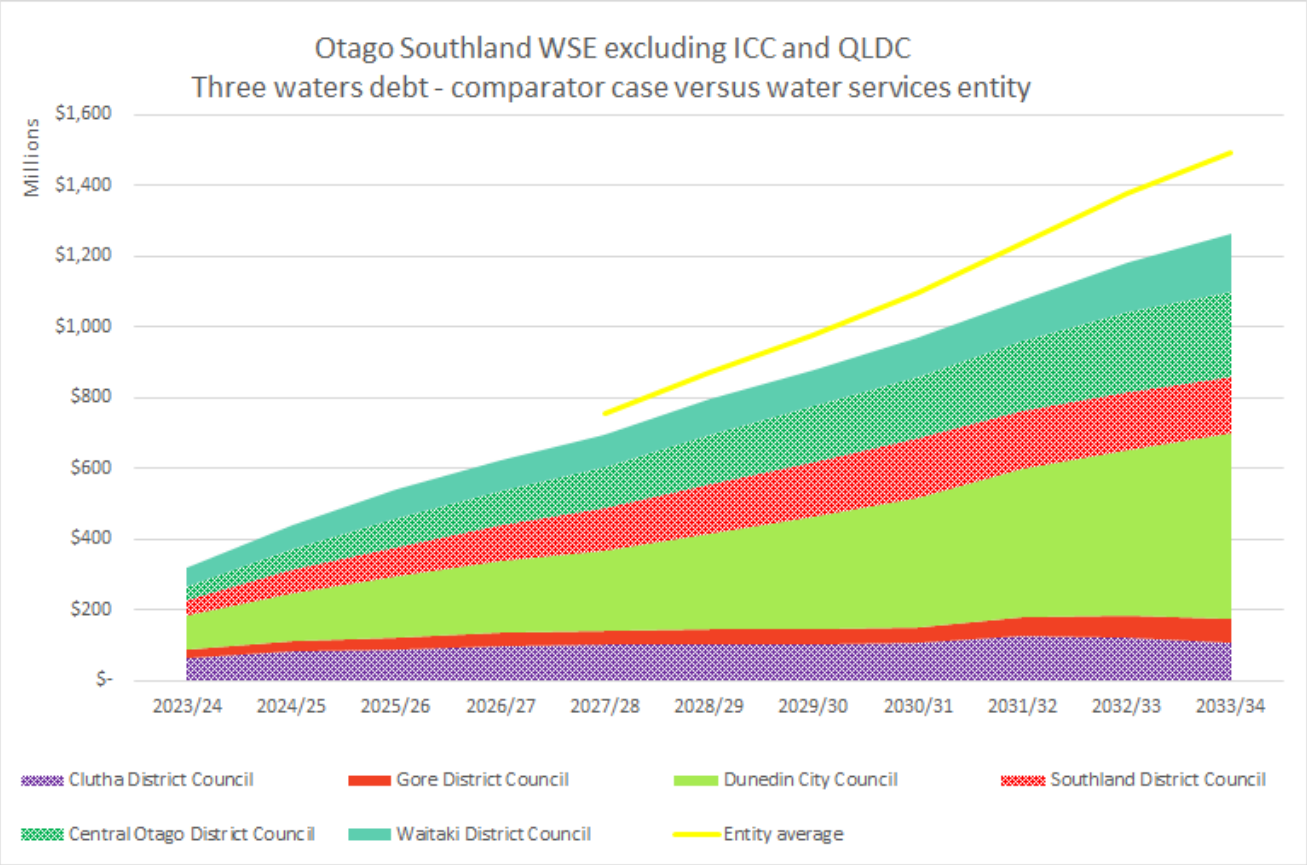


Debt

The chart below shows total Otago Southland WSE debt compared to the combined three waters debt of the participating councils.

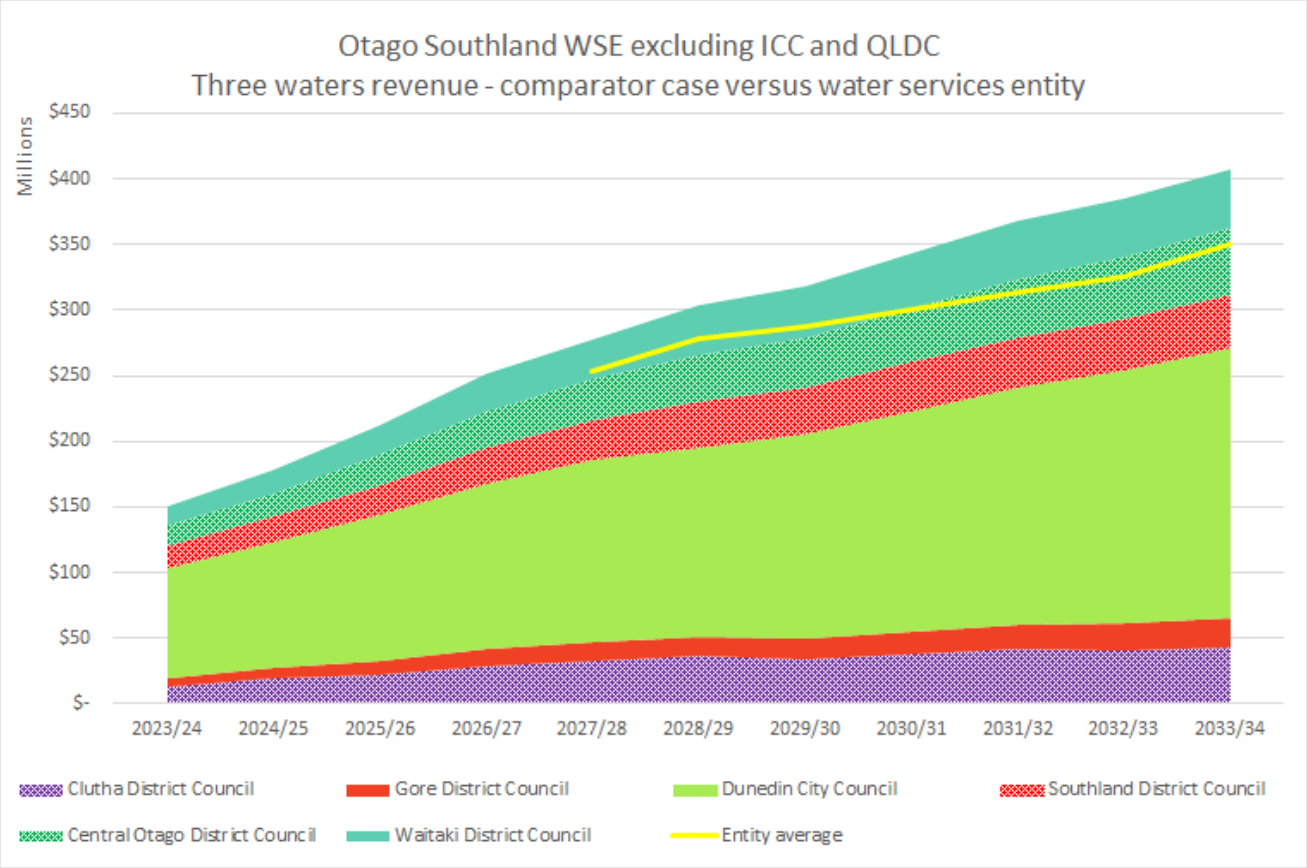
The chart is consistent with the Otago Southland WSE in that it utilises higher leveraging than the combined councils. This means that the entity does not need to generate as much additional revenue to support its borrowing requirements.

Dunedin contributes the most debt to the combined WSE.



Revenue

The chart below shows total revenue for an Otago Southland WSE compared to the combined three waters revenue of the participating councils.

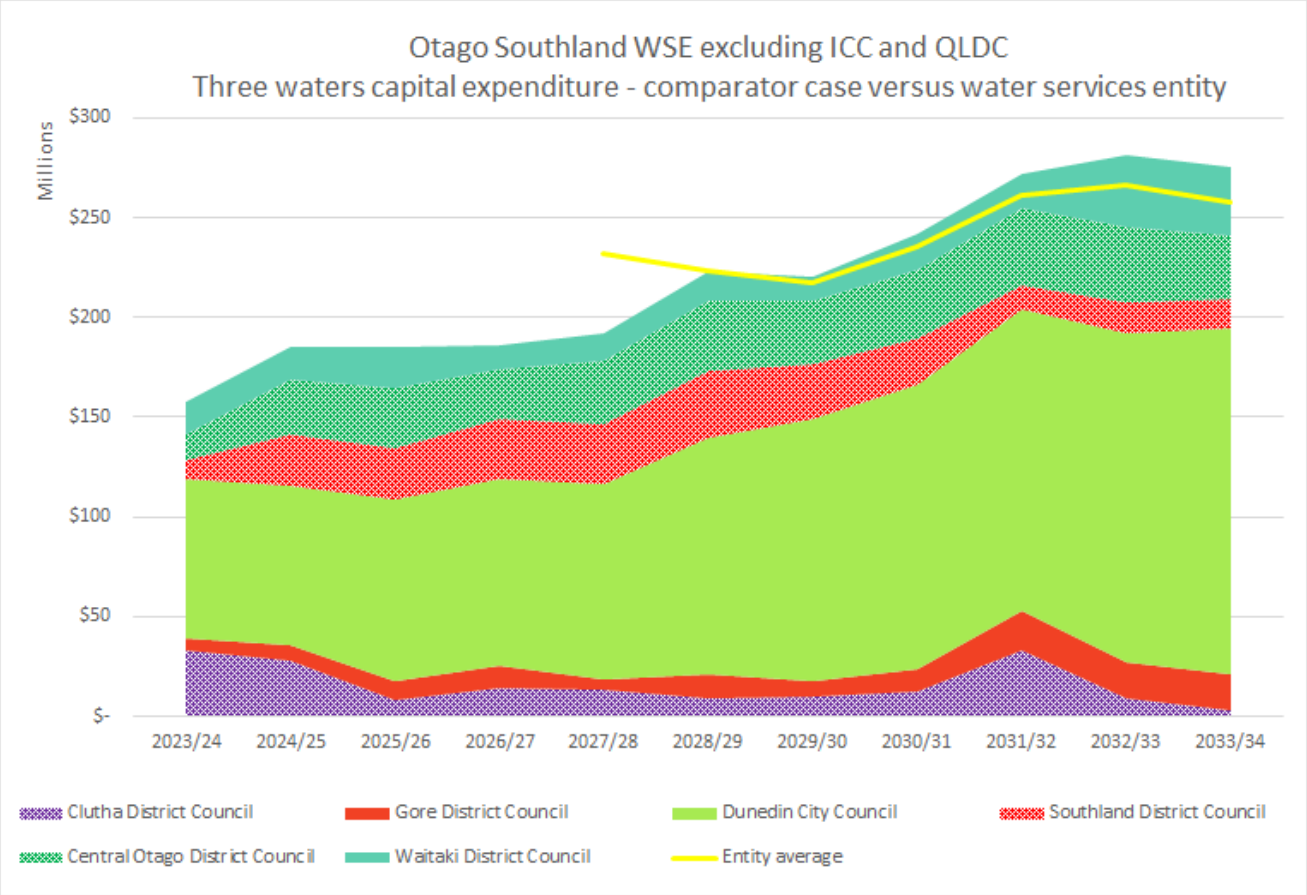


As with the Otago Southland WSE, this WSE is able to leverage its balance sheet to a greater extent than individual councils. This means it is able to reduce its overall revenue requirements to support that debt, reducing charges to consumers compared to individual councils.

Dunedin contributes more than half of the total revenue of the combined councils in this scenario, however the significant reduction in revenue requirements would be shared across all councils proportionally.

Capital expenditure

The chart below shows total capital expenditure for an Otago Southland WSE that excludes Invercargill and Queenstown compared to the combined three waters debt of the participating councils.



As with the Otago Southland WSE presented in the main report, the WSE has higher capital expenditure levels than the combined councils in its first year, reflecting the need to incur significant establishment costs[8].

Dunedin contributes more than half the total planned capital works of the combined councils.

[8] Refer to Appendix One for the modelling assumptions used

30 year borrowing profile

Our modelling assumes that the WSE will maintain an FFO to debt ratio of 10% over the long term. We note that as the economic regulation regime and the WSE mature it is possible that the entity may be able to become even more highly leveraged over time, should it so desire.

The FFO ratio adopted as a benchmark in our reporting is conservative, and we understand that it is likely that LGFA would provide flexibility in lending covenants in the case of an emergency.