

Infrastructure Strategy: 2021 - 2051

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1. Introduction

Infrastructure provides a foundation for building strong and resilient communities. This Strategy sets out how the Invercargill City Council's existing infrastructure base for roading, water supply, sewerage and stormwater, will be continued into the near future. The Local Government Act requires that the Council include Roding and 3 Waters, including flood protection, in its Infrastructure Strategy. Building Assets, and Parks and Recreation were previously included in the Infrastructure Strategy but have been removed from this strategy now. Building Assets and Parks and Recreation still adhere to the principles of the Infrastructure Strategy. Solid waste has been previously included within this Infrastructure Strategy, however is more aligned to an activity management plan approach and therefore not included within this strategy.

Invercargill City Council is required under legislation to plan for the next thirty years and identify what issues relating to infrastructure may be experienced over this timeframe, how Council intends to manage these issues, and what implications may arise. It will further outline how Council will renew or replace their infrastructure assets and respond to varying levels of service for these assets.

This document is supplied under Section 101B of the Local Government Act 2002.

The Strategy identifies how Council will meet their long-term renewals for significant assets, adapting to the changing environment and demographic trends while embracing growth projects aligned with Council's vision.

Invercargill City Council provides residents with services that are essential to the community. The Long-term Plan (LTP) sets out the services, the standard to which they are provided and what they will cost. Some of these services are provided by using assets that form part of the City's infrastructure.

The Infrastructure Strategy is the document that summarises the way in which Invercargill City Council will adapt its infrastructure to meet the challenges ahead.

2. Infrastructure Strategy Overview

2.1 WHO WE ARE

Invercargill City is a relatively small and compact City extending from Makarewa in the north to Bluff in the south, Kennington in the east and Oreti Beach in the west. The Invercargill City District encompasses an area of 49,142 hectares. Generally we cover a land area 33.8 km by 20.1 km. Landscape features of importance to the community include Bluff Hill (Motupohue) and four major waterways which thread through the City (Makarewa, Waihopai, Otepuni, and Kingswell rivers). These, along with the Oreti River all flow into the New River Estuary. The urban areas of Invercargill and Bluff contain extensive areas of open space as well as distinct heritage buildings.

Invercargill has many extensive parks and recreational areas that are both close and accessible to residents. Queens Park is a centrally located, nationally recognised premier park offering wide and varied recreational use. Sandy Point area is a large environment and recreational area and is close to the city residents.

Road networks are generally formed on a grid layout and with relatively flat terrain, which makes mobility and accessibility easy for all modes of transport. The roading network has plenty of capacity. This ensures that travel reliability is a given for all road users.

The pipe networks provide potable water supply, wastewater (sewerage) reticulation and stormwater reticulation. The piped networks are compact and generally contained within road reserve and generally not located in residents private property where access is more difficult. They are well structured and historically well sized to provide for the City's requirements with only short travel distances to and from treatment facilities, with the exception of drinking water. Water is sourced and treated at Branxholme to the north of the City and piped 16.5km to reservoirs within the urban areas of Invercargill and Bluff



This map outlines the territorial boundaries of the Invercargill City Council.

2.2 COUNCIL'S VISION AND DIRECTION

Council's vision for Invercargill is "Our City with Heart – He Ngākau Aroha." Council must provide sound management of its infrastructure to realise this vision.

Challenges faced by Council

- Meeting our long-term renewal obligations for infrastructure
- Ensuring Council decisions are financially prudent and recognise the current and future interests of the community
- Responding to the changing environment (both natural and technological) and retaining Invercargill's character including its built environment
- Recognising the City's changing demographic profile, and its ability and willingness to pay for the services required
- Encouraging growth projects whilst ensuring financial and operational sustainability for future generations
- Climate change and the impacts of this upon our infrastructure now and future demands
- Central Government water reform and the uncertainty of the impact of this
- Ensuring the CBD revitalisation achieves its goals

What is our Strategy to achieve the vision and manage the challenges?

- Maintain our current asset base, while responding to the challenges in a strategic manner
- Focus on critical aging assets and allow non-critical assets to experience limited failure before renewal
- Avoid expanding existing infrastructure networks (at our own cost), except to improve levels of service to meet consent and legislative requirements, and utilise current network capacity to meet forecast growth needs
- Focus on sound evidence-based activity investment decisions, rather than just the management of assets
- Renew assets at the rate of asset consumption
- Design pipe network renewals to accommodate impacts of climate change
- Should unplanned failures occur, use a mix of Council's financial "good health", accumulated reserves and / or insurances (where appropriate) to manage risks
- Ensure growth is focused on social, financial and operational sustainability and aligned to Council's vision
- Better understand and meet our community's needs, through consultation and delivery of agreed levels of service
- When arranging contracts or significant activities, consider how investment decisions may impact a viable competitive supplier market in the Region

The tools we are going to use

- Strengthen our asset management capabilities and practices, in order to improve cost-efficiency, better manage our risks, and make better informed decisions about infrastructure
- Improve business decisions when investing by using an evidence based business case approach
- Engage our customers more often to better understand their needs and desires and how these may change over time

Our Assumptions at a glance

Assumption	Level of Uncertainty
Economy	Medium
Population Growth	Medium
Climate Change	High
Consents	Medium
Natural Disaster	Medium
Council services and structure	Medium
Asset life and Asset Revaluation	Medium
Inflation	Medium
Interest Rates - Borrowing	High
External Funding	High

Where will we be in 30 years?

- Infrastructure in Invercargill will continue to meet the needs of the community.
- The CBD will be a vibrant hub and have Community Facilities which support it.
- Assets will have had sufficient maintenance and renewal, and will operate by meeting the agreed community levels of service. Council will have good knowledge on how to sustain and support the assets over their lives.

Core Infrastructure

We own and manage \$1.47b (replacement value as at June 2019) of core public infrastructure.



Roading \$514m

Urban sealed roads	295 km
Rural sealed roads	179 km
Rural unsealed roads	123 km
Kerb and channel	555 km
Bridges	55
Footpaths	500 km
Street lights	7000
Carparks	6



Stormwater \$367m

Pipe network	416 km
Pump stations	9
Open drains	47 km
Stopbanks	3 km



Sewerage \$311m

Pipe network	368 km
Pump stations	32
Treatment plants	3



Water \$280m

Pipe network	419 km
Pump stations	6
Branxholme water treatment plant Reservoirs	7

This information has been developed from the valuations undertaken for 30 June 2019, for more detail please see individual Asset Management Plans.

2.3 WHAT WE DELIVER

Roading – The Roding activity provides a safe, convenient and efficient transport system for all transport modes within the city including pavements, streetlights, traffic signs and signals, footpaths, drainage, kerbing, bridges, culverts, street furniture, parking facilities, vehicle access crossings and cycle tracks.

Water Supply – The Water Supply activity owns and maintains assets, including treatment stations, reservoirs, pump stations plus a pipe network to supply potable water to residential, industrial and commercial properties to protect public health, water for firefighting, support city growth and contribute to the general well-being of the community.

Sewerage – The Sewerage activity owns and maintains assets which include pipes, pump stations and treatment plants for the removal of sewage from residential, industrial and commercial properties in urban areas of Invercargill, Bluff, parts of Otatara and Omaui. Treated effluent is discharged to Foveaux Strait at Bluff, to the New River Estuary at Invercargill, and to land at Omaui.

Stormwater – The Stormwater activity owns and maintains assets which include pipes and pump stations to provide for the removal of stormwater from residential, industrial and commercial properties to reduce the risk of property damage by flooding. Stormwater is discharged to natural waterways including the Waikiwi Stream, Waihopai River, Kingswell Creek, Clifton Channel, Otepunu Stream, the New River Estuary and Bluff Harbour.

Tidal Protection Banks The City is protected by a series of flood protection schemes on the main waterways through the City which includes walls, banks and detention dams. The majority of these schemes are owned and managed by Environment Southland, with Invercargill City Council managing tide protection banks at the Waihopai Arm at Stead Street and Cobbe Road. These banks protect against the sea tidal movements and storm surge rather than river flooding.

3. Background

In the coming years, Invercargill City will experience greater pressures on infrastructure renewals as the existing networks age towards their end of life. During the periods of the 1920s, 1960s and 1970s, large areas of our city and associated infrastructure were developed over short periods reflecting the growth of the City. These assets will require renewal as they reach end of life and the strategies deployed to manage this work will reflect in the cost to the Community.

Council has built good quality asset data over the last 30 years and this is included in its asset management plans. This has enabled Council to establish budgets that work to ascertain the level of expenditure necessary to ensure a reliable and consistent level of service in our infrastructure areas. Council has maintained its assets well and believes that there is not a large deferred risk on assets from the past but recognise that renewals are essential for service continuity as assets have a finite life.

Roading, Water Supply, Stormwater and Sewerage activities account for 21% of Council's operating expenditure and 58% of Council's capital renewal expenditure.

Council has renewal programmes in place; however these programmes are expected to increase. The increase is to enable Council to meet the end of life needs of the assets which were installed in earlier growth periods. During these times Central Government supported and assisted development and growth, however under current funding structures the renewals are now the financial responsibility of Council (apart from the New Zealand Transport Agency Funding Assistance where applicable). These development peaks need careful and structured renewal strategies to renew assets at the right time to meet well understood future demand. The Water Supply AMP has highlighted an area of the pipe network where asbestos cement (AC) pipes may have to be renewed before their expected end of life, but have served more than 50 years currently. These pipe materials are widely used across New Zealand and most Councils will be experiencing similar responses as pipes become older and failure more likely.

For some of Council's infrastructure activities a decision has been made to reduce the rate of renewal for some assets. This 'sweating of the asset' is now more widely accepted as getting value for money, but has the potential for more risk if the condition of the "sweated" assets is not well known. Sweating of an asset will enable Council to manage change and extend the predicted life cycle of the asset. It also allows Council to use better data and optimisation approaches to predict a just-in-time renewal of the asset. The use of criticality, resilience and risk to balance decisions with experienced practitioners mitigates the level of risk the community is exposed to.

For example, Council is proposing to under fund the renewal of the footpath programme as it can be done with low risk and has high visibility for future monitoring. In doing so, Council is hoping to extend the overall life of all footpath assets beyond what has been earlier planned for and signalled in its Rooding Asset Management Plan. The opposite approach has been taken with critically important parts of the water reticulation network where replacement is programmed to coincide with scheduled end of life rather than waiting for failure.

Council needs to ensure that it is delivering the right level of infrastructure at a sustainable cost the community can afford, both now and into the future. Investment needs to be managed through business cases which support current evidence and future demands including possible shifts in demand.

To do this Council has looked closely at the renewals and maintenance of existing infrastructure as well as any planned new infrastructure projects; details of these options are expanded on in the Asset Management Plans. This strategy sets out what Council believes to be the most likely scenario for infrastructure needs in the future and assesses the options available to Council and the Community for addressing these needs.

4. Key Assumptions

Having suitable and relevant assumptions is a solid foundation for the Strategy. The following assumptions and potential impacts have been considered while developing and preparing Asset Management Plans and are seen to be the best and most likely influencing factors to consider and where appropriate develop into the strategy and Asset Management Plans. Assumptions are taken from the Long-term Plan Background and Assumptions 2021-31 document and only the assumptions that require an infrastructure response are included here.

Population				
	Assumption	Level of certainty	Impact of uncertainty	Council response
Significant Assumption	<p>Population growth</p> <p>At 30 June 2020, the estimated population of Invercargill was approximately 57,100¹².</p> <p>The population growth for Invercargill is around 1%³. This rate has been observed during eight of approximately the past twelve years, making it a reasonable assumption for the current plan.</p> <p>Based on a 1% growth assumption, the expected population for 2031 is estimated to be around 62,810.</p> <p>Covid-19 might significantly change the previous growth forecasts for Council. Population growth is</p>	Medium	<p>Council is not planning for a major change in population during the life of the current plan.</p> <p>There are multiple uncertainties related to population growth in Invercargill:</p> <ul style="list-style-type: none"> • While International students currently in New Zealand are able to return to SIT for study, the number of EFTS⁴ to date for 2021 is only 337. This is compared to 775 in 2020. • Riding out recession impacts of Covid-19 Alert Levels 4 and 3 • Proposed Tiwai Aluminium Smelter closure • Mid-range population forecast but noting underlying increase in population that has already 	<p>The critical infrastructure and resources that Council provides were designed for a city with a population larger than we are now. Council has appropriate infrastructure and resources to service our population without significant financial impact as we have plenty of room to grow.</p> <p>This is in line with the higher forecast of the Southland Regional Development Strategy.</p> <p>Council will continue to monitor change in population growth during the life of the current long term plan to prepare for/respond to any significant changes realised from the multiple uncertainties</p>

¹ [Subnational population estimates \(TA, SA2\), by age and sex, at 30 June 1996-2020 \(2020 boundaries\) \(stats.govt.nz\)](#)

² [Stats NZ Overview of data quality ratings, interim coverage and response rates, and data sources for 2018 census](#)

³ As above.

⁴ EFTS – Equivalent Full Time Student

	expected to be minimal in the short term as a result of Covid-19 limiting the ability of students and migrant workers to travel, along with continued aging of the population.		surpassed StatsNZ estimates	identified.
Significant Assumption	Diversity The population will continue to become more diverse. The Maori population will grow from 17% to 19% ⁵ . The Asian population will grow from 6% to 9% ⁶ .	Medium	Interruptions to travel may affect international migration although it is not expected to effect this assumption significantly. Impact of uncertainty is low.	Council continues to explore new ways of engaging and ensures a balanced sample in customer research to ensure it understands changing needs and expectations.
Significant Assumption	Aging population Those aged 65 and older will form 23% of the population in 2031, which is higher than the current aged population in 2020 ⁷ (estimated at 10,000 of 57,100, or 17.51%) ⁸ .	High	The pattern of aging in the population is a long-term trend which is not expected to be disrupted.	The needs of older people and younger people are different from those in the working age and Council will continue to consider the needs of all users of its services.
Significant Assumption	Households The number of households will increase as the population ages. The size of households will decrease slightly and may vary between 2.35 and 2.25 people over the time of the infrastructure strategy ⁹	Medium	The impact of a potential decline in numbers of students and migrant workers on demand for housing is uncertain.	Council's infrastructure has sufficient capacity to accommodate the potential increase in population and/or demand.

⁵ Growth in line with NZ stats estimate of 2% growth in the Southland region (NZ. Stats, population projections)

⁶ Growth in line with NZ stats estimate of 3% growth in the Southland region (NZ. Stats, population projections)

⁷ NZ Census Area unit forecast

⁸ [Subnational population estimates \(TA, subdivision\), by age and sex, at 30 June 2018-20 \(2020 boundaries\)](#)

⁹ To calculate the projected average occupancy rates we took past and projected population data from Statistics New Zealand and cross referenced this to past and projected number of households. The average occupancy is the total population divided by the total occupied households.

Economy				
	Assumption	Level of certainty	Impact of uncertainty	Council response
Significant Assumption	<p>COVID-19</p> <p>The lockdown and potential future impacts of COVID-19 may negatively impact residents' ability to pay rates. This could lead to a short term cashflow impact and increased rates arrears. Rates arrears could increase further.</p>	Medium	<p>To date there has been little impact on our rates receipts and the response to the new rates postponement and remission policy has led to a number of ratepayers contacting Council to go onto a payment plan for their rates.</p>	<p>Council has adopted an additional policy for postponement and remission of rates. This policy allows ratepayers financially impacted by COVID-19, to delay payment of up to 1 year's rates. Council staff will work with affected ratepayers to set up affordable payment plans.</p>
Significant Assumption	<p>Economy</p> <p>A recessionary period is expected for the first five years of the LTP and longer-term structural changes to the economy beyond this time. This will lead to higher unemployment and lower GDP.¹⁰</p>	Medium	<p>The shape of the recession (u or v) is as yet unknown. The relative impact across regions, based on industries impacted most by COVID-19, as well as potential impacts of proposed Tiwai closure and SIT becoming a subsidiary of Te Pūkenga needs to be better understood by Council in order to reduce this uncertainty. Significant errors in this area could have a significant impact on Councils budgets over the forecast period¹¹.</p>	<p>Council will focus on efficiency savings. Investment will only be made in activities which can be serviced.</p> <p>Council will continue to review its work programme and priorities as the level of uncertainty reduces.</p>
Significant Assumption	<p>Community funding</p> <p>Council can expect to see increased funding applications from groups as a result of Covid-19 and its impact on Community Trust of Southland and Invercargill Licencing Trust's ability to fund.</p>	Medium	<p>The immediate impact of Covid-19 has been seen in the local community, with reduced funding available from major community funders including the Community Trust of Southland and Invercargill Licencing Trust and Foundation.</p>	<p>Council acknowledges the potential community expectation that Council will be positioned to distribute grants to fund community wellbeing related activities.</p>

¹⁰ BERL Local Government Cost Adjustor Forecasts – Three Scenarios Reference No: #6109

¹¹ <https://www.infometrics.co.nz/industry-concentrations-and-the-fall-of-think-big/> ; <https://www.infometrics.co.nz/examining-the-nz-industries-hit-hardest-by-the-covid-19-pandemic/> ; BERL Local Government Cost Adjustor Forecasts – Three Scenarios Reference No: #6109

Significant Assumption	Economic diversification Volatility in the global economy may affect one or more of Invercargill's key export industries. This will drive diversification but will slow growth. There may be a delayed effect through the risk of impacted industries abandoning properties.	Medium	The relative impact needs to be better understood by Council to reduce uncertainty, as significant errors could have a significant impact on Council budgets over the forecast period ¹² . This may directly impact rates and ability of Council to fund projects.	Council will continue to monitor changes in the global markets.
Activity Report Level	Central Business District Following a period of static activity until 2023 when the City Block development is complete, the CBD will become more vibrant and have increased connectivity. Council will work in collaboration with others to enable strategic activities and initiatives to support the success of the CBD.	High	The city centre is at the centre of Council's vision. As with any major investment of this type there is a level of uncertainty as to the impact of the development on future use patterns within the city. If the development does not succeed in drawing people to the city centre it will have an impact on Council strategy.	Council strategic activities and economic development activities delivered through Great South will align to support the success of the city centre projects Streetscape works will be designed to support connectivity to the city centre. Council will need to plan for the structural change this is anticipated to involve. Council has support for heritage buildings through the Regional Heritage Strategy and associated funds to support businesses managing high costs of older buildings.
Significant Assumption	Tourism Tourism numbers will slowly increase, returning to 2019 levels by 2031.	Low	The tourism sector is the hardest hit in the economy and is not expected to fully recover out to 2030. This may have an impact on the Airport and other infrastructure needs that may	Council expects some impact, but tourism is not a major proportion of Invercargill's GDP so the effect is expected to be relatively minor.

¹² <https://www.infometrics.co.nz/industry-concentrations-and-the-fall-of-think-big/> and <https://www.infometrics.co.nz/examining-the-nz-industries-hit-hardest-by-the-covid-19-pandemic/>

			or may not be required in short term as tourist numbers reduce.	
Significant Assumption	International education The numbers of International students studying at the Southern Institute of Technology will slowly increase back to 2019 levels by 2031.	Low	Students are an important part of the economy, creating significant demand. The impact on retail, hospitality and housing could be significant.	Council is working with Great South on economic development.

Social and cultural

	Assumption	Level of certainty	Impact of uncertainty	Council response
Activity Level	Māori culture Māori culture will become more visible in the city.	Medium	Increased awareness of the need to recognise Maori culture and tikanga (methodology), with a particular focus on partnership, participation and protection.	Council will invest more in Maori engagement to ensure strategic projects reflect Maori culture in the city.
Activity Level Significant Assumption	Socio-economic The impact of COVID-19 is yet to be realised, and there may be changes in Invercargill's socio-economic patterns over time. Māori have been disproportionately affected by the economic crisis brought about by the COVID-19 containment measures, and it is expected to continue to play out over the ten year recovery period. ¹³	Medium	With GDP softening the long range economic outlook will hinge largely on the ability for the current and successive governments to provide economic stimulus. This may have an impact on Council activities that rely on users discretionary spend for revenue	Council acknowledges the potential community expectation that Council will be positioned to distribute grants to fund community wellbeing related activities.

Resilience

	Assumption	Level of certainty	Impact of uncertainty	Council response
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¹³ BERL (July 2020). Economic Scenarios to 2030. The post-COVID-19 scene.

Significant Assumption	Community wellbeing The COVID-19 response measures will have long term impacts on the wellbeing of communities, requiring a long term perspective response.	Medium	The situation is evolving and will continue to be monitored.	Council has tasked Great South, the regional development agency, to focus on resilience and economic diversification. A Community Wellbeing Fund has been established.
Asset/ Activity Plan level	Community resilience The amalgamation of Southern Institute of Technology with Te Pūkenga, and the potential loss of zero fees advantage, will have an uncertain long-term effect on Invercargill's population and economy.	Medium	The effects of COVID-19 on immigration will impact student numbers in the short to medium term. The risk of losing the zero fees advantage could have an impact on our growth strategy.	Council funds Great South to promote the region and continues to monitor and plan for the impact.
Asset/ Activity Plan level	Community resilience Tiwai Point Aluminium Smelter will continue to operate until 31 December 2024.	Medium	A transition plan will be developed to prepare for the eventual closure. It is not yet clear where and how the impact will be felt in the community.	Council is working with the Just Transition team and Great South on economic diversification.
Significant Assumption	Natural disaster No natural disaster is expected to impact the City during the life of the plan.	Medium	The impacts of a disaster will be assessed at the time and an appropriate response prepared. Infrastructure renewals are undertaken using resilient design practices.	Council has a focus on resilience. Council continues to support and invest in Emergency Management Southland.

Environment – Climate Change

Climate change impacts will vary across regions in Southland. The following is a summary of impacts taken from the *Southland climate change impact assessment, August 2018* report.

	Assumption	Level of certainty	Impact of uncertainty	Management response
Significant	<p>Mean annual and extreme temperatures (days where temp. exceeds 25°C) are expected to increase with time:</p> <p>By 2040: mean annual temperature increase of 0.5-1°C with 0-10 more hot days per annum.</p> <p>By 2090: mean annual temperature increase of 0.7-3°C, with 5-55 more hot days per annum.</p>	High	<p>Water - Longer period of drought may result in increased demand, whilst flood events create turbidity and increase the cost to treat for consumption.</p> <p>Flood Banks – increased temperature results in more extreme weather events, with a corresponding increase in height and frequency of storm surges.</p>	A planned pathway for the review of these assumptions and the impacts will minimise large impacts upon activities.
Significant	<p>Annual rainfall is expected to increase:</p> <p>By 2040: +0-10%</p> <p>By 2090: +5-20%</p> <p>Increased frequency of high rainfall days, i.e. increase in intensity of rainfall.</p>	High	<p>Roading - increased frequency and intensity of rainfall may require extra drainage works in the road network that may alter long-term maintenance costs</p> <p>Stormwater – increased frequency and intensity of rainfall events resulting in increased demand on the network.</p> <p>Wastewater - Increased frequency and intensity of rainfall events results in infiltration and inflows that increase volumes to be treated.</p>	A planned pathway for the review of these assumptions and the impacts will minimise large impacts upon activities.
Significant	<p>Mean sea level is expected to rise.</p> <p>By 2040: 0.2-0.3 m</p> <p>By 2090: 0.4-0.9 m</p>	High	<p>Errors in modelling will have significant impact on capital works programme required</p> <p>Stormwater – increased tailwater levels require consideration for outfall design.</p> <p>Flood Banks – Renewals need to consider increased sea level during design life.</p> <p>Sewerage – Clifton outfall may need to be pumped long term.</p>	A planned pathway for the review of these assumptions and the impacts will minimise large impacts upon activities.

Council operations				
	Assumption	Level of certainty	Impact of uncertainty	Council response
Significant Assumption	<p>Council services and structure Council is planning for the current structure to deliver the current set of services, with the exception of water and sewerage.</p>	Medium	If amalgamation does occur, costs to the ratepayer will remain the same, although revenue and financing will be done by a different operator.	Council will proactively engage with neighbouring authorities and central government to ensure that the best result is achieved from any amalgamation.
Asset/Activity Level	<p>Water Reform As a result of the Central Government directed Waters Reform, it is assumed there will be a change in water reticulation and sewerage delivery services within the life of the plan. This will result in a structural change for Council in relation to the ownership of assets and associated debt capacity. The services will continue to be delivered, but these will be provided by another party. This will include increased regulatory requirements as required by the new regulatory authority.</p>	High	<p>The services will continue to be delivered but these will be provided by another party.</p> <p>This will be managed in line with Government best practice, and will remain within the Council financial and 10-year assumptions.</p>	<p>Council will assess proposed reform options when Central Government has provided their final recommendations to Local Government entities.</p> <p>Council will proactively engage with neighbouring authorities and central government to ensure that the best result is achieved from any reforms.</p> <p>Council is incorporating management of this potential outcome through planning for management of debt.</p>
Asset/Activity Level Significant Assumption	<p>Legislative changes There will be changes to legislation that have an impact on how Council will provide services. These changes may affect the Council organizational structure but not change the level of service received by the customer/ratepayer.</p>	High	Changes may affect the Council organizational structure but not change the level of service received by the customer/ratepayer.	Management will continue to engage with Government and plan for changes in services in response to policy and regulation changes as these arise.

Asset/Activity Level	Consents Council will continue to carry out legislation-directed ordinary functions while factoring in an increase to required quality for consent conditions.	Medium	If unexpected consent conditions are imposed there may be unexpected costs to compliance.	Council will work with the Regional Council early to minimise the risk of unexpected consent conditions. The cost of obtaining consents, knowing environmental standards are increasing, will be built into activities.
Asset/Activity Level	The Funding Assistance Rate (as advised from Waka Kotahi NZTA) will reduce by 1% each year until reaching 51% funding assistance in the 2023/2024 and then remain at 51% for the life of the plan.	High	Increase in demand on rate funding for roading activities, including the forecast NZTA portion of the city centre streetscape project.	Continue to engage with NZTA on funding assistance.
Asset/Activity Level Significant Assumption	Asset life Assets will remain useful until the end of their average useful life, assuming asset average life expectancy assumptions are correct. ¹⁴ Infrastructure installed in the 1920s are nearing the end of their lives and require renewal within the term of the Infrastructure Strategy.	High	Assets may need renewal earlier if this assumption is incorrect and change the renewal profile. Or may allow delayed renewal in other cases.	Review the appropriateness of assets at the time of renewal including, where appropriate, whole of life cycle assessment. Increase knowledge of asset conditions to better predict the average use of life if assumptions are lower than expected.
Asset/Activity Level Significant Assumption	Investment property and Forestry Investment Property and Forestry Assets are valued on a yearly basis. They are expected to increase in line with inflation. This is reflected in our Financial Strategy, and Accounting	High	Variation in valuations have no cash flow implications for Council.	Continue to value Investment Property and Forestry assets on an annual basis.

¹⁴ Council will use national standards is asset revaluation.

	policies.			
Asset/Activity Level	Capital programme delivery Implementation of a Project Management Office will increase effectiveness of delivery of the capital programme over the Long-term Plan. 75% of the capital programme will be delivered In Year 1, 80% in Year 2, 85% in Year 3.	High	It may take longer to implement the Project Management Office than expected, including as a result of challenges in attracting qualified personnel. Availability of contractors may have a greater impact than expected. Delay in the programme will result in higher costs as a result of inflation.	Active management of project processes, including engaging consultants as required, active and early engagement with contractors. Management of the programme rather than individual projects will enable contractor availability as well as funding levels to be actively managed. The financial risk of higher levels of delivery than expected across multiple areas will be monitored. Any impact of delayed capital expenditure on renewals on maintenance budgets will be actively managed.

Financial forecasting				
	Assumption	Level of certainty	Impact of uncertainty	Council response
Significant Assumption	Inflation Operational forecasts and capital work programmes will increase by the accumulated Local Government Cost Index inflation forecast by BERL.	Medium	Cost change factors are based on information developed for Council's by Business and Economic Research Limited (BERL). Significant variations to inflation would have an impact on Council's financial management.	Council will continue on the planned pathway for the Capital Works programme and review operational revenue & expenses each year.

Significant Assumption	Asset revaluation Asset values will increase by the accumulated Local Government Cost Index inflation forecast be BERL on the last valuation value. Revaluation occurs in 2021/22 and every third year therefore.	Medium	Changes in the valuation or life of Council assets may have a significant impact on Council's financial management and capital programme.	Council will continue on the planned pathway for the Capital Works programme and monitor with after each revaluation cycle.
Activity Report Level	Interest rates - Borrowing Expected interest rates on borrowing will be 2.5%.	High	The treasury report from Bancorp projects the ICC Borrowing interest rate are currently at 2.20% in 2020, and is expected to fall and remain under 2% for the next 10 years. Significantly higher interest rates would impact Council's financial position.	2.5% would allow some upside if the situation changed (interest rates increase or credit rating decreases); but Council have potential to go to 2.25% or 2% to lower costs.
Activity Report Level	Interest rates – Cash and Deposits Return on cash and term deposits are forecasted to expect a negative rate at some stage within 2020/2021.	Medium	Term deposit rates currently vary from 0.5% for under 6 months to a flat 1% for longer. Most forecasts still expect a negative rate at some stage within 2020/2021.	An assumption of 0.5% should be comfortable and if rates do increase again in the future, this will put Council in a more positive position.
Activity Report Level	Dividends from ICHL will be \$4.8m + CPI.	Medium	This would have a negative impact on Council's overall revenue and cash position, which would increase the burden on ratepayers.	Council will consider strategic reliance on dividends noting increased levels of economic uncertainty.
	External Funding It is assumed Council will achieve the level of external funding as estimated.	High	The immediate impact of Covid-19 has been seen in the local community, with reduced funding available from major community funders including the Community Trust of Southland and Invercargill Licencing Trust and Foundation.	Council acknowledges the challenge of obtaining external funding at this time. Should Council not be able to obtain funding as indicated this would impact project scope and in some cases require further consultation.

5. Significant Challenges and Issues

Like many parts of New Zealand, the area served by Invercargill City Council faces a number of strategic challenges in the years ahead.

5.1 MEETING OUR LONG-TERM RENEWAL EXPECTATIONS FOR INFRASTRUCTURE

Past investment cycles in the 1920's, 1960s and 1990s, particularly in piped networks, have created an echo of renewal requirements, which means that a significant part of Council's infrastructure will require renewal within the term of the Infrastructure Strategy, i.e. 30 years. These forecasts are in line with the assessed industry life expectation of the materials used.

The services provided from piped network assets, namely water supply, stormwater and wastewater, will be subject to larger expenditure increases in coming years to meet demand. These increases are due to the pipes reaching the end of their useful life and the need to renew them before significant failure occurs. Due to a change from depreciation funded infrastructure renewal programmes to a programme based on the end of life of individual assets we have identified a backlog of 3 waters pipes that need to be renewed. This has been managed with a smoothing of pipe renewal programmes of up to 7 years. This is reasonable given the ability to sweat assets to some extent, however, there is no overall impact on infrastructure renewals over the 30 year timeframe of this infrastructure strategy.

The magnitude of renewals expected within Invercargill City and the Southland Region may exceed the capacity for the work to be undertaken in the market place. To managed this Council plan to develop a regional forward work plan to allow the contracting market to appropriately for resourcing.

5.2 RESPONDING TO THE CHANGING ENVIRONMENT (BOTH NATURAL AND TECHNOLOGICAL) AND RETAINING INVERCARGILL'S CHARACTER INCLUDING ITS BUILT ENVIRONMENT

Climate change is a significant issue for most activities. The most likely immediate risk to assets is the rise in sea level, coupled with increased intensity of rainfall which raises the risk of flooding, unless properly planned for. There will also be a need to review Invercargill's tidal flood protection schemes with wider consultation on the future provision or renewal of flood banks alongside Environment Southland on the waterways through the City, or decide whether it is no longer viable to protect parts of the City. These are long term issues but require a planned pathway for considering them.

Policy setting from Central Government will possibly have the most volatility. Responding to regulation can place extra cost pressures on Council, for example in meeting increasing environmental standards for fresh water or new Discharge Consent Conditions requiring improved discharge water quality.

Council has a good road network but has identified problem areas including safety, asset condition and performance, environment and accessibility as key focus areas for future plans. Council has a number of risks (when considered against national peers) particularly for cycling and pedestrians and at intersections) and investment will be focused on safety improvements to reduce crashes, deaths and serious injuries. Additional funding is needed in resurfacing and rehabilitation programmes and Council will promote

programmes for more cycling and walking (active mode of transport). Resilience against more frequent storm events will require contribution to investment in some stop banking.

More recent trends in technology, particularly around retail, accommodation and vehicle use will have the potential to change our society. This has already been seen in the use of community facilities which are changing to be more social and open spaces.

Monitoring the compliance of existing resource consent conditions will provide a record of compliance for future processes. The renewal of consents is dependent upon the legislative and environmental standards and expectations that exist at that time. If a resource consent was not granted, or failed to be renewed for a major Council activity, this would have significant impacts on both costs and the ability to provide that activity. A major non-renewal may mean an entirely new approach to the activity would be required. This could be an issue for future stormwater and sewerage discharge consents.

An option for operational sustainability of our provision of water is to investigate an emergency water supply and in turn increase the resilience of the network.

5.3 THE CITY'S CHANGING DEMOGRAPHIC PROFILE AND ITS ABILITY AND WILLINGNESS TO PAY

Council's network assets typically have sufficient capacity to meet the needs of the projected demographic profile. However, the continued and increasing investment required in our renewal programmes to maintain levels of service makes up a significant proportion of Council expenditure. The impact of this is that a relatively static ratepayer base (which is aging) is required to pay for a wave of infrastructure renewals on limited means. The respective Asset Management Plans provide a smoothed renewal plan for infrastructure. This is coupled with Council's Financial Strategy to set out the plan to fund capital and operational expenditure long-term.

Longstanding and slowly advancing issues like population aging are progressively being felt. This can drive increased demand on community infrastructure such as housing care and recreation spaces, including accessibility and capacity at facilities. There is no longer adequate space at Splash Palace due to the current demand on the facility; there is also an increase in disabled users at the facility. As the population ages, Council considers that demand, particularly demand from disabled users, will continue to increase.

5.4 ENSURING COUNCIL WORKS IN A FINANCIALLY PRUDENT MANNER THAT PROMOTES THE CURRENT AND FUTURE INTERESTS OF THE COMMUNITY

The biggest challenge of all is one of funding; the changing demographic will mean a high percentage of our population will be on a fixed income. Based on the best information available, this document, in conjunction with the Financial Strategy, aims to provide a transparent response to the strategic challenges and ensure that the financial cost of providing the necessary infrastructure is predictable.

In the past Council has funded renewals as and when required. Council looks to focus on critical infrastructure assets and allocate capital budgets on renewals at a rate that equals the long-term economic consumption of assets. In some cases, the work is not yet required due to better than expected asset condition. Council is seeking to improve its understanding of asset condition to develop a more mature asset renewal programme. This can lead to smoothing of renewal profiles to minimise yearly variations in asset renewal budgets. This assists in informing the contracting market in order to provide

appropriate resources over a longer term and also assists in achieving better value for money.

Assets were revalued in June 2019 and will be revalued each three years thereafter. The asset revaluation process informs the financial allocation (the equivalent of economic asset consumption) each year and considers the latest costings and understanding of lives, allowing for renewals undertaken or additional assets acquired during the period, such as assets vested from subdivisions.

Funding assistance from Waka Kotahi New Zealand Transport Agency (NZTA) is important for roading activities; this is the Funding Assistance Rate (FAR). Council's 2020-2021 rate was 54% but is reducing to 51% by financial year 2023-2024. This will mean more ratepayer funding is necessary as less is contributed by NZTA.

5.5 WATER REFORM

Central Government has signified its dissatisfaction with the current model of delivery of service by Territorial Authorities for potable water and foul sewer. Central Government has suggested that fewer, but larger, organisations would result in an improved level of service. Territorial Authorities in the Southland and Otago region have committed to a study to investigate what form of organisation would best suit the region. Stormwater, at this stage, has been excluded from the reform, however it is likely to be impacted by the new National Environmental Standards for Freshwater. The full impact of the reform cannot be quantified at the time of preparation of this strategy or the associated AMPs. However, the potential impacts upon the individual activities are discussed within the respective AMPs.

5.6 CBD REVITALISATION

The CBD revitalisation is an important challenge for Invercargill. This includes the Invercargill Central development along with CBD master planning which looks at integration of the Invercargill Central development with the wider CBD. While there is limited impact on Council's 3 Waters (stormwater, foul sewer and water) infrastructure as a result of the CBD revitalisation there is a potential impact on the roading and parks and recreation activities. The master planning work has begun and the roading and parks and recreation activities will respond to the potential impacts once the result of the master plan has been confirmed. Reasonable estimates of the capital programme requirements have been included within this LTP.

6. Our Strategic Response to the Challenges and Issues

Council has recognised a number of important challenges and issues which will impact the community over the next 30 years and potentially longer given the expected lives of some asset components.

Council has developed a number of key responses which will be utilised in making decisions in day to day operations and the long-term planning for assets. The Strategy for the delivery of Asset Management is listed below.

6.1 MAINTAIN OUR CURRENT ASSET BASE

Council sees that it is important not to encourage wider expansion in providing infrastructure beyond that which is currently serviced or outlined in the Asset Management Plans or District Plan. By limiting future growth of services, the long-term financial responsibility can be better managed. Invercargill has, through the district planning process, clearly set where planned growth is desirable and required. Where expansion of infrastructure is acceptable the initial cost of this infrastructure is expected to be met by the development while also ensuring the whole of life cost for the new infrastructure is acceptable. Limiting expansion to align with these processes is appropriate.

6.2 RENEW ASSETS AT THE RATE OF ASSET CONSUMPTION

Over the medium to long-term, Council proposes to renew assets at the rate of asset consumption. This ensures the long-term sustainability of our asset portfolio. Within specific asset types there will be a need to smooth renewal programmes to minimise the impacts of past investment cycles, as noted within the Significant Challenges and Issues section of this strategy.

6.3 FOCUS ON ASSET CRITICALITY

In a move to reduce large and sudden increases in rates on the Community, the strategy looks to balance the risks of failure of some elements of each system (e.g. water pipes). Simply put, pipes with a lower criticality rating will have their replacement delayed. This strategy will enable a reduced financial demand in the short-term but it clearly needs to be understood that this approach increases potential failure risks which must have supporting financial mechanisms. These risks need to be understood and managed by improving our asset management maturity.

6.4 FOCUS ON SOUND EVIDENCE BASED ACTIVITY DECISION MAKING

Council has identified that making better investment decisions is an important response for managing long-term assets. Using tools such as the better business case approach are another way of supporting good asset decisions.

6.5 UNDERSTAND OUR COMMUNITY

Council has recognised that a better understanding and improved communication with the community will enhance the way in which infrastructural assets are managed. It is vital to align the community's expectations and needs with the service delivered by the assets, given that they are long life assets and a significant financial investment. The assumptions made in any planning process create tangible inputs to future design and decision making. Council is developing an engagement strategy to assist develop a better understanding.

Other considerations include:

- Should unplanned failures occur, use a mix of Council's financial "good health", accumulated reserves and/or insurances (where appropriate) to manage risks.
- Ensure growth is focused on social, financial and operational sustainability, and aligned to the vision.
- Utilise subsidies, user payments, rates and loans to ensure that both current and future communities pay for the asset they are using.
- When arranging contracts or significant activities, consider how investment decisions may impact a viable competitive supplier market in the Region.

7. Our Tools to Deliver the Strategy

7.1 STRENGTHEN OUR ASSET MANAGEMENT

Council has recognised that strengthening its asset management processes will produce more robust long term outcomes.

Responding to this Council has established a whole of organisation approach to Asset Management, and aligned desired outcomes with the Asset Management Policy and Strategy.

Council continues to utilise the International Infrastructure Management Manual 2015 (IIMM) to identify what is achievable through adopting best appropriate international practice and also strengthen internal knowledge and expertise.

Having a strong platform for delivering asset management will allow robust plans to be developed and then delivered. This will require upskilling of asset managers and their support teams with a goal to continually improve asset management knowledge within the organisation. Without this knowledge and ability to know and analyse the networks and assets, future renewals decision-making may be less than optimal. The long term understanding (in its widest context) of the renewal of assets is the key to ensuring assets are being managed at the right level in the most appropriate way.

The Asset Management Policy confirms for Council the asset management objectives and responsibilities, with the high level commitment of Councillors ensuring the appropriate stewardship decisions are developed, understood and through the business case process appropriate investment decisions are being made. Asset management is not just how well the asset is managed, but also understanding the assets and utilising an investment focused approach to decision making for the community in both the short and long term.

The Asset Management Strategy defines a detailed approach to how Council will advance the management of infrastructure assets to appropriate levels of maturity, how the objectives in the Policy will be achieved, and the approach for developing and implementing Asset Management Plans. Council will continue to develop the quality of our asset data, better understand how the assets need to be managed, with these improvements ongoing for the life of the strategy.

Using independent peer reviews of Asset Management Plans, the Asset Manager's development work has been assessed to ensure that future delivery plans meet legislative requirements. Where gaps in best or appropriate practice expectations have been identified in the activity, improvements have been noted within the Improvement Plan sections which highlight those future actions needed to strengthen the delivery of the activity.

The following diagram shows how each aspect of asset management contributes to successful delivery. Also important is the "line of sight" from the Long Term Plan to delivery of programmes, with clear linkages between work programmes and the objectives.



7.2 BETTER INVESTMENT DECISION MAKING

Asset management decisions have both short and long term impacts on the community. This strategy looks to ensure that these decisions are made with the best knowledge available using current thinking in understanding and communicating investment logic.

Government, through Treasury has accepted the “The Better Business Case (BBC) approach” as being a way to ensure that investment is well considered and appropriate decision making can occur. This approach asks questions of the asset areas - what is the problem, what are the benefits of solving it, and how should this occur considering the options available.

7.3 ENGAGE OUR CUSTOMERS TO BETTER UNDERSTAND THEIR NEEDS AND WANTS

Council is currently developing an Engagement Strategy that will shape how each area of Council, including elected members and staff, will engage with our Community in the future. It is anticipated that the Engagement Strategy will assist in delivering positive outcomes to the Community by identifying how the different groups within our Community wish to be engaged on different topics.

8. Linking the Long-term Plan to Activity Plans

8.1 CORE INFRASTRUCTURE

Community Outcome	Council's Objectives	How each Activity Contributes
Enhance our city	Invercargill's economy continues to grow and diversify	Roading provides the vital connections with state highways for the freight task distributing the goods needed for a city and throughout the city. The stormwater activity protects urban areas from flooding. The sewerage activity receives and treats trade waste. The water activity provides a water network with sufficient capacity to meet demand and firefighting requirements. The flood protection and control activity provides protection to the airport and Stead St area from flooding
	Invercargill's business areas are bustling with people, activities and culture.	Roading contributes to accessibility, via integrated networks of connected roads and footpaths. Safe roads allow freedom of movement for residents including appropriate lighting.
Preserve its character	The building blocks for a safe, friendly city are provided for all members of the community	Safe roads allows residents to select a mode of transport they wish to use with confidence. Street lighting allows residents to feel safe at nights. Roading corridor management contributes to ensure events have safe road and pedestrian access. Wide streets and low traffic flows allow ease of movement, together with networks resilient and reliable for all public events. Properties are protected from flooding damage, and receiving waters are not adversely affected by contaminated discharge. The sewerage activity protects public health by the safe collection of sewage. The water activity provides a safe reliable supply of water.
	Ease of access throughout the City is maintained.	Roading provides roads to connect people, signs to direct, footpaths for pedestrians, street furniture for streetscape usage. CBD areas have high amenity values.
	Strong, collaborative leadership of the City is demonstrated.	Good asset management delivers core infrastructure supporting the City to preserve its character.
Embrace innovation and change	The development of future industry is encouraged	The stormwater activity protects urban areas from flooding. The sewerage activity receives and treats trade waste.
	Technology is utilised in both existing and new City services.	Street facilities such as visitor signs, streetscape, seating, and car charging etc. offer high value people space and have flexibility to quickly adapt.

9. Priority Projects and Options

The focus of Council's Infrastructure Strategy over the next 30 years is to maintain and renew its current assets to ensure that the assets remain in such a condition as to continue to deliver a reliable and similar level of service to that currently being provided. They will be upgraded where appropriate to enable Council to meet increasingly higher environmental standards. The levels of service and how they are provided will also reflect the changing needs of our ageing population.

Council does not anticipate any significant expansion of the infrastructure networks. The key projects contained within this strategy are outlined below.

- Potable water, foul sewer and stormwater renewals
- Roading renewals
- Emergency water source
- Wastewater treatment plant discharge consent renewals (and the associated physical works upgrades)
- Stead St Stopbank upgrade
- City centre streetscape
- City reservoir renewal
- Waikiwi reservoir renewal
- Clifton treatment facility renewal and upgrade
- Braxholme treatment station renewal

10. Significant Decisions:

10.1 WATER – EMERGENCY WATER SOURCE

Issue and Consequence	Option	Implication	Cost
Invercargill City is at high risk being reliant on one open source water supply. If this water supply is contaminated or not useable as a result of a catastrophic event, the City could be without access to water for a significant time. Time frame for decision: June 2023	Develop a new secondary water source.	Invercargill has a resilient supply of water, any event of significance will have a reduced risk to the community.	\$ 17,000,000
	Increase water storage. Either untreated water at the Braxholme Water Treatment Plant or within the City.	Level of protection will be limited to size of storage. And is likely to mitigate only for short term events. Any storage structure will be subject to being managed as any other constructed asset, i.e. maintenance and renewal plus exposure to damage during seismic events.	Not costed but likely to exceed that for option above.
	Do nothing.	Invercargill is vulnerable to the potential of having limited water after a	\$0

Issue and Consequence	Option	Implication	Cost
		catastrophic event. Should there be no water supply then evacuation of the city may become necessary.	

10.2 SEWERAGE – DISCHARGE CONSENT RENEWALS 2025 & 2029

Issue and Consequence	Option	Implication	Cost
Wastewater Treatment Plant Discharge Consents require renewal in 2025 for Bluff, and 2029 for Clifton. Timeframe for decision: Bluff Consent – June 2022 Clifton Consent – June 2026	Negotiate new consents for discharge to Coastal Marine Area.	Bluff: Impacts on receiving environment are low. Quality improvement may not be required. Invercargill: Nutrient removal likely to be required to reduce load on estuary.	Bluff: \$200,000 for consent renewal. Invercargill: \$10,000,000 plus for nutrient removal.
	Remove discharges from Coastal Marine Area. Pump Bluff effluent to Clifton (2025), and discharge Clifton effluent to land (2029).	Bluff: Discharge Consent not required. Receiving water improvement at Bluff, and additional effects at Clifton would both be minor. Clifton: Effects on estuary would reduce, and may be transferred to catchment in which land disposal area is located. Suitable disposal site has not been identified.	Bluff: \$3,100,000 capital plus \$164,000 per annum operational. Clifton: \$28,000,000 capital plus \$3,100,000 per annum operational.
	Do nothing.	Failure to renew consents would result in regulatory action by Environment Southland, and directive to fix.	Unknown cost to defend legal action, and for fines imposed by courts. Court imposed directives to upgrade may also apply.

11. Changes to Levels of Service

Levels of Service (LOS) for asset groups included within this Strategy are not planned to have significant changes implemented. During the Long-term Plan (10 years) and the Asset Management Plan (AMP) (30 years), ongoing consideration of the Levels of Service will be undertaken and where changes are sought these will be included in future plans. This strategy looks to manage our existing assets at the same level of service. As options are selected within the Long-term Plan process, some changes can occur. Where these are different from the recommended programmes within the Asset Management Programme this document would need adjustment.

Council intends to maintain and renew its infrastructure assets to ensure that the assets remain in such a condition to continue to deliver a reliable and similar level of service to that currently being provided.

12. Our Approach to Asset Management

Council has recognised that to provide a better service to the community we must strengthen our approach to asset management and the systems we use. We must have and use sound evidence based information for decision making, the risks faced must be quantified in a consistent and formal way, and we must work closely as a coordinated team within Council across all departments.

We will deliver asset management through the following means:

12.1 STATUTORY AND REGULATORY REQUIREMENTS

Asset Managers must ensure that all Statutory and Legislative requirements are known and are covered by the set levels of service which are monitored. Regular reports on performance against these targets are made through Council Committees and Council structures.

Corporate wide approach to Health and Safety systems for all employees and contractors working on assets is in place and managed outside this strategy.

Council holds a number of consents for its core activities, in particular:

Stormwater

Discharge stormwater to water

A discharge consent for stormwater to the coastal marine area is yet to be applied for

Sewerage

Bluff treatment plant discharge consent

Clifton treatment plant discharge consent

Omaui treatment plant discharge consent

Water

Abstraction consent

Discharge consent for filter backwash

We assume that we will obtain reasonable consent conditions at the time of renewal of these consents, however, we recognise that the Bluff and Clifton wastewater treatment plant discharge consents may require significant capital upgrades to meet potential consent conditions. These have been flagged as key decisions in Section 10.

12.2 ASSET MANAGEMENT POLICY AND ASSET MANAGEMENT STRATEGY

Council must continue to maintain suitable governance and guidance documents in the form of policies and strategies to direct the delivery of asset management. These documents are considered by Council and when adopted they set the forward governance framework for staff to operate within. These documents also provide a high level plan which Council should expect itself to meet and exceed through having systems and processes which aid delivery. These areas may include the level of maturity Council sets for each asset group, how it is resourced, and the level of expertise it holds in-house. These documents also set the commitment to funding renewals and other activities, and need to be aligned and referenced when reviewing budgets or financial decision making.

12.3 ASSET MANAGEMENT INFORMATION SYSTEMS (AMIS)

Council will have systems which are capable of storing asset information and data in a coordinated and managed way, which is able to assist with the stewardship of owning assets.

These systems will be nationally recognised and have a low Information Management operational risk.

Currently two systems are utilised being Infor IPS (for piped networks, buildings and Parks) and RAMM for roading. Both are recognised systems and are capable of delivering analytical processes to assist in the development of advanced asset management solutions.

RAMM has been used by Council for nearly 30 years and has high data availability. It is supported in decision-making by dTIMS which has been used in NZ for around 20 years for long term predictive modelling and pavement renewal forecasting. Infor IPS has been recently implemented and updated data is now being sought for identified gaps.

Council's AMIS systems need to be adequately resourced and funded and will be budgeted within the relevant asset budget.

12.4 PROGRESSIVELY IMPROVE ASSET EVIDENCE

All asset data are collected and maintained accurately using Asset Management Information Systems (AMIS), this data includes:

- Asset attributes – e.g. size, material
- Asset condition
- Performance
- Age and expected life
- Value and cost to replace
- Criticality

A common criticality framework is planned to be developed which considers risk and resilience in decisions. Predictive models for asset condition will be developed and used to determine preventative maintenance needs and improve renewal programmes when and where data is available, and if it is not available, start to gather the data which is required.

12.5 OPERATE IN A PRUDENT MANNER

When assets are added to existing portfolios, lifecycle management and operational costs are considered.

Services will be regularly reviewed to ensure they are being delivered effectively, efficiently and to best practice. Structures will also be reviewed (Section 17A of LGA) to ensure that any opportunities are understood and changes implemented.

When procuring operational and/or maintenance services (in house and outsourced) or renewal works, value for money is attained through competitive procurement processes aligned to best practice. Generally, an open market process is used for contracts with key outcomes being whole of life cost, contractor performance, and Health and Safety.

Financial performance will be monitored and reported against Annual Plan Budgets aligned with quarterly reports to Council.

12.6 RENEW IN A FINANCIALLY PRUDENT MANNER

Existing assets are maintained and networks are only extended in accordance with the District Plan, Asset Management Plans, or where Council resolves on a case by case basis. It is generally expected that where an extension to the network is required for a subdivision or development, the costs associated with these extensions will be borne by the developer. The strategy suggests that we need to maintain and manage existing assets and not look to grow or expand the services provided by these assets.

Risk, cost, whole of life operating costs and benefits will be considered before accepting any new privately funded assets constructed in association with property development.

Financial inputs are a key element to decision making and working closely with Council's finance teams is important. Making evidence driven sound investment decisions through the use of advanced asset management and business case analysis is the direction planned.

An organisational approach is taken to prepare for the Long-term, Annual and Asset Management Plans. This approach prioritises renewal projects based on optimised decision making, major expenditure decisions are prioritised in order from the highest benefit cost ratio with consideration of condition, criticality, performance and non-asset solutions being recognised in the process.

The revaluation cycle has been adjusted to ensure it is carried out the year before the review of Asset Management Plans. Therefore the 2019 asset valuations are being used in the 2021 Asset Management Plans and LTP.

This strategy in conjunction with the Financial Strategy, requires a funding level that allows for the renewal of assets at a rate that is equivalent to their respective asset consumption profiles moderated by criticality, unless agreed otherwise such as in footpaths. The Financial Strategy provides details on how Council will fund these renewals.

This approach allows for a balance between renewal funding and depreciation, but develops an understood and acknowledged risk profile for Council that can be assessed and managed through financial, risk-based and investment-focused tools and techniques.

12.7 LEVELS OF SERVICE AND DEMAND

Levels of service are consulted on and agreed through the Long-term Plan. This is the best time to review demand forecasts, and these are documented in AMPs. We seek to understand customer and community requirements for levels of service and identify any gaps or demands for change by:

- Monitoring requests for service
- Understanding the utilisation and capacity of our infrastructure
- Using satisfaction surveys and/or specific focus groups

Council endeavours to ensure that levels of service are set at agreed sustainable levels and moving forward any change to levels of service will have an evidence based decision (benefit cost ratio or similar assessment factor) developed to demonstrate the impact of the changes.

12.8 IMPROVE THE ASSET MANAGEMENT SYSTEM

Asset Management Plans are developed to agreed maturity levels as outlined within the Asset Management Policy. This policy is reviewed as part of the Long-Term Plan development and more frequently if required.

Each plan is developed using a consistent framework and approach with similar sections and layout. This has been based on the Treasury Better Business Case Model. This approach assists to ensure all components are developed consistently, has similar and high visibility of key areas for readers to compare activities, and uses techniques developed for evidence based decision making.

Asset Management Plans have a 30 year minimum horizon for planning, particularly for renewals. However, many assets, such as piped networks, bridges, kerbing, and buildings have lives in excess of the plan length of 30 years. These assets, with lives sometimes up to 100 years or more are considered over their whole of life with the AMP generally only reporting the 30-year window. Technical analysis is used and wherever possible modelled for impacts over the life cycle. Should a significant impact be identified just beyond the AMP minimum report period, it will be included to show that material aspect of the future planning cycle.

Each plan has an improvement plan and proposed actions are a key area where future advancement needs to occur. The Improvement Plans and Actions are reviewed and ideally reported to the Executive Leadership Team.

The wider Asset Teams co-ordinate to ensure common direction and actions are known and best practice is acknowledged and shared.. Each plan has a specific owner and responsibility.

The Corporate Risk framework is under review with all plans having a specific risk register which is actively maintained and evaluated to reduce impacts.

12.9 SUSTAINABILITY AND RESILIENCE

Environmental effects are considered in operational and renewal planning and decision-making in order to reduce negative impacts wherever possible. Emerging technologies will be considered when appropriate for sustainability and if they can deliver service improvements. Both resilience and vulnerability are considered through corporate lifeline projects and as these plans are strengthened their outputs will be included in current AMPs.

Resilience is planned to be reviewed and improved along with the Corporate Risk framework, which includes contingency planning. When planning asset renewals, resilience is considered in the process of developing options. Further work is planned on understanding specific infrastructure risks, such as liquefaction susceptibility, as this influences renewal strategies for different parts of Invercargill.

The effects of climate change and sea level rise on future renewals and existing infrastructure are also to be considered in order to minimise negative impacts on both infrastructure and Invercargill's communities.

13. How We Are Going To Fund Infrastructure

This Infrastructure Strategy develops the asset activities which need to be planned for and delivered over at least the next 30 years. This strategy needs to work and interact with the Financial Strategy and through these connections develop methods and options for the planned works to be funded in the short and long term in a sustainable way.

The Financial Strategy provides details on the methods that Council will use to balance the financial demands from assets with the ability and willingness from ratepayers and users to pay for them.

By getting infrastructure spending right, Council can assist our community and economy in continuing to thrive, while fairly distributing costs across generations of users. This strategy will assist both Council and the Community to make well-informed decisions regarding the future development of any assets, as well as the maintenance and renewal of our existing assets.

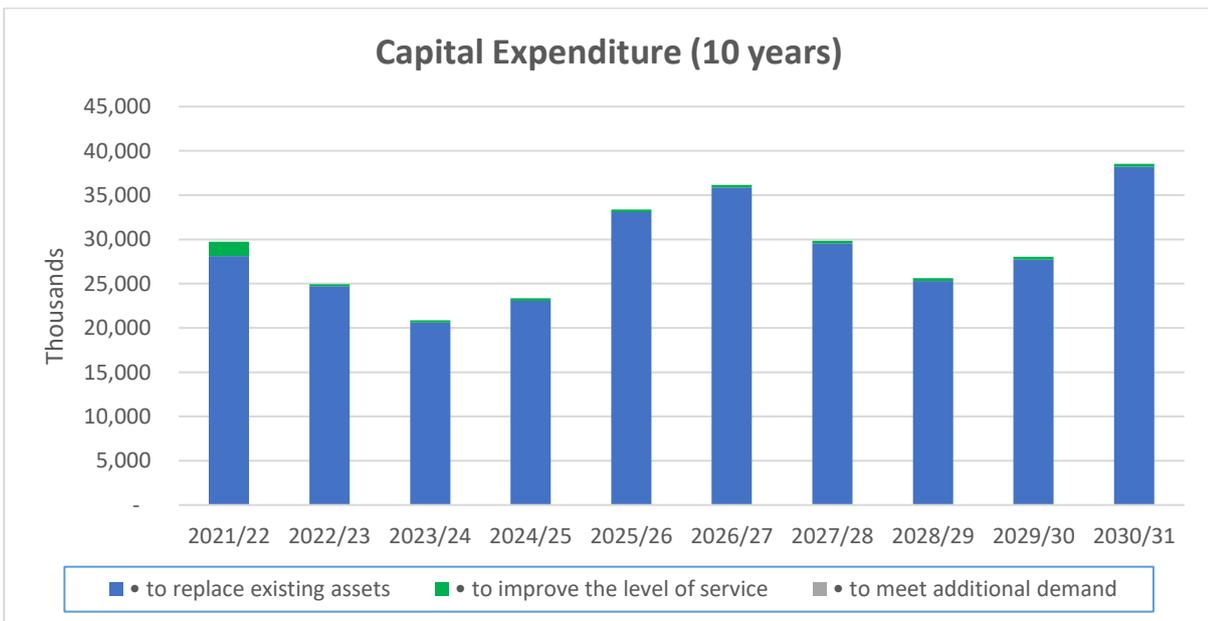
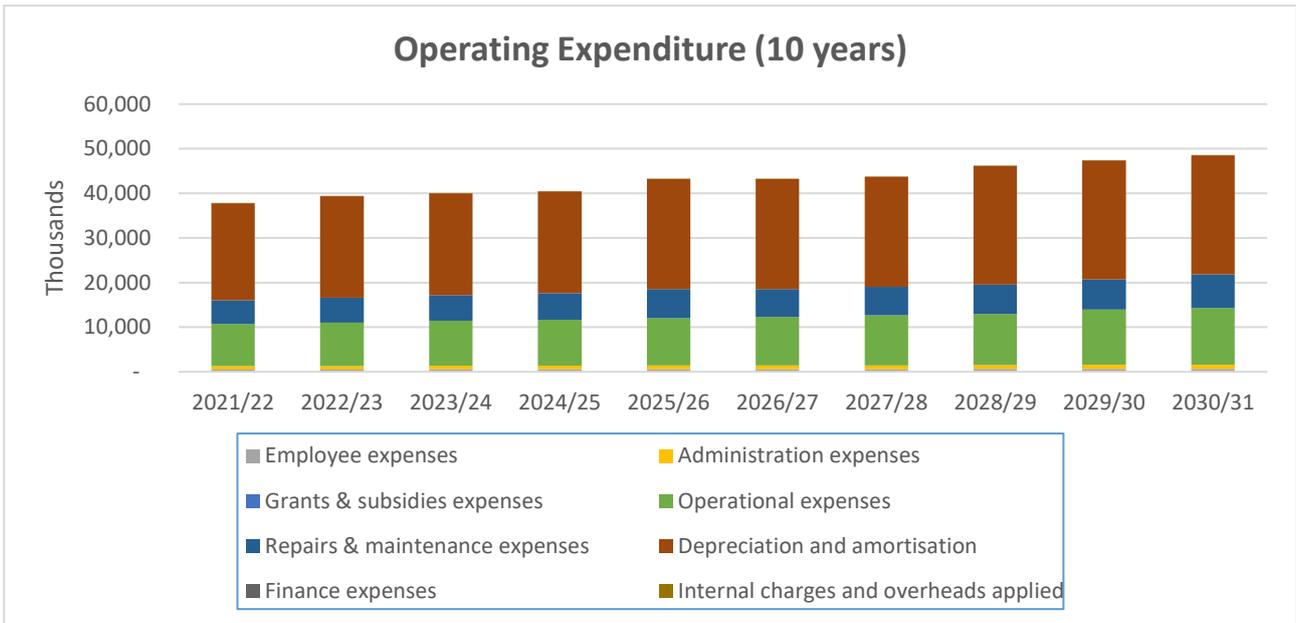
Council believes it has a strong financial position which allows a 'safety net' if renewals demands are required sooner than anticipated and planned by the strategy timing.

14. Long Term Financial Estimates

The financial estimates shown below are based upon the Financial Strategy’s inflation model and these estimates include inflation

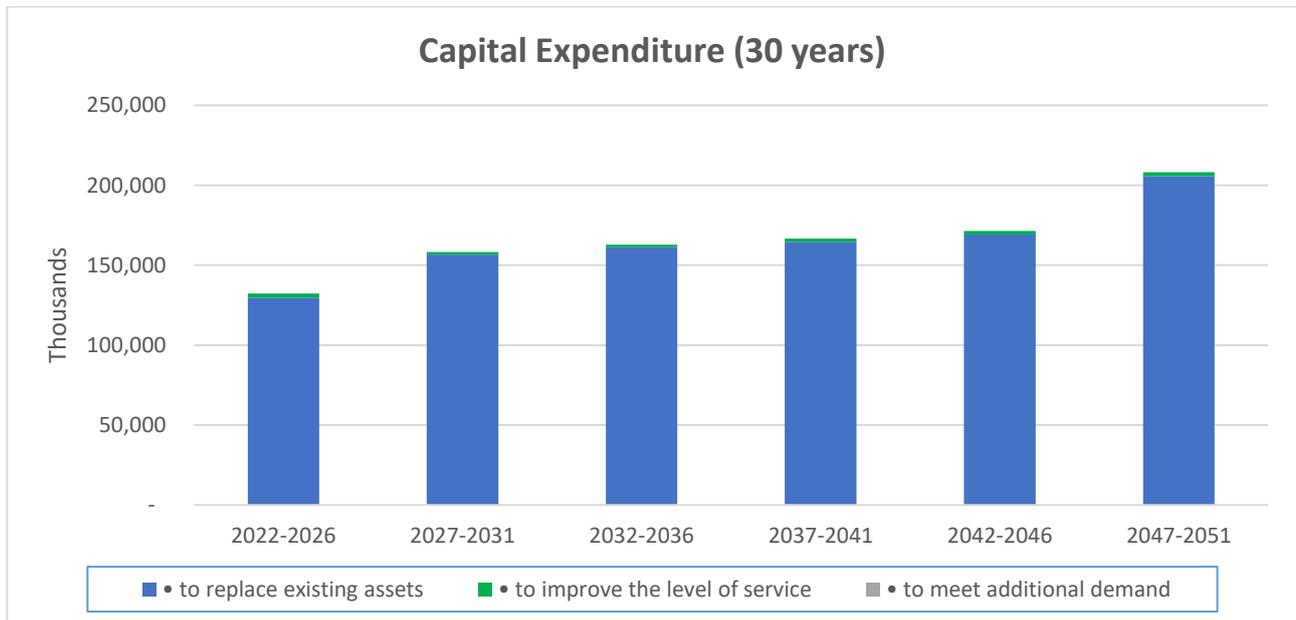
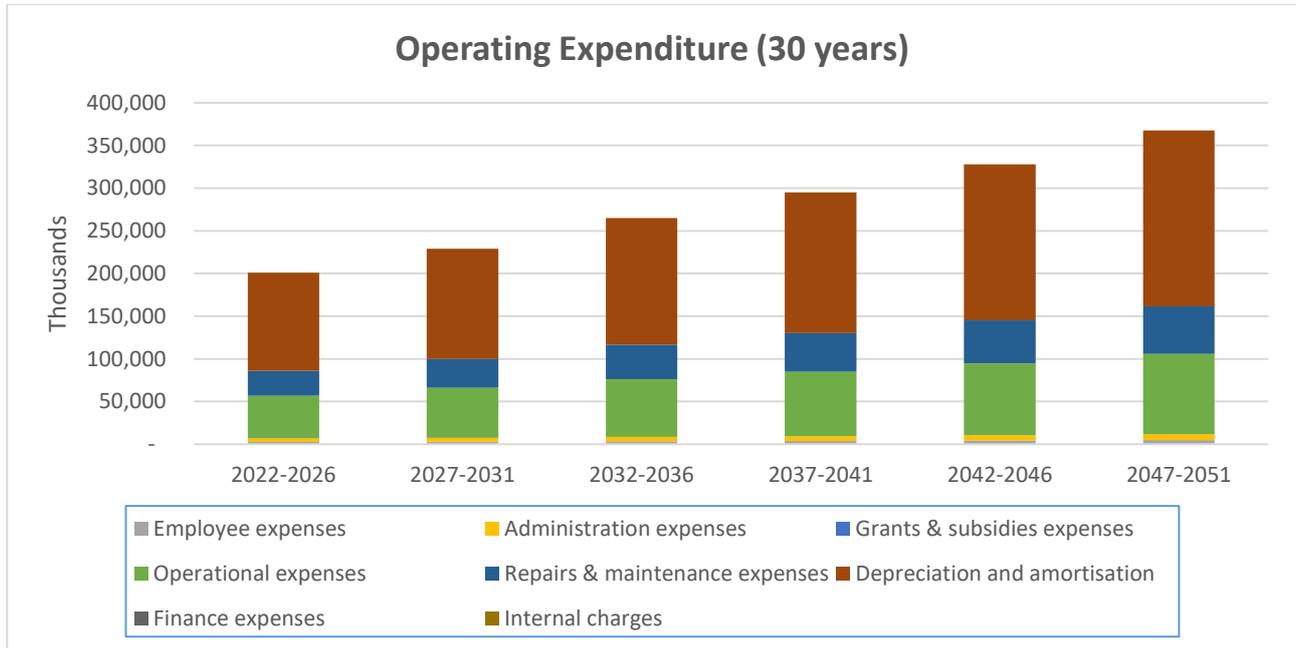
14.1 CORE INFRASTRUCTURE EXPENDITURE

The two graphs below show, in detail for the first 10 years.



14.2 CORE INFRASTRUCTURE EXPENDITURE

The two graphs below show the core infrastructure funding anticipated over the next 30 years.



14.3 CORE INFRASTRUCTURE FUNDING FORECAST

The funding strategy for these infrastructure projects is contained with the Financial Strategy.

14.4 TOTAL INFRASTRUCTURE FINANCIALS

Below are details for the first 10 years, of the total infrastructure financials anticipated over the next 10 years.

	2020/21 Annual Plan (\$000)	2020/21 Forecast (\$000)	2021/22 LTP (\$000)	2022/23 LTP (\$000)	2023/24 LTP (\$000)	2024/25 LTP (\$000)	2025/26 LTP (\$000)	2026/27 LTP (\$000)	2027/28 LTP (\$000)	2028/29 LTP (\$000)	2029/30 LTP (\$000)	2030/31 LTP (\$000)
OPERATING												
Rates revenue	27,194	27,194	28,711	30,017	31,385	32,815	34,312	35,877	37,156	38,485	39,861	41,287
Subsidies and grants (Capital)	3,743	8,359	10,758	8,637	5,403	5,431	5,601	5,500	5,553	5,673	6,115	5,873
Subsidies and grants (Operational)	3,481	3,746	4,163	3,184	3,303	3,404	3,493	3,581	3,720	3,788	3,874	3,975
Direct charges revenue	3,455	3,463	3,723	3,878	4,037	4,198	4,365	4,539	4,676	4,817	4,961	5,112
Rental revenue	29	86	226	233	224	230	236	242	248	256	262	269
Finance revenue	96	-	-	-	-	-	-	-	-	-	-	-
Dividends	-	-	-	-	-	-	-	-	-	-	-	-
Fines	-	-	-	-	-	-	-	-	-	-	-	-
Other revenue	360	360	360	370	379	389	400	409	420	431	443	455
Internal charges and overheads recovered	-	-	-	-	-	-	-	-	-	-	-	-
Total revenue	38,358	43,208	47,941	46,319	44,731	46,467	48,407	50,148	51,773	53,450	55,516	56,971
Employee expenses	13	488	520	535	549	562	576	591	606	623	640	656
Administration expenses	539	740	740	759	779	800	821	842	861	884	912	936
Grants & subsidies expenses	50	50	-	-	-	-	-	-	-	-	-	-
Operational expenses	8,519	9,585	9,467	9,726	10,115	10,321	10,635	10,857	11,178	11,444	12,407	12,694
Repairs & maintenance expenses	4,525	5,386	5,336	5,556	5,735	5,955	6,522	6,263	6,400	6,599	6,750	7,572
Depreciation and amortisation	21,711	21,711	21,714	22,819	22,821	22,824	24,678	24,681	24,684	26,636	26,639	26,642
Finance expenses	470	-	-	-	-	-	-	-	-	-	-	-
Internal charges and overheads applied	2,395	28	28	29	29	30	30	32	32	34	35	35
Total expenses	38,222	37,988	37,805	39,424	40,028	40,492	43,262	43,266	43,761	46,220	47,383	48,535
OPERATING SURPLUS / (DEFICIT)	136	5,220	10,136	6,895	4,703	5,975	5,145	6,882	8,012	7,230	8,133	8,436
CAPITAL EXPENDITURE												
• to meet additional demand	-	-	-	-	-	-	-	-	-	-	-	-
• to improve the level of service	200	1,621	247	269	276	283	290	297	305	314	322	
• to replace existing assets	30,670	28,132	24,708	20,612	23,064	33,110	35,853	29,563	25,305	27,736	38,217	
TOTAL CAPITAL EXPENDITURE	30,870	29,753	24,955	20,881	23,340	33,393	36,143	29,860	25,610	28,050	38,539	
Gross proceeds from sale of assets	-	-	-	-	-	-	-	-	-	-	-	-

Below are details in five year blocks, of the total infrastructure financials anticipated over the next 30 years.

	2022-2026	2027-2031	2032-2036	2037-2041	2042-2046	2047-2051
	LTP	LTP	LTP	LTP	LTP	LTP
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
OPERATING						
Rates revenue	157,240	192,666	227,407	271,629	324,454	387,550
Subsidies and grants (Capital)	35,830	28,714	32,189	40,060	45,901	48,116
Subsidies and grants (Operational)	17,547	18,938	21,226	23,665	26,385	29,421
Direct charges revenue	20,201	24,105	27,942	32,394	37,553	43,533
Rental revenue	1,149	1,277	1,436	1,601	1,785	1,990
Finance revenue	-	-	-	-	-	-
Dividends	-	-	-	-	-	-
Fines	-	-	-	-	-	-
Other revenue	1,898	2,158	2,427	2,705	3,016	3,364
Internal charges	-	-	-	-	-	-
Total revenue	233,865	267,858	312,627	372,054	439,094	513,974
Employee expenses	2,742	3,116	3,505	3,908	4,357	4,858
Administration expenses	3,899	4,435	4,990	5,570	6,196	6,919
Grants & subsidies expenses	-	-	-	-	-	-
Operational expenses	50,264	58,580	67,756	75,546	84,213	93,921
Repairs & maintenance expenses	29,104	33,584	40,437	45,086	50,268	56,046
Depreciation and amortisation	114,856	129,282	148,097	164,555	182,716	205,618
Finance expenses	-	-	-	-	-	-
Internal charges	146	168	187	211	237	262
Total expenses	201,011	229,165	264,972	294,876	327,987	367,624
OPERATING SURPLUS / (DEFICIT)	32,854	38,693	47,655	77,178	111,107	146,350
CAPITAL EXPENDITURE						
• to meet additional demand	-	-	-	-	-	-
• to improve the level of service	2,696	1,528	1,719	1,917	2,137	2,382
• to replace existing assets	129,626	156,674	161,118	164,625	169,241	205,745
TOTAL CAPITAL EXPENDITURE	132,322	158,202	162,837	166,542	171,378	208,127
Gross proceeds from sale of assets	-	-	-	-	-	-

Below are details of the capital expenditure planned to be delivered vs. what is required based on age over the next ten years.

2020/21 Annual Plan (\$000)	2020/21 Forecast (\$000)	2021/22 LTP (\$000)	2022/23 LTP (\$000)	2023/24 LTP (\$000)	2024/25 LTP (\$000)	2025/26 LTP (\$000)	2026/27 LTP (\$000)	2027/28 LTP (\$000)	2028/29 LTP (\$000)	2029/30 LTP (\$000)	2030/31 LTP (\$000)
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Capital expenditure required based on age

• to meet additional demand	-	-	-	-	-	-	-	-	-	-	-
• to improve the level of service	200	1,771	309	316	324	333	341	350	359	369	379
• to replace existing assets	37,568	33,749	29,940	24,250	27,133	37,289	40,474	34,780	29,770	32,630	44,963
Total capital expenditure required based on age	37,768	35,520	30,248	24,567	27,458	37,622	40,815	35,130	30,129	32,999	45,341

Capital expenditure planned to be delivered

• to meet additional demand	-	-	-	-	-	-	-	-	-	-	-
• to improve the level of service	200	1,621	247	269	276	283	290	297	305	314	322
• to replace existing assets	30,670	28,132	24,708	20,612	23,064	33,110	35,853	29,563	25,305	27,736	38,217
Total capital expenditure planned to be delivered	30,870	29,753	24,955	20,881	23,340	33,393	36,143	29,860	25,610	28,050	38,539

14.5 FINANCIAL IMPLICATIONS

