Infrastructure Strategy 2021 – 2051

Leaving a positive print on the future of our district.

WAIMAKARIRI
DISTRICT COUNCIL

June 2021

Contents

Executive Summary

This Strategy summarises the current state of Council's infrastructure and importantly outlines the key strategic issues facing the Council and its proposed response.

The Infrastructure Strategy has been prepared in accordance with the requirements of section 101B of the *Local Government Act 2002* and includes the mandatory 3 Waters and Roading and Footpath activities as well as Solid Waste, Green Space, Aquatic Centres, Libraries, and Property.

Current state of Council infrastructure

The Waimakariri District's infrastructure is in very good condition. There are four key reasons for this:

Young infrastructure

As a fast growing District a large proportion of the infrastructure has been installed within the last 30 years. The majority of it is therefore relatively new with the average age of 3 Water systems being less than 25 years old. As most of this infrastructure is expected to last for between 80 and 100 years, much of the renewals do not fall due until the 21st century and the first part of the next century.

Ongoing Investment

For more than twenty years the Council has invested heavily in ensuring it is planning adequately for growth. Accordingly, essential systems to support a growing community are in place. Examples include building the Eastern District Sewerage Scheme with sufficient capacity until about 2070, upgrading all Council water supplies to meet current standards, constructing Rangiora's water supply to support a community double the town's current population, building key new recreation facilities such as the Dudley Park Aquatic Centre and Stadium Waimakariri, and working with strategic partners to realise the construction of the Western Bypass and Northern Corridor thereby improving transport connections with Christchurch.

Building back better

When the Canterbury earthquake series caused major damage and disruption to the community and the Council's infrastructure, the Council decided to take the opportunity to 'build back better'. It strengthened all of its buildings to at least 67% of the new building standard, and where rebuilds were required it wisely invested in buildings that are fit for the future, including the Ruataniwha - Kaiapoi Library, Rangiora and Oxford Town Halls, Kaiapoi Aquatic Centre and the Oxford Service Centre. It also took the opportunity to replace underground infrastructure with more resilient solutions.

Focusing on resilience

Reinforced by its experience of the Canterbury earthquake series, the Council has invested heavily in understanding the condition and performance of its assets, with modelling of flooding and 3 Water networks providing a high degree of information and knowledge about potential risks and how its assets perform. In conjunction with this, the Council uses a risk-based renewal strategy that enables it to assess the critically, vulnerability, performance and condition of its infrastructure. This allows investment to be prioritised in a

way that protects the most critical infrastructure and minimises asset failure. Council has also ensured sufficient financial resources are set side to allow it to fully recover from a major natural disaster.

Key Strategic Issues and Council's Response

The Council's vision is *'to provide well maintained infrastructure that meets the needs of today's community and caters for the projected growth in the District's population in a manner that is sustainable and anticipates a changing environment.'* Strategies for continuing to achieve this are divided into the following six key themes:

Providing appropriately for a fast growing district

For more than twenty years the District has been one of the fastest growing districts in the country and this trend is set to continue. Within the next ten years the population is expected to grow from its current level of nearly 65,000 to about 78,000 by 2031 and 100,000 by 2051. Ensuring there is an overall strategy to support the growing population with appropriate infrastructure and community facilities is critical.

Key strategies are to ensure main transport and roading routes provide multi-modal choices to support community expectations, 3 Waters infrastructure is available when new developments commence, town centres are vibrant, and community facilities are developed and sized to cater appropriately. The major projects anticipated in the next 30 years include new community facilities in the Pegasus/Woodend area to accommodate a likely doubling of population, improving transport routes into and around Rangiora and increasing car parking in central Rangiora, revitalising and expanding the Trevor Inch Memorial Library in Rangiora and Rangiora Civic Centre, and possibly extending the District's aquatic facilities and MainPower Stadium approaching 2040.

Responding nimbly to changing operating environments

A number of factors are influencing delivery of services including the Covid-19 pandemic, new government introduced legislation and policy statements, and a proposed reform of the delivery of 3 Water services. All of these challenges provide a level of uncertainty in the manner in which the Council manages its business.

Increasing standards, particularly in terms of improving the quality of drinking water and the quality of stormwater discharged into lowland streams and waterways, is requiring the Council to invest significantly in understanding the implications and provide for any capital works required to ensure those standards are met. In respect of improving waterways, substantial investment is likely to be needed over the next two decades.

Later in 2021 more will be known about the Government's intention to reform 3 Waters service delivery. Until that time the Council will continue to discharge its stewardship responsibilities on the presumption that it will be the continuing owner and operator of those services.

Meeting levels of service and community expectations

The Council continues to survey the community to understand its needs, and respond accordingly. Continuing to deliver current levels of service remains a high priority for the Council. Renewal and maintenance programmes are in place to ensure service levels are consistently met.

Rates affordability is a key factor Council takes into account when deciding on its programme of new capital works.

Planning for natural hazards and climate change

The Council continues to invest in making its infrastructure resilient to significant natural hazards risks, especially from major earthquakes and floods.

Reducing and mitigating greenhouse gases will increasingly be of concern as the Government strives to achieve its target of zero emissions of all domestic greenhouse gases, other than biogenic methane, by 2050 under the *'Climate Change Response (Zero Carbon) Amendment Act 2019'*. The Council has a number of initiatives underway to understand the implications of climate change and further work is intended to develop adaptation measures that take account of these.

Transitioning to a sustainable future

The Council has developed plans and is implementing actions to improve its sustainability and in its planning for the community is seeking to bed sustainability principles into its decision making and procurement practices. In addition to lowering its carbon footprint, Council seeks to improve environmental outcomes by enhancing waterways through its 'Arohatia te Awa (cherish the river)' programme of work, by providing more transport modes options, particularly for walking and cycling, and by encouraging greater use of public transport through provision of park and ride facilities.

Renewing infrastructure in a timely manner

Maintaining the infrastructure the Council owns is its first priority. The Council has developed a renewals programme for the whole of life of its assets for the next 150 years. Revenue levels are set to ensure sufficient funds are available for when the renewal needs to occur. When combined with a risk-based renewal policy, where the condition, performance, criticality and vulnerability of the assets are factored in, infrastructure is able to be maintained to the appropriate standards to meet the current and long-term needs of the community.

Conclusion

In developing its programme of significant works for this Infrastructure Strategy, the Council aims to maintain appropriate levels of service as the District continues to grow, and plan responsibly for future asset renewals, while keeping rates affordable for an increasingly aging population.

Considering how Council can transition itself and the community it serves to a carbon zero economy by 2050, and adapt to the effects of climate change, while continuing to promote community and environmental wellbeing will also need to be key focus areas for the next few years.

1 Introduction

1.1 Purpose and scope

The Infrastructure Strategy (IS) is part of a suite of documents and policies that form the 2021 Long Term Plan (LTP). There is a strong relationship between the Infrastructure Strategy and the Financial Strategy (FS) contained within the LTP, with the IS describing the key infrastructure issues the Council needs to face over the next thirty years, along with principal options for addressing these, and the FS identifying the key financial parameters and limits the Council plans to operate within.

The activity areas of water supply, wastewater and drainage have 13 activity management plans (AMP's) each, one for each rated scheme. Roading and Footpaths, Community Facilities, Green Space/Aquatic Facilities, Stockwater, Solid Waste and Property have one each. The relationship between the IS and the AMP's is iterative with the IS informing Asset Managers of the organisation's strategic priorities and the AMP's identifying major infrastructure decisions and future challenges.

While section 101B of the *Local Government Act 2002* requires the core activity areas of 3 Waters, Roads and Footpaths, and Flood Protection and Control works to be included in an infrastructure strategy, other assets can be included at the discretion of the local authority. The Waimakariri District Council has also included the activity areas of Solid Waste, Property, Library Services, Green Space and Aquatics in this Strategy because they are a group of infrastructure assets, significant either in terms of number of assets, level of expenditure, or community expectations for service delivery. The Council also considers it to be valuable for the strategic planning of these discretionary activity areas to be extended to a 30 year time frame. Major river flood control works and assets located within the District are managed by Environment Canterbury, and therefore not included in this document but the Council-owned and managed localised stormwater mitigation assets are.

In accordance with the *Local Government Act 2002* this strategy outlines how the Council intends to manage its assets including:

- The need to renew or replace assets
- Responding to growth or declines in demand for services reliant on these assets
- Allowing for planned increases or decreases in levels of service
- Maintaining or improving public health and environmental outcomes or mitigating any adverse affects on these; and
- Increasing the resilience of assets by identifying and managing natural hazard risks and providing appropriate funding for these.

A table outlining the key assumptions and risks that underpin this document can be found in the LTP proper.

Capital works for years one to three of this Strategy are projects the Council is seeking specific feedback on through the LTP process. Projects from years' four to ten are signalling budgets that will be subject to further consultation either as part of the next LTP process or earlier. The risks regarding the accuracy of the underlying assumptions for these projects increase over time. Projects identified in years eleven onwards should be considered to be fluid due to the greater degree of uncertainty about the operating environment and underlying assumptions. These are also subject to the three yearly LTP consultation process, but generally will only be highlighted in the LTP Consultation Document in the LTP period just prior to their detailed project planning and implementation. All figures in this document are not inflation adjusted unless otherwise stated.

The Council's Infrastructure Strategy has been developed based on the best information available to it and the Council has used assumptions based on

what it reasonably considers could occur over the next 30 years. Undoubtedly, the actual outcomes will vary to those contained within this Infrastructure Strategy as better information comes to hand.

The Council will continue to monitor and review the information available to it and will refine and update its Infrastructure Strategy every three years to reflect any significant changes.

The task of building, operating and maintaining infrastructure assets in an affordable manner is influenced by external factors; the most significant of these being population growth, community expectations for service, the legislative environment the Council operates within and mitigation of natural hazards, climate change and environmental degradation. Emerging technologies may have more of an impact in the future, particularly with regard to roading.

1.2 A vision for Waimakariri

Waimakariri District Council's Vision is:

To make Waimakariri a great place to be, in partnership with our communities

Consultations carried out to develop strategies, policies and plans, regular community surveys, and ongoing feedback to staff, community boards and politicians help to define what residents think 'a great place to be' is. This is reflected in the Community Outcomes which guide Council's decision-making in implementing the 2021-2031 LTP and 30 Year Infrastructure Strategy.

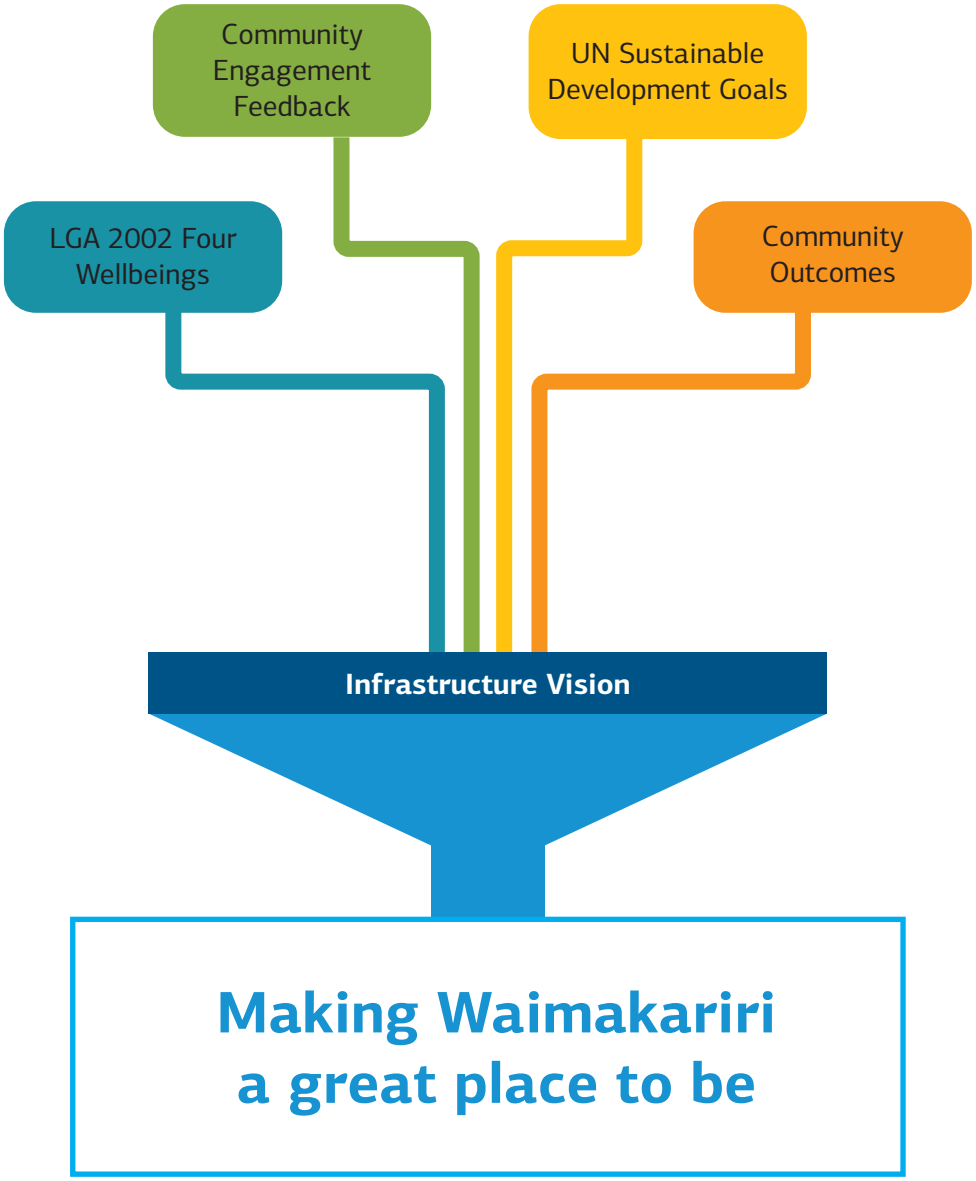
Each community outcome is associated with one or more of four wellbeings - social, economic, environmental, and cultural, which the *Local Government Act 2002* requires Council to promote.

As each infrastructural activity is aligned to specific community outcomes, the contribution it makes to community wellbeing can now be more easily seen. In 2020 the Council subscribed to the SOLGM Community Wellbeing Service which will enable it to track progress against a comprehensive set of wellbeing indicators.

The community outcomes also broadly align to the United Nations Sustainable Development Goals (SDG). These are a blueprint for providing a better and more sustainable future for all by 2030 and have been incorporated into the Council's 2021 LTP for the first time.

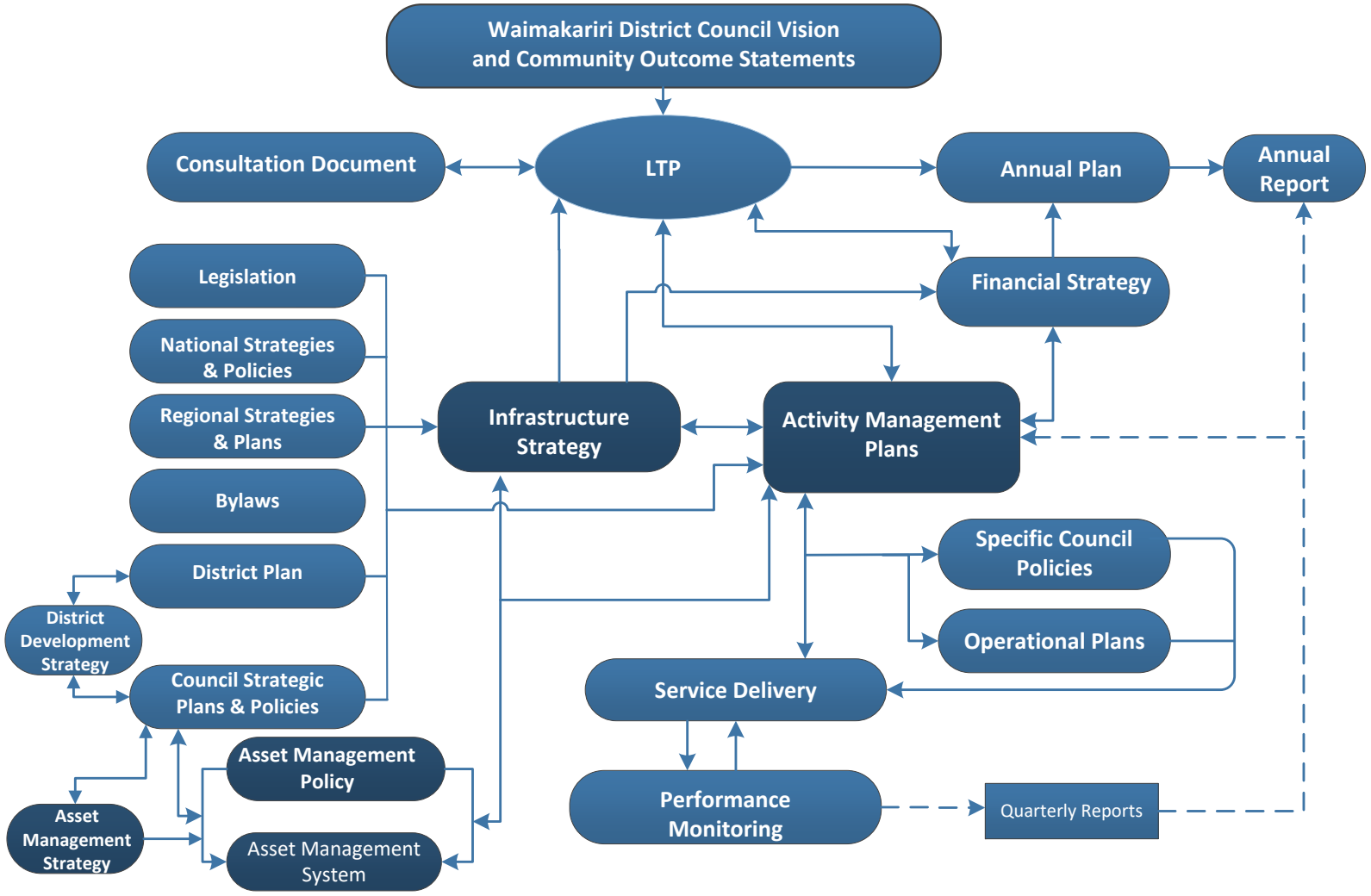
Wellbeing Defined

Our quality of life, including: civic and human rights, culture and identity, housing, knowledge and skills, leisure and recreation, material standard of living, employment status and job satisfaction, the physical and natural environment, safety and security, health and social connectedness.


Community Engagement Feedback
UN Sustainable Development Goals
LGA 2002 Four Wellbeings
Community Outcomes
Infrastructure Vision
Making Waimakariri a great place to be

1.3 Infrastructure Strategy relationships and influences

The following diagram shows the pathways for external and internal influences on the Infrastructure Strategy and how this in turn influences other aspects of Council business.



2 Our District

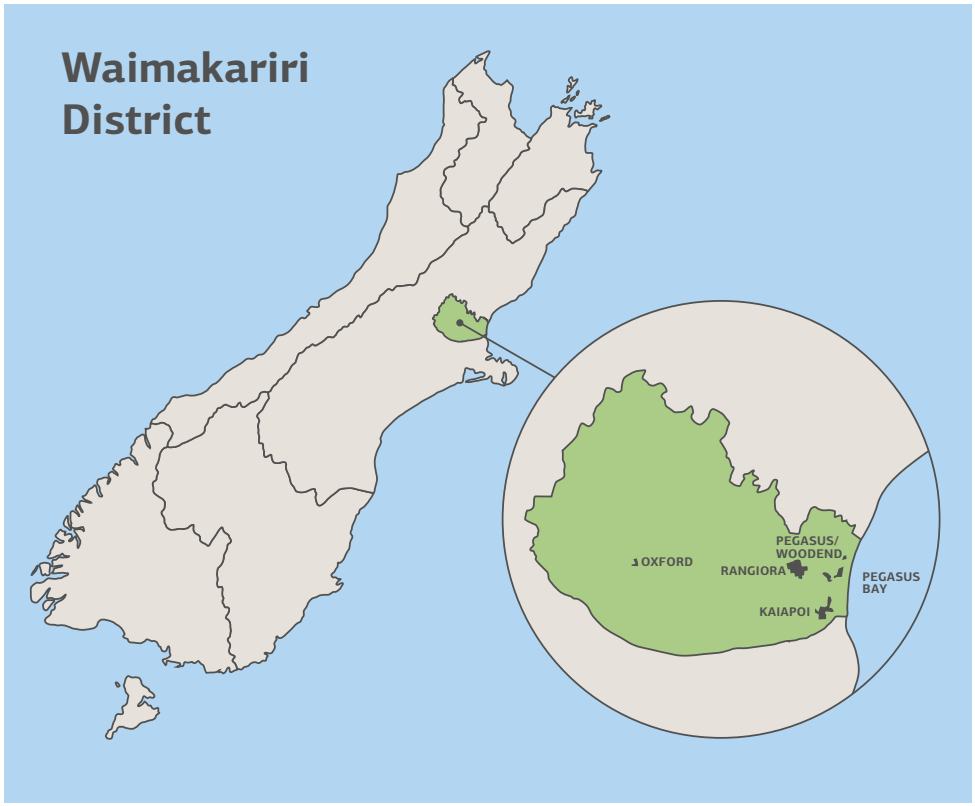
Waimakariri (meaning river of cold rushing water or cold river)

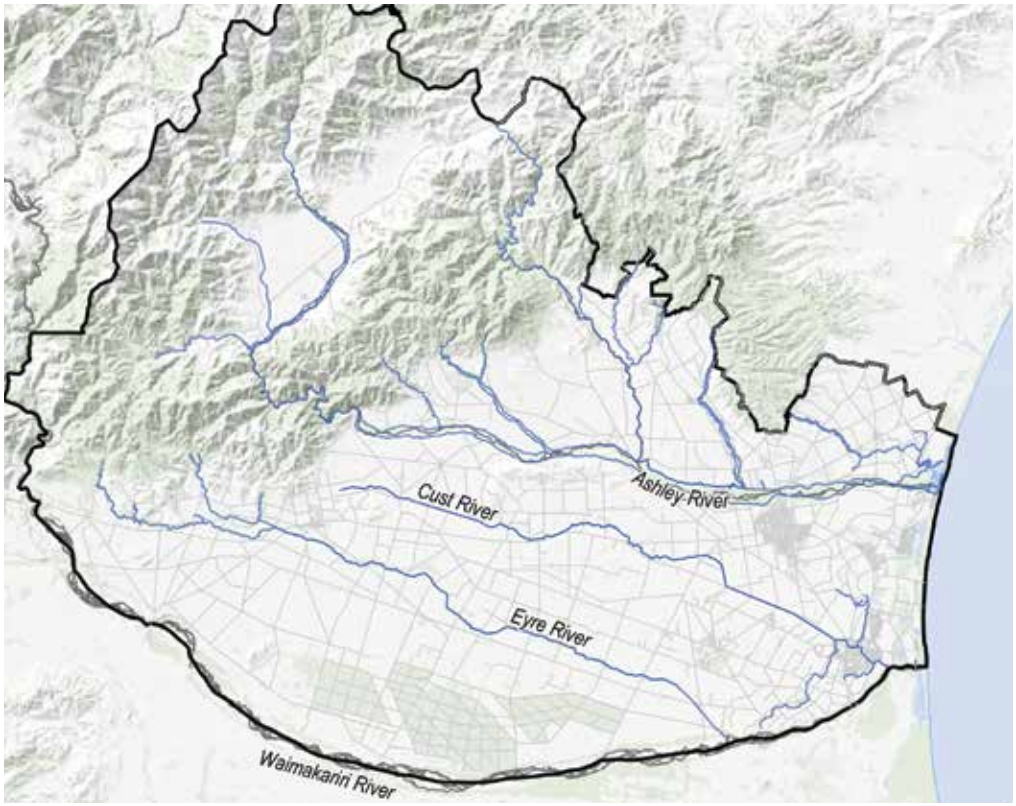
2.1 Location and character

The Waimakariri District lies to the north of Christchurch on the Canterbury Plains, extending from the Waimakariri River to the south, Pegasus Bay in the east and the Puketeraki Range in the west. It is bounded to the north by Hurunui District.

More than 80% of the population is concentrated in the eastern part of the District in the main urban areas of Rangiora, Kaiapoi, and Woodend/Pegasus. Oxford is the largest town in the western part of the District. These larger towns are supplemented by smaller rural villages and four beach settlements. The District also has a large number of people living on small holdings in the rural areas with approximately 3,500 households living on lots of between 0.5 and 4 hectares. Many of these properties have their own sewerage system and some have their own water supply systems.

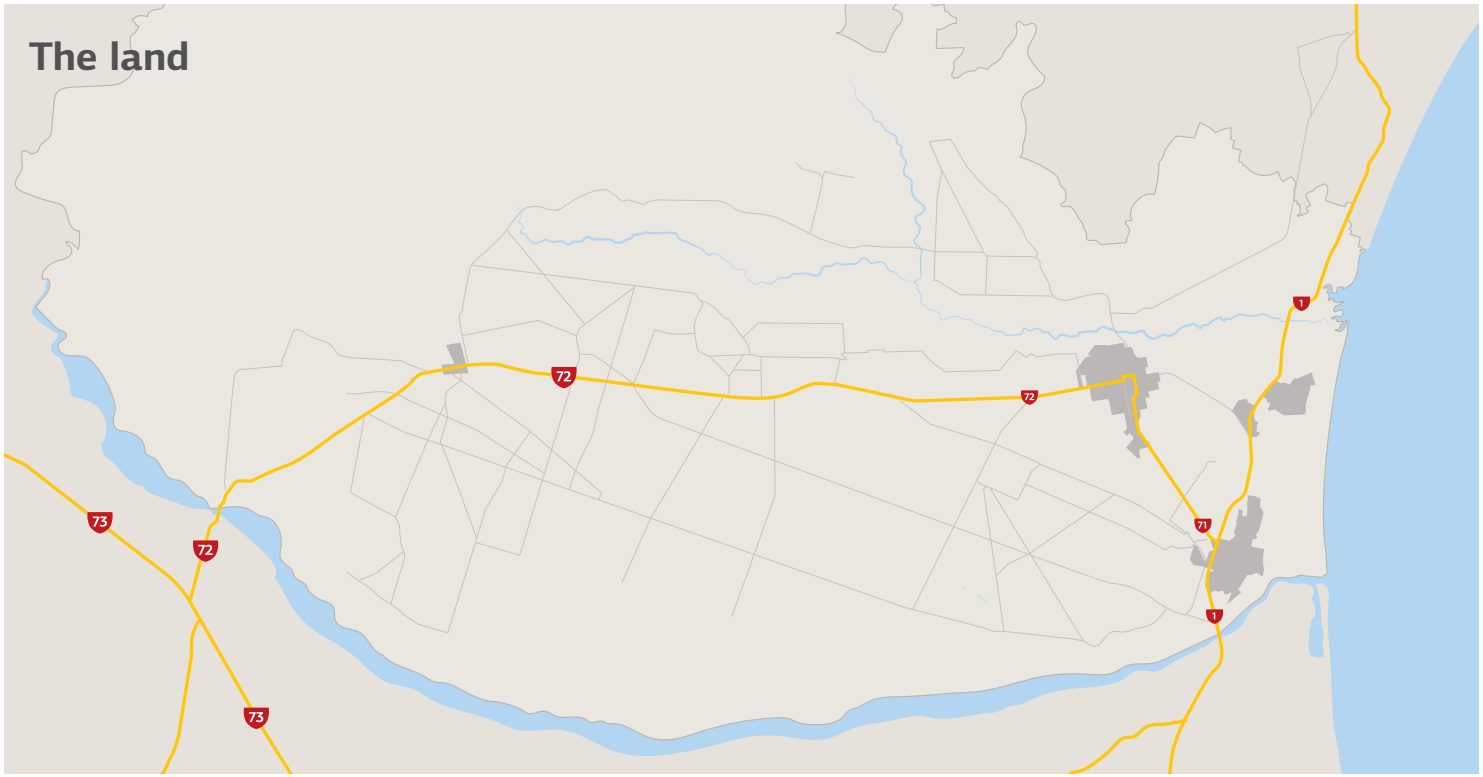
Most people live within a 30 minute drive from one another and all of these areas are within commuting distance of Christchurch City. Despite rapid population growth, Waimakariri has retained its small town/rural character and the District's close proximity to Christchurch makes it an attractive location for those wanting to live near a city but enjoy the country environment.




Cust River
Ashley River
Eyre River
Waimakariri River


High Street
Victoria Street

2.2 The land and people



Main towns

Rangiora
Kaiapoi
Oxford
Woodend/Pegasus

Rural villages

Cust
Sefton
Ohoka
Ashley
Mandeville
Tuahiwi (Hapū of Te Ngāi O Tūāhuriri Rūnanga)

Beach settlements

Waikuku
Woodend
The Pines
Kairaki

225,500ha
Land area of the District

$7,441m
Land value (1 July 2019)

$15,953m
Capital value (1 July 2019)

1,356
Number of unoccupied private dwellings

22,098
Number of occupied private dwellings

$26,631m
Rateable properties (1 July 2020)

64,700

Estimated usually resident population as at 30 June 2020

Main ethnic groups

European (93%),
Maori (9%),
Asian (3%)

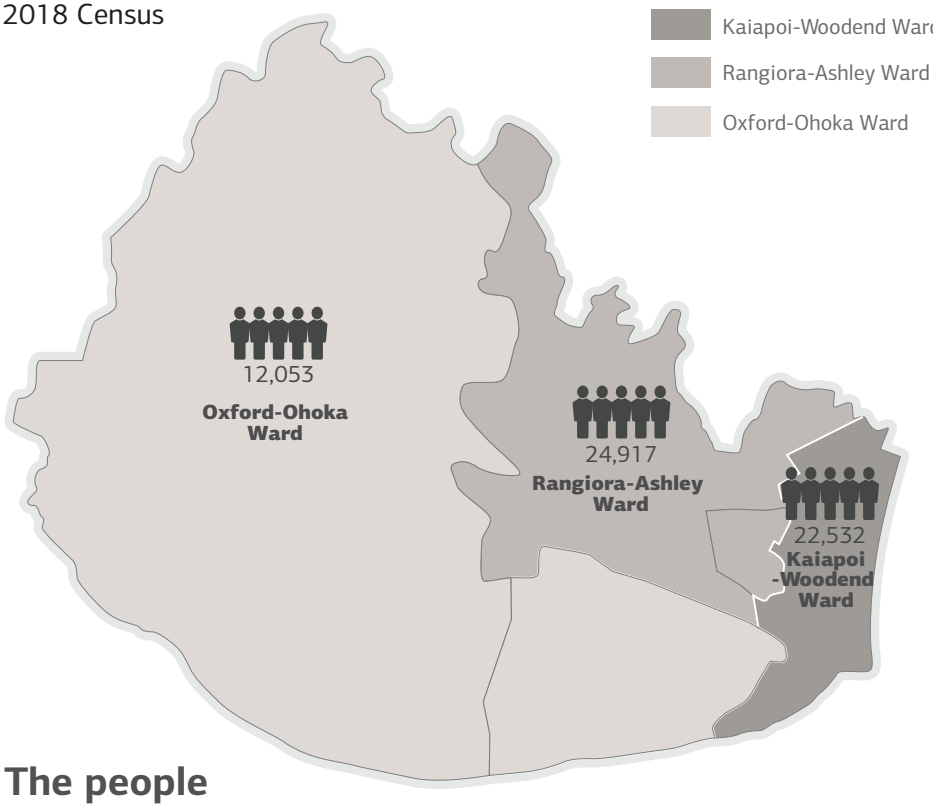
Population age

0-14 years (19%),
15 to 64 years (62%),
65+ (19%)

+8.7%

Population change 2018 - 2020

Data source: Statistics NZ
2018 Census



Household composition

One family households (74%)
Couple only households (47%)
Couple with dependent children (28%)

Home ownership

80% of households live in a privately owned dwelling

Employment

Employed full time (49.8%)
Employed part-time (16 %)
Not in the labour force (31%)
Unemployed (2.7%)

Gross income

46% earn < $30,000 pa, 36% earn between $30-$70,00 pa and 18% earn > $70,000 pa
Mean income $33,600

The people

3 Thirty Year Strategy

3.1 Strategic vision

In the 2018 Infrastructure Strategy, the Council's main focus for the next 30 years was on catering for growth, ensuring the renewal of assets was supported by an appropriate funding strategy, and addressing increasing community expectations for service provision. These aspects continue to be a major part of the Council's strategic focus, however the context within which growth happens is much more at the fore. In this Strategy the Council acknowledges the need to make development more holistic and sustainable, to ensure ongoing community wellbeing, prevent and mitigate negative effects on the climate and natural environment, and enhance the resilience of communities and the infrastructure they rely on.

The Council's external operating environment is more uncertain in 2021 than in 2018 with the *Resource Management Act 1990* Review, 3 Waters Review, and Future of Local Government Review all initiated by Central Government over the past year or so. The financial impacts of Covid-19 also create uncertainty and while the half-yearly economic and fiscal update released in December 2020 by the NZ Treasury indicates New Zealand is recovering faster than expected, the full extent of the pandemic's impact on the international markets we rely on is not yet known.

Figure 3.1 sets out the Council's vision for infrastructure provision and management. The vision supports the Council's community outcomes outlined in appendix 5.4.

The Council's first priority is to maintain the infrastructure it already owns. The six key themes provide a focus for Council's infrastructure planning and within this framework specific priorities, in no particular order, are to:

- Complete infrastructure expansion/improvements required to cater for population growth
- Complete the assessment of climate change risk for the District and develop a Council Response Strategy in consultation with the community
- Continue to allow borrowing headroom for natural disaster mitigation
- Transition firstly the organisation and then the District to a more sustainable way of operating
- Continue to manage flooding risk
- Improve the quality of stormwater network discharges
- Carry out indigenous biodiversity enhancement and ecological improvement of waterways
- Make safety improvements to the roading network and improve transport options
- Ensure town centres continue to be vital spaces for commercial and community activity
- Continue to provide for a range of community and recreation spaces and facilities.

Key projects that give effect to the above are included in section 4 of this Strategy.

Figure 3.1 Infrastructure vision and key themes

Providing well maintained infrastructure that meets the needs of today's community and caters for the projected growth in the District's population in a manner that is sustainable and anticipates a changing environment by:

- Providing appropriately for a fast growing district
- Responding nimbly to a changing operating environment
- Meeting levels of service and community expectations
- Planning for natural hazards and climate change
- Transitioning to a sustainable future
- Renewing infrastructure in a timely manner

3.2 Providing appropriately for a fast growing district

Key Issue

The strong ongoing population growth in the District affects the demand for infrastructure and services. The aging of the population is also predicted to have an influence on the services provided. Ensuring the right infrastructure is provided at the right time and in the right location to cater for an expected population of 100,000 by 2051 is a key issue for the Council's infrastructure planning.

Description

Population growth

The population assumptions used in this Strategy are based on a Corporate Population Scenario first developed by the Council for the 2015 LTP called the WDC medium/high variant. This is based on Statistics New Zealand population projections, which are ground-truthed by development activity, and falls between their medium and high population projections. Over time the Council's population projections have proved to be reliable, with annual adjustments made for infrastructure planning purposes as necessary.

Unfortunately a low turnout for the 2018 Census required Statistics NZ to initiate a large scale census mitigation project, utilising alternative administrative data to fill the gaps. This has delayed the release of the next population projections until 2021 meaning they are unable to be used to inform this Strategy. As an alternative the Council reviewed the following assumptions contained within the WDC medium/high variant and found them still to be valid.

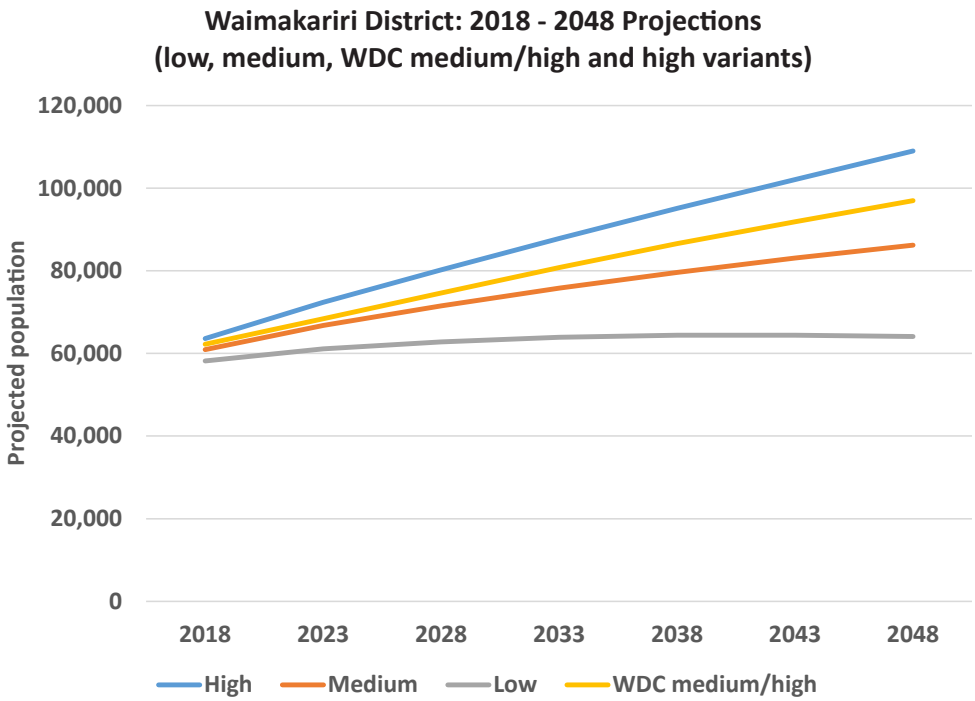
- Building consents continuing at approximately 450 per annum, decreasing over time to 350 to reflect demographic trends
- Steady internal/international migration
- A net decrease in natural population (deaths exceeding births) which is forecast to occur between 2043 and 2048.

The District's population grew by 3.0% in the 2019/20 year, and the previous four years new dwelling building consents remained well above the 465 per annum average required for the Council's medium/high projections. For the above reasons the Council determined the WDC Corporate Population Scenario - medium/high variant is still fit for purpose.

The high level of growth is likely to continue, particularly if a number of New Zealanders living overseas choose to resettle in this District for at least the short term in response to the Covid-19 pandemic, but also possibly the longer term. Rising house prices could also incentivise people to move into the District from elsewhere.

The Council acknowledges changes in geopolitical landscapes and national migration policies may affect these growth estimates. Statistics New Zealand also requires users to cite they have produced their projections according to a set of agreed assumptions and advise that extending the projections beyond 2031 may result in the population becoming unrealistically high or low by 2051. The Council intends to closely monitor its Corporate Population Scenario - medium/high variant projections and revise these accordingly.

Figure 3.2 Population projection scenarios



(Source: Statistics New Zealand and WDC scenario projections. All data is for the five years ended 30 June. The projections have as a base the estimated resident population of the area at 30 June 2017.)

In just about 25 years the District's population has almost doubled, from 33,000 in 1996 to approximately 64,700 as at 30 June 2020. Under the Council's Corporate Population Scenario the District's population is expected to increase from 64,700 to 77,700 by the end of the 2021-2031 LTP period. By the end of the thirty year planning period covered by this Strategy, the District's population is projected to be 100,000, with the effects of the structural aging of the population (where deaths could start to exceed births) being seen after about 2043. This could signal the start of a decline in the population if migration settings remain similar to those at present.

Table 3.1 2020 to 2051 population projections

Waimakariri District Projected Population 2021 - 2051					
	30 June 2020 Stats NZ estimate	30 June 2031 population projection	Forecast population increase to 2031	30 June 2051 population projection	Forecast population increase to 2051
WDC medium/high variant	64,700	77,700	13,000	100,000	35,300
Stats NZ medium variant	64,700	74,000	9,300	87,900	23,200

Aging population

The medium age of those living in the District at 43.6 years is slightly older than the national average of 37.5 years; and the number of residents aged over 65 is expected to more than double from 11,241 in 2018 to 23,300 in 2038.

In addition to this the population of the Waimakariri District is structurally aging. The following table shows the proportion of children under 15 years old living in the District at the 2018 Census (Statistics NZ) slightly exceeded the proportion of the population over the age of 65 years.

Table 3.2 Proportion of children and older people in District population

Age Groups	2018 Census		30 June 2020 Population Estimate	
	Number in District	Proportion of population	Number in District	Proportion of population
Children (0-14 years)	11,415	19.1%	12,000	18.6%
People over 65 years	11,241	19.0%	12,800	19.8%

The Waimakariri population estimate at 30 June 2020 shows this situation has reversed. Professor Natalie Jackson, in her paper to the Community Board Conference in 2019, suggests that *"once a population has more older people than children it is a short step, of around one decade, to more deaths than births and the end of natural increase"*. Professor Jackson goes on to suggest that once a population gets into a situation of natural decrease, growth can only occur through migration.

Of the 14,745 people who moved into the District in the last five years 2,412 (16.4%) were aged under 15 years and 2,097 (14.2%) were aged over 65 years.*

(2018 Census, Place of Usual Residence 5 years ago, Statistics NZ)

The biggest change expected in household family type projections is an increase in two and one person households. Infrastructure planning is currently based on 2.5 persons per household.

This change in demographic composition is likely to see demand shifts for types and locations of housing, transportation and recreation activities. Changes in demand will also need to be carefully considered when planning future expansions of waste transfer stations and landfill sites, and their associated consenting requirements.

An aging population could increase the demand for alternative forms of transport, transport services within towns, more bus stops, wider footpaths to accommodate more mobility devices, more accessible parking, and improved footpath surfaces. Peak-hour travel could also reduce and off-peak travel increase.

Changing age demographics have varying effects for solid waste. Aged residents and smaller housing units produce less waste but this could be offset by an increase in home-medical waste, such as dialysis bags/tubing and adult incontinence products, and higher density housing. Aged care facilities and retirement complexes may manage their waste without subscribing to Council kerbside services, resulting in a decrease in Councils rating base and a change in waste flows through the Southbrook Resource Recovery Park (SRRP).

An older population, combined with new technology such as E-bikes, is expected to increase the demand for walking and cycling facilities. Other infrastructure requested by older people is more public toilets, additional seating along popular routes and better pathway surfaces in reserves and walkways.

There is a need for housing stock to be intentionally planned to ensure it is appropriate to meet changing demographics. In 2019 Council carried out a survey to inform its Age Friendly Plan. Respondents to this wanted to see a mix of housing types provided to accommodate older people including 'life mark' housing, housing with a mix of shared facilities and private space, more community housing and additional retirement villages in the east of the District.

A substantial assessment was undertaken by Council in 2020 to predict the likely future demand for housing within the District over the next 30 years. This concluded that it was highly likely Council's current modest waiting lists for Housing for the Elderly would increase significantly over time due to increased demand for affordable 1 to 2 bedroom housing units.

The rents for the current units adequately cover the long term cost of owing, operating and replacing the existing stock. The cost of debt servicing the construction of new units, along with operational costs, have in the past made it uneconomic to build new units. However, the current low interest rates go some way to improve the viability of doing this. Funds generated from the sale of seven houses, associated with a historic Rata Foundation grant, are also available for re-investment in a targeted housing activity.

Further work is being progressed in early 2021 to inform Council's future strategy for this service. Strategic questions include 'where should the funds mentioned above be invested, should the Housing for the Elderly stock be expanded or should alternate housing services be developed; should the current housing activity be retained by Council or should alternative models such as transferring ownership or management to a community housing provider be considered?'

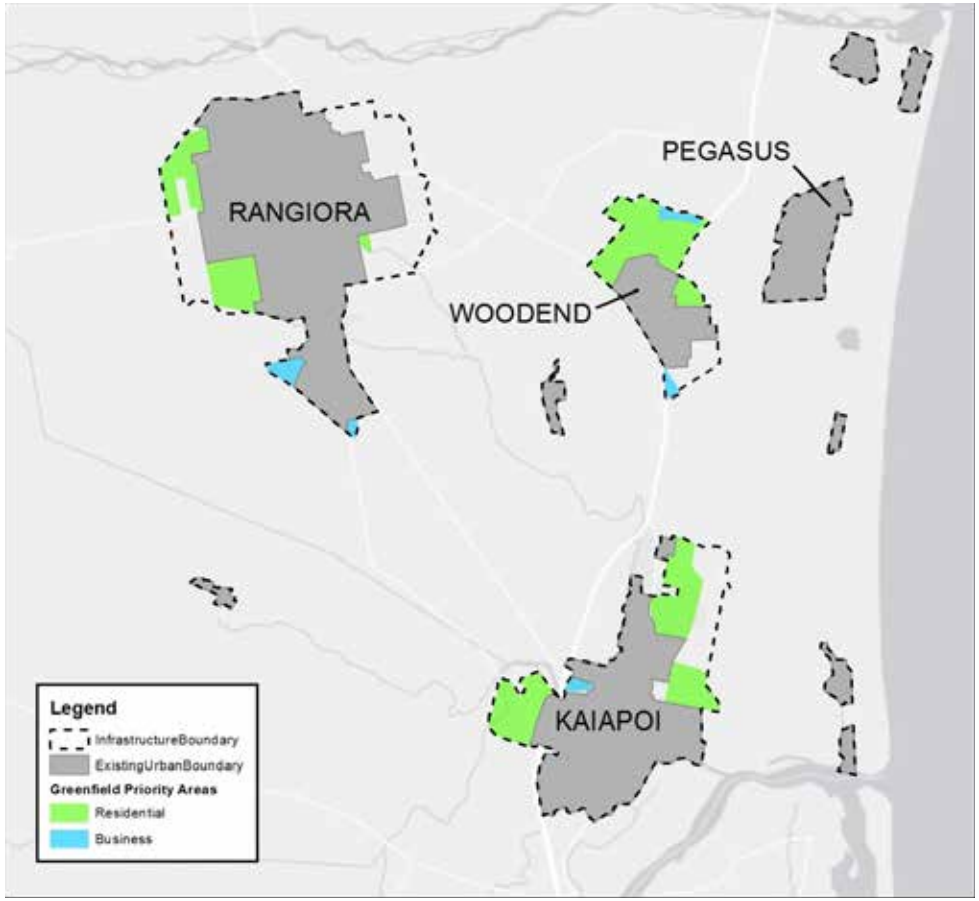
Population distribution

Since the mid to late 1990s, the Council has signalled in its District Plan where the District should expand to cater for growth and in the next thirty years residential and commercial growth is expected to occur predominantly in the priority growth areas depicted in figure 3.3. Infrastructure boundaries have been established around the main towns, and these are set out in the Canterbury Regional Policy Statement 2013.

The areas proposed to grow have been identified and planned for collaboratively in conjunction with Environment Canterbury, Christchurch City, Selwyn District, Ngāi Tahu, the New Zealand Transport Agency and the Canterbury District Health Board through the Greater Christchurch Partnership. This has helped ensure there is a co-ordinated and equitable approach to providing for growth, and has provided more certainty to each council about their infrastructure investment decisions. The Council continues to actively work as part of the Greater Christchurch Partnership, most recently addressing changed planning requirements collaboratively to identify sufficient future housing and business capacity. Council is also working with its partners on the Greater Christchurch 2050 project which looks to reset the vision for greater Christchurch, taking into account a range of factors facing current and future generations.

The priority growth areas, together with existing zoned undeveloped land, provide sufficient capacity to provide for the anticipated population increase over the 30 year planning period. The priority areas may be seen as the first to be 'filled up' but not all land within this boundary is easily serviceable and/or of market appeal and other areas may be more attractive to develop before these.

Figure 3.3 Priority growth areas



In the past 20 years most growth has occurred in Rangiora, Kaiapoi and Woodend and with the building of the new town Pegasus. In the last two years there has been substantial additional urban development in the east of the District at Ravenswood. Recent land use changes also include considerable rural residential development, an increase in the number of small holdings in the rural zone and increased dairying across the District.

During 2016/17 the Council embarked on a phased District Plan Review. This review replaced the rolling review that has been ongoing since the first generation District Plan was made operative in 2005, and is due to be notified in the first quarter of 2021.

As part of this review the *'Our District, Our Future - Waimakariri 2048, District Development Strategy'* adopted by Council in 2018 provides strategic directions and a spatial framework to guide the anticipated growth in the District over the next 30 years. The Strategy confirmed that residential growth is expected to continue to occur predominantly in Rangiora, Woodend/Pegasus, and to the north and west of Kaiapoi over the next 30 years, but recognises constraints to some of these locations.

The proximity of the District to Christchurch City suggests that demand for some form of large block residential properties is likely to continue. The District Development Strategy considered ways to best meet this demand and identified a need to better manage small holdings. Following on from this, in 2019 the Council adopted a Rural Residential Development Strategy that identifies locations for rural residential development, and considers options for rural subdivision. These will be consulted upon as part of the District Plan Review notification process.

Commercial growth is centred in Southbrook with about another 60 hectares of zoned land yet to be developed. Further commercial development is expected in the town centres of Rangiora, Kaiapoi and Pegasus along with new areas to be developed in north Woodend and Kaiapoi adjacent to State Highway 1. These areas are also depicted in figure 3.3 and have been planned for in the Kaiapoi Town Centre Plan and the Rangiora Town Centre Strategy.

Kaiapoi Maori Reserve 873

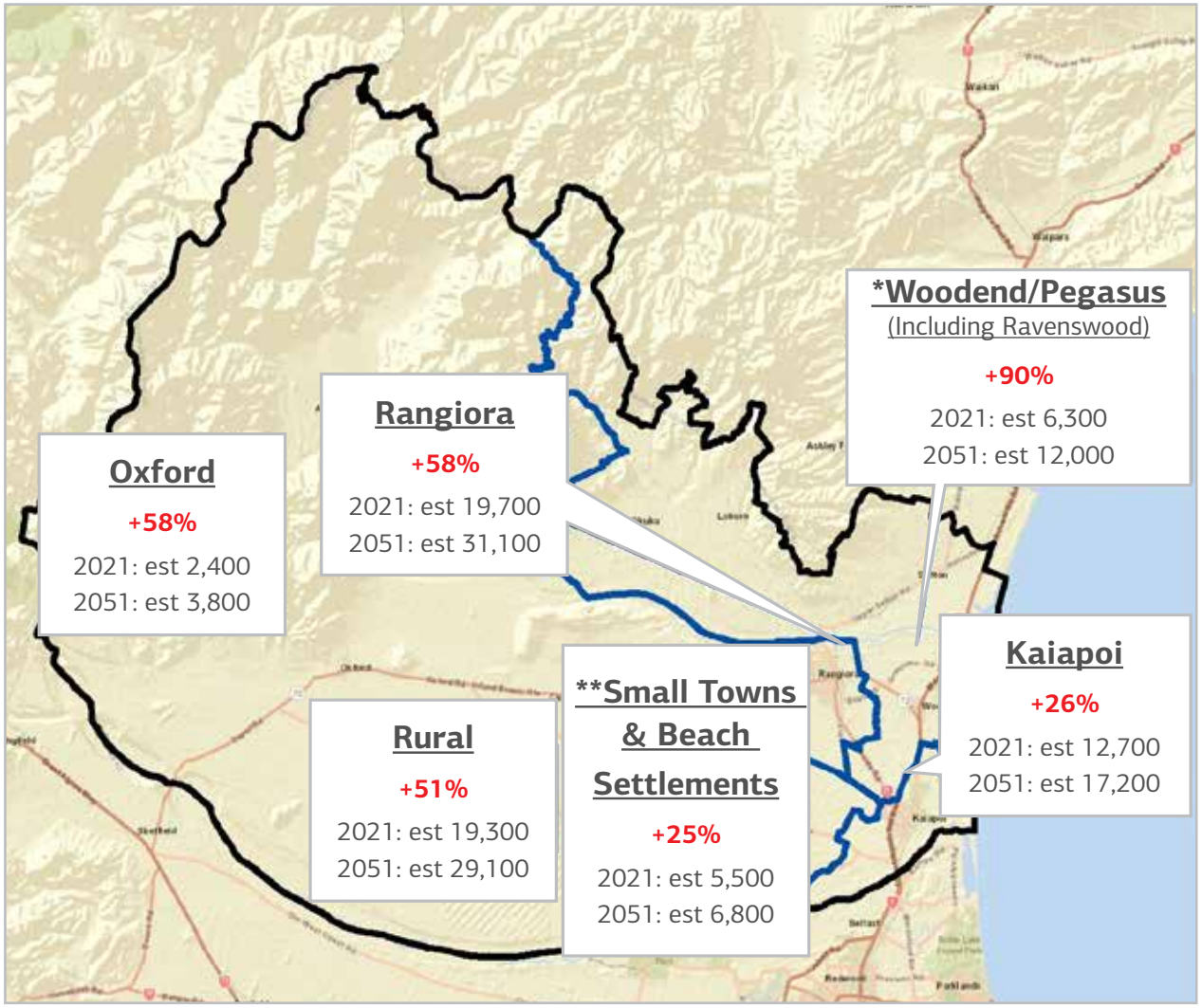
The Tuahiwi Village area, known as Kaiapoi Maori Reserve 873 (MR873) was a Crown Grant to the Ngāi Tūāhuriri people in 1848, following from the Kemps Deed. Today the reserve land totalling 1,056ha is mainly farm land, with Tuahiwi village and the important Tuahiwi Marae at its centre. The land is held in a combination of both Māori and freehold property titles and most of it has been alienated through the acts and omissions of government agencies over more than 150 years.

In recent years the Council has sought to recognise and provide for development rights held by descendants of the original grantees of the land through its District Plan. More housing is a consequence of this along with the associated increase in demand for services and facilities.

Recently the water supply network in the reserve area was extended and its supply made more resilient. Now, aided by $3.6m of 'stimulus funding', Council has agreed to a further extension of the water supply and a significant upgrade and extension to wastewater services to support additional housing.

Figure 3.4 shows the projected population increase for the District from 30 June 2021 (65,900) to 30 June 2051 (100,000) divided into the areas where growth is anticipated.

Figure 3.4 Distribution by town of projected population increase



** Includes Ravenswood*

*** Includes Cust, Ohaka, Mandeville, Waikuku Beach, Woodend Beach, Tuahiwi and Pines Kairaki*

Planning ahead

Confirming where growth should occur has given the Council confidence for major infrastructure investment decisions. In the past 15 years two significant infrastructure projects have exemplified this:

- The construction of the $36m Eastern Districts Sewerage Scheme that connects and treats wastewater from nine eastern towns and communities and disposes of the effluent through a 1.5km long ocean outfall discharge. The Eastern Districts Sewerage Scheme not only has capacity for future growth until 2069, but has also improved the environment by replacing discharges to lowland rivers and streams or disposal onto land.
- A $16m major upgrade of the Rangiora water supply, which includes a new deep artesian water source and in-ground infrastructure.

The Council's commitment over the past 20 years to investing in infrastructure to cater for growth means that for the next thirty years the backbone of the major infrastructure is in place. Future work therefore focuses on 'plugging-in' new growth areas to existing systems.

The Council's infrastructure planning to accommodate future growth has been based on the WDC Corporate Population Scenario - medium/high variant and the projections for the towns are shown in figure 3.4. Modelling has been carried out to identify new works or upgrades that will be required in the future to service this growth, while continuing to meet the agreed levels of service, and these have been incorporated into capital project budgets.

The inherent uncertainty underlying the rate of growth will be managed by carrying out annual reviews. This will enable short term capital planning adjustments to be made in response to changing market requirements, avoiding unnecessary expenditure on growth works before they are actually needed. It will also highlight projects that need to be accelerated because growth is occurring faster than anticipated.

The Council works closely with Environment Canterbury, the regulatory authority for protecting both the availability of water and its quality, to protect the quality of the aquifers that supply water to the majority of the District's inhabitants.

Water source supply is from ample and secure artesian aquifers for Kaiapoi, and deep secure sources for Woodend and Pegasus towns. Kaiapoi source wells are also used to supply Rangiora, via a pressure main from Kaiapoi. Finding additional water to cater for growth for these communities is therefore not seen as a significant issue, although there will be ongoing projects to extend existing well fields.

The adoption and implementation of a revised Water Conservation Strategy in 2020 is aimed at helping Council meet peak water demands. This Strategy includes;

- Incorporation of performance measures for water loss from the system and actual peak day usage
- Establishment of specific protocols to measure leakage
- Establishment of a specific methodology to determine 'reasonable water use'.

A review of the of the Ocean Outfall wastewater network in 2020 concluded sufficient capacity was available until at least 2069. There are also opportunities to extend this with better management of storage and pumping control. Consideration needs to be given to consent renewal before the consent expiry date of 2039.

Four significant wastewater upgrade projects will ensure there is sufficient capacity for growth in both the reticulation and treatment plants until 2038. The Rangiora network upgrade is currently underway and the Kaiapoi network upgrade is planned for 2024. Treatment plant upgrades are planned for Rangiora in 2024 and Woodend in 2029.

The growth modelling included establishing projected increases in the number of properties expected to receive drainage services. However, growth-related works are minimal as nearly all the costs for these fall directly to the developer. This is because infrastructure is required to be constructed in new development areas in a way that ensures any discharge

is treated to the quality standards required by the Regional Council's Land and Water Regional Plan. The discharge rate can also not be greater than what existed before the development.

While car use is declining internationally there is no evidence of this in the Waimakariri District, and any future reduction is likely to be accompanied by a corresponding increase in walking, cycling and use of public transport.

The completion of the Western Belfast By-pass Motorway and the Northern Arterial ensures the District will remain well connected to Christchurch for the duration of this Infrastructure Strategy. These physical works will be complemented by improved modal options such as enhanced public passenger transport infrastructure and services, travel behaviour change programmes and better walking and cycling facilities, both in the District and within Greater Christchurch. A programme of work is also underway to provide alternative route and travel options around the District's key activity centres and better connections to the State Highway network.

Generally, the District's roads and intersections are far from their ultimate capacities and many are unlikely to reach those points in the near future. However, there are some parts of the network that are having difficulty meeting the demand and where growth will put them under strain with longer delays at peak times being more likely in future, or where significant deterioration of the road will be likely to occur. This deterioration is particularly the case where the roads carry a higher than usual proportion of heavy traffic. Reducing congestion on existing roads no longer fit for purpose because of growth will help to ensure safer travel and a number of network improvements are included in this Strategy.

Generally solid waste assets are performing well and meeting the identified levels of service, however, it is anticipated that the expected population growth throughout the District over the coming years will put pressure on existing facilities particularly over peak periods. Two upgrades are planned to ensure there is sufficient capacity for growth in both the SRRP transfer station site and reuse and recycling area until 2039, with the upgrades to the resource recovery park planned for the first three years of the LTP and the pit upgrade planned in two stages between 2021 and 2025. A further expansion of the SRRP is provided for in 2037 through to 2039.

Due to the rebuilding and strengthening of community infrastructure following the 2010-2011 Canterbury earthquakes, the District is very well served with community facilities, apart from in the new eastern growth areas of Pegasus and nearby Ravenswood subdivision. A new community centre is proposed in each of these areas with land purchase for both facilities proposed to begin in 2021. The development of the Pegasus facility is planned for 2024 and the north Woodend facility within the next ten years.

Allowance has also been made in 2040 for a possible expansion of the available indoor court space at the new Mainpower Stadium in Rangiora. Some of the sporting codes planning to use the stadium when it opens in 2021 have already indicated to Council that the four courts provided in the facility will be at capacity and therefore will not be sufficient to cater for population growth or unrelated growth in the sports. Usage levels will be monitored and a review carried out after the first three years of operation.

The Aquatics Facility Strategy has identified a need for a new pool to be developed in the eastern part of the District within the next 15 years to cater for growth. While the Kaiapoi and Rangiora pools were built or rebuilt within the last 15 years, major upgrades are planned for these pools within the next ten and twenty years respectively, both to cater for growth and to ensure the facilities continue to meet community expectations.

The Council recognises that it needs to continually invest in amenity areas within the town centres if they are to remain vibrant and attractive spaces to visit. In this Infrastructure Strategy $21.6m has been set aside to implement the refreshed Rangiora and Kaiapoi town centre strategies, and another $6m to address parking issues in the Rangiora town centre in the first three years of the LTP. This has been topped up by an additional $10m in 2035.

Council's planning contemplates the employment of between 50 and 150 additional office based staff in Rangiora by 2050 to cater for growth in the District and the subsequent increased demand for services. An extension or rebuild of the Council's headquarters is planned for 2028 when the lease of the Farmers building expires.

Summary of Council's Strategic Response

Issue	Council's Response
Predicting level and distribution of growth and using this to inform infrastructure planning	Adopting a corporate growth model, including changing demographic projections, that informs Council decision making Adopting strategies, such as the District Development Strategy, that signal directions for growth and implementing these through the District Plan review Integrating land-use planning and infrastructure provision, especially for transport services, by adopting a multi-modal approach to deliver sustainable solutions Modelling key 3 Water infrastructure networks and implementing water conservation/management strategies to ensure sufficient capacity is available Designing infrastructure on a minimum 50 year planning horizon Preparing/refreshing strategies for community facilities, aquatics, walking and cycling, sportsfields, access and Age Friendly to determine future requirements

3.3 Responding nimbly to a changing operating environment

3.3.1 Covid-19

Key Issue

Continuing to progress the District in an uncertain domestic and international financial environment.

Description

The World Health Organisation declared a pandemic on 11 March 2020 in response to the outbreak of a virus, commonly referred to as Covid-19. The New Zealand Government declared a State of National Emergency on 25 March 2020 and the country was put into lockdown the next day for four weeks. Alert levels were then progressively reduced until they went to level 1 on 9 June 2020. Since then there has been lesser outbreaks requiring changes of alert levels impacting some areas more than others, particularly Auckland. Recent vaccine trials look promising but are some way off being able to be delivered to New Zealand's population as a whole, and in the meantime border restrictions look to remain in place until the end of 2021.

Economists predicted the pandemic would trigger a global recession of a scale not seen since the Great Depression in the 1930's. In response to the high level of financial uncertainty at the time Council revised the draft Annual Plan 2020/21 from a proposed rates increase of 4% to 1.5%, reducing costs, deferring a few capital works in the short term and taking out a loan to cover shortfalls. This short term effect has been addressed in the LTP.

New Zealand's economy is currently stable due in large part to the Government's successful containment of the pandemic within the country to date and its Covid-19 stimulus package. Unemployment in the District at 3.0%[1] has remained similar to pre-Covid-19 levels and other economic predictors such as property sales, and LIM requests have increased. Overall the decline in spending has been much less in Canterbury than some other areas.

[1] *Infometrics Quarterly Monitoring Report*

New Zealand's economy is however vulnerable to changes in international markets and the full extent of the pandemic's impact on these is not yet known. Council is concerned the potential future impacts of Covid-19 could negatively impact residents' ability to pay rates and has signalled it wants to keep rates increases as low as possible in the first three years of its 2021-2031 LTP.

In the 2020/21 Annual Plan some of the capital works in the previous LTP were pushed out to later years to reduce the forecast rates. These deferrals have been re-evaluated during the development of the 2021-2031 LTP. Maintaining affordable rates in the face of Covid-19 has remained a priority, but other factors, such as the Government's stimulus and shovel ready funding, updated population forecasts and the normal evaluation of project priorities associated with LTP development have also been considered.

Table 3.3 shows the capital works in the 2018 IS which are now being carried out at later timeframes but none of these changes are expected to make a material difference to Council achieving its strategic objectives over the longer term. Participation in the Government's Covid-19 response packages has also enabled some stormwater and wastewater projects to be bought forward. While Covid-19 has been a factor in these changes, other reasons are more dominant as outlined in the table.

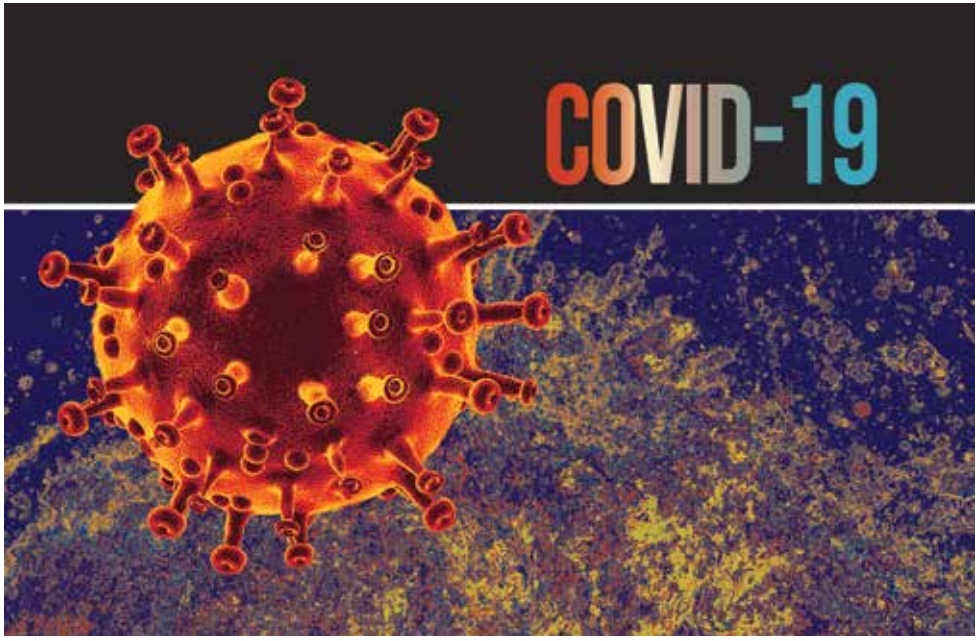


Table 3.3 Project changes 2018-2021 IS

Projects	2018 IS	2021 IS	Reason for Deferral
UV treatment of water supplies	2018-2023	2021-2025	No clarity on legislative changes yet
Woodend wastewater treatment plant upgrade	2025-2027	2029-2031	Latest growth projections have shown this can be delayed and LOS still be maintained
SRRP reuse & recycling area expansion	2018-2023	2021-2023	More realistic delivery timing
Skew Bridge realignment/replacement	2018-2025	2028-2031	Uncertainty over NZTA funding
Rangiora Library extension	2022-2024	2027-2029	Library pushed out to same timeframe as the Rangiora Service Centre upgrade, for synergies/efficiency of a single build programme
NW bypass connecting River and Lehmans Roads	2024-2026	2030-2031	Part of a route upgrade for which other projects have been re-prioritised earlier

Summary of Council's Strategic Response

Issue	Council's Response
Responding to community need arising from the Covid-19 pandemic	Implementing Council's Covid-19 Recovery Plan
Helping to stimulate the District's economy	Participating in Government shovel ready and stimulus programmes
Addressing rates affordability	Keeping rates increases to a minimum by smoothing rates via a combination of loan funding, implementing austerity measures and deferring some infrastructure projects to later years

3.3.2 Changing government priorities and legislative environment

Key Issue

Ensuring infrastructure planning is able to anticipate and respond agilely to external change.

Description

With the change of Government in 2020 comes changes in policy and priorities, including changes to government expectations, requirements and priorities for the delivery of infrastructure. While a number of potential changes have been signalled, the full extent and outcome of these is as yet unknown. Council therefore bases its current planning on known priorities and legislation, but continues to engage in discussions and consultations regarding future options at both a regional and national level. Looking ahead the most likely scenario will require Council to be agile enough to be able to adapt to fast-paced legislative change. This Infrastructure Strategy may need to be reviewed once the full impacts of the following proposed changes are known. Other relevant legislative and regulatory changes that could impact on the provision or management of Council's infrastructure are described in appendix 5.3.

3 Waters Review

In 2019 the Government announced the creation of Taumata Arowai, a new Crown agency to be responsible for regulating drinking water, and providing oversight of, and advice on, the regulation, management and environmental performance of waste water and storm water networks across the country. This agency is expected to commence these responsibilities in 2021 and release a stricter version of the Drinking-water Standards. While financial provision has been made for treatment upgrades in anticipation of changes, the nature of these is subject to confirmation once the new standards are in place, and transition to the new environment is still likely to provide some challenges. The Council intends to continue investing in improvements until Taumata Arowai makes the new requirements clear, but only when there is a regulatory requirement to do so.

The Government has also signalled an intent to broaden the scope of the Water Services Regulator Bill with a further set of reforms. In 2021 all New Zealand local authorities signed a MOU with Central Government to consider the delivery of drinking water and wastewater services by large publicly-owned water entities. The approach to be taken with stormwater services is still being determined. The Government is expecting to make substantive policy decisions relating to the proposed reforms by mid-2021, followed by legislative changes. It is anticipated the Council will need to make a decision about whether it will participate in the new delivery system by the end of the year, after carrying out community consultation. Any transfer of responsibilities and assets from Council to the new water entity is likely to occur from about 2023/24. At the moment the Council is providing detailed information about its assets to the Department of Internal Affairs to help inform the initial discussions. While this brings some opportunities in terms of the funding that has been made available to participate in the first stage of the reforms, it also brings some challenges and uncertainty about the future provision of these services, and where this responsibility will ultimately lie.

One possible outcome of the 3 Waters Reform is that the need for Council office space is reduced to the lower end of the forecast and the project scaled down. Alternatively this could be offset by more rapid population growth than forecast.

The National Policy Statement for Freshwater Management 2020

Changes to the National Policy Statement for Freshwater Management were proposed in 2019 to introduce more stringent freshwater quality standards. This Policy Statement directs regional councils, in consultation with their communities, to set objectives for the state of fresh water bodies in their regions and to set limits on resource use to meet these objectives.

Proposed new requirements would:

- Strengthen Te Mana o Te Wai as the framework for freshwater management
- Better provide for ecosystem health (water, fish and plant life)
- Better protect wetlands and estuaries
- Better manage stormwater and wastewater, and protect sources of drinking water

- Control high-risk farming activities and limit agricultural intensification
- Improve farm management practices.

The requirement for all urban stormwater discharges to be treated before entering any waterway has major implications for the Council as all its urban stormwater discharges flow into streams and rivers. While more recently developed areas of the District have appropriate stormwater treatment and retention ponds in place, all of the areas developed before about 2000 are subject to the new standards.

National Environmental Standard

The National Environmental Standard regulations have recently come into force. This requires the Canterbury Regional Council to define wetland areas within the District. It is expected that limited works will be permitted within these areas, and the ability to farm some of them, as has traditionally occurred, could be in doubt. Council will inevitably be involved in this process however it unfolds.

Canterbury Land and Water Regional Plan

Environment Canterbury's Land and Water Regional Plan requires the Council to take responsibility for the quality of the stormwater discharge from its urban stormwater systems. To this end discharge consents from the Regional Council are required for all of the Councils urban drainage networks. These have been applied for, with the outcome pending, and provisional budgets have been included in each of the relevant scheme budgets totalling $21m.

Consent application draft conditions propose that by 2025 Council will have developed and costed a strategy for meeting water quality standards that will be implemented in the 2025 to 2040 period. Council is partnering with Environment Canterbury, the University of Canterbury, Te Rūnanga O Ngāi Tahu and other Canterbury territorial local authorities to test new technologies to improve water quality in existing urban areas. Some are currently being field trialled with other desk top assessments expected to be trialled before 2025.

Council has also recently obtained a global consent for the ongoing maintenance work it carries out on its rural open drainage network. The global consent takes account of the new regulations in the National Environmental Standards for Freshwater that are associated with the National Policy Statement for Freshwater Management 2020. The Drainage Maintenance Management Plan 2020 associated with the consent signals a more ecological approach to open drain management within the District. Accordingly, drain maintenance practices will increasingly include ecological improvement works such as drain re-shaping, riparian planting, creation of low flow channelling and meanders, and installation of sediment traps. Trials of lower levels of intervention are also planned. Additional funding for these enhancements has been included in the 2021-2031 LTP for projects that were developed under the guidance of the Waimakariri Water Zone Committee.

The Council has a resource consent to discharge effluent from its Eastern District Sewerage Scheme (EDSS) ocean outfall to mid-2039. The process to renew the consent will need to begin well in advance and there is likely to be opposition to the continued discharge to sea. Any changes to consent conditions related to effluent quality may have a significant impact on existing treatment plants. Other than providing additional treatment capacity within the EDSS to cater for growth, this Infrastructure Strategy has not made any provision for increased levels of treatment to effluent, although consideration of this will occur in the lead-up to the consent renewal.

Four treatment plants at Rangiora, Kaiapoi, Woodend and Waikuku Beach discharge treated effluent into the Ocean Outfall pipe. Oxford, Fernside and Loburn Lea communities each have their own treatment plant, and all three discharge to land. As part of the Government's stimulus grant, the Loburn Lea and Fernside schemes will be connected to the Rangiora network and their treatment plants decommissioned.

The Oxford WWTP discharge consent expires in 2031. Possible changes to future discharge consent conditions may necessitate increases in individual sewer rates but no allowance has been made for possible changes.

The Rangiora and Kaiapoi reticulation network upgrades will ensure levels of service are able to be met, particularly with respect to overflow frequency.

The Waste Minimisation Act 2008 Waste Levy

The Ministry for the Environment is proposing an increase to the landfill levy to better reflect the environmental, social and economic costs of waste disposal. The proposed levy will incrementally increase from $10/tonne to $60/tonne by 2023. This will impact Council's solid waste charges as the increased costs will need to be passed onto customers. Proposed new reporting requirements may necessitate some capital works and operational changes at the Oxford Transfer Station and the cleanfill sites in order to capture the required waste data. It is likely that any capital expenditure could be funded from the increased levy funding Council receives. This could also be used to invest in local and regional waste minimisation infrastructure and expanding waste minimisation services in the medium to long term.

Summary of Council's Strategic Response

Issue	Council's Response
Achieving NZ Drinking Water Standards	Completing in 2021 the upgrade of the Poyntzs Road Water Supply thereby ensuring full compliance with the current standards
Making allowance for increasing drinking water standards arising from proposed legislative changes	Making provision in the draft 2021-2031 LTP for upgrades such as UV treatment and chlorination of drinking water supplies as required
Meeting Land and Water Regional Plan requirements for urban stormwater discharge standards by 2025	Securing consents for all urban discharges Assessing the improvement programme (capital, operational, educational) required to improve discharges to waterways and enhance the receiving environment Developing and consulting on a long term plan of work and associated budget provision to give effect to the programme Monitoring and evaluating network and system performance and condition Continuing to work collaboratively with partners, particularly mana whenua, to develop affordable and viable solutions to meet the consent conditions
Meeting expectations that lowland stream environments and groundwater will be protected and enhanced	Working in partnership with the Waimakariri Water Zone Committee to implement the Zone Implementation Programme Addendum (ZIPA) aimed at improving water efficiency and environmental sustainability Including funding in the LTP to support this work
Expectations that higher standards of flood protection will be provided in high rainfall events	Extensive flood modelling work has been completed, and will continue to be refined, to identify at-risk areas, influence where further network upgrades should occur, and inform decisions about future development and building proposals Implementing an ongoing programme of flood improvement works in Ohoka and Rangiora in response to 2014 and 2017 storm events Carrying out a major upgrade of Kaiapoi stormwater systems, utilising shovel-ready funding from the Government

3.3.3 New technology

Key Issue

Identifying the impact changes in technology will have on the way infrastructure is used, and being nimble in adapting management and provision of assets and services in response to this.

Description

Technology can have a large impact on the type and timing of infrastructure required and can assist in delivering services differently. It can be used to increase the effective capacity of infrastructure, reduce maintenance and operating costs, and improve reliability and safety. There can also be big gains in wellbeing when new technology is used to mitigate carbon emissions and improve environmental outcomes.

New technology may create a demand for new infrastructure or redefine how existing infrastructure is used. An example of this is the increasing demand for footpaths to be shared with E scooters and for electric charging stations to be provided for vehicles. In some cases increased access to technology may decrease demand for certain types of infrastructure. The Covid-19 pandemic, for example, fast forwarded Council's flexible working programme and this may change the amount and nature of office space required in the future.

New technology has the potential to change how human settlements look and function in the future, particularly with regard to transport and the viability of town centres. Council makes its plans for infrastructure years ahead and new assets usually plug into existing fixed systems. The challenge is being able to anticipate the changes ahead and proactively adapt to these.

Significant improvements have been made in the last three years in the development of new asset information management systems. An example is the AMIS project that went live in November 2020, achieving an outstanding level of integration and functionality in the Council's Technology One business software. A key benefit of AMIS is that much better asset management information will be able to be collected, enabling smarter long term decisions about assets to be made, and ultimately saving money and improving levels of service. The full benefits are unlikely to be seen until sufficient data has come into the system to allow it to be analysed (in approximately 3 years time).

RFID tags were introduced on waste collection bins in 2018/19 resulting in better management of bins by the contractor, optimised cash flow for the Council, and more equitable levels of service. Solid Waste is moving towards infrastructure as a service (IT) with the SRRP transfer station weighbridge information now being held on a cloud-based database. There are plans to extend this to other sites to enable waste data to be more easily tracked for the Waste Levy.

Consideration is also being given as to how improvements in technology can be used to reduce carbon emissions, for example, replacing some corporate and waste collection fleet vehicles with electric vehicles and installing electric charging stations at the Rangiora Service Centre.

Summary of Council's Strategic Response

Council will continue to keep a watchful eye on changes in technology that improve infrastructure provision and management and utilise these as appropriate.

3.4 Meeting levels of service and community expectations

Key Issue

Continuing to respond to changing community needs and expectations as the population grows, ages and becomes more diverse. This includes the need for services to be affordable for residents 'as a whole'.

Description

While surveys generally show wide spread satisfaction with the services Council provides, levels of service are constantly under pressure from continued growth and increases in community expectations for infrastructure provision. Changing climatic conditions and higher regulatory standards also add to this pressure.

Balancing community expectations and affordability

The Council has capital works, renewal and maintenance programmes in place to ensure agreed levels of service are consistently met and there is no deferred or back log of planned works or maintenance which could impact these.

In recent years the expected standard to which services are provided has increased, particularly in rural residential areas where there is now an expectation that services will be provided to effectively an urban standard. An example of this is the provision of kerbside rubbish collection services to rural residential areas in Ohoka/Mandeville as a result of levels of service consultation carried out for the 2018 Waste Management & Minimisation Plan and Long Term Plan.

There is a need to balance the demand for upgraded services with affordability. In some cases the Council engages with specific communities to ascertain an acceptable balance between providing a higher level of service and the cost of doing so. An example of this is the decision made by Council not to provide an organics collection service in the Ohoka/Mandeville rural residential area, as requested by a small number of residents, as it was not considered to be economically viable.

The employment data in the 2018 Census showed that just under half of the District's residents over 15 years of age were employed full time and nearly half of those who were employed earned less than $30,000pa before tax. At least 44% of Waimakariri households had an annual income of less than $70,000. Affordability could increasingly become an issue in the short term if Covid-19 has more of a negative impact on the economic wellbeing of the District than it has at present, and in the longer term as the population ages and more people end up on fixed incomes.

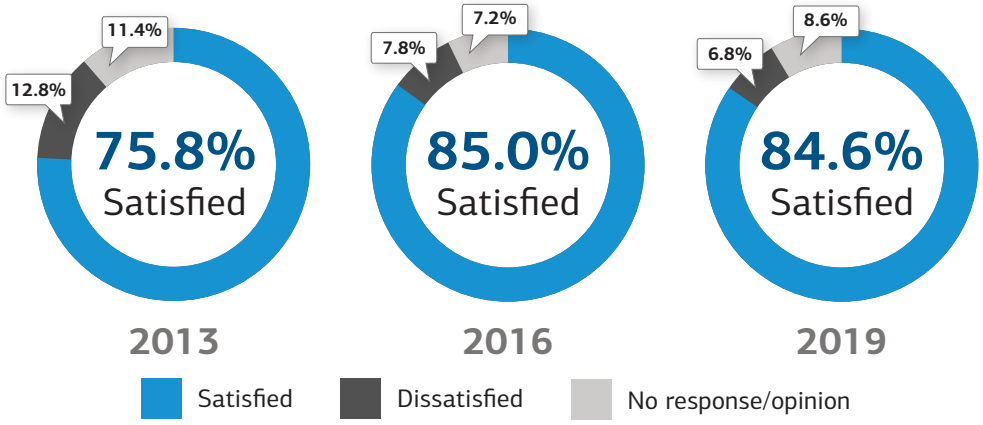
The Council carries out technical investigations and uses a wide range of engagement techniques to ascertain satisfaction with the services it provides and predict future demand. In addition to public feedback and service specific customer surveys, general satisfaction is primarily measured by the Council's Customer Satisfaction Survey. This survey has been run on a triannual basis since 1996, and many of the results have been relatively consistent over time.

Customer Satisfaction Survey

In 2019 the Council surveyed 600 randomly selected households to determine residents' satisfaction with its services and ask what changes, if any, they wanted to see. The methodology used and response rate of 76% ensured the results were statistically representative of the District's population as a whole.

Satisfaction with the Council's overall performance has been consistent over the last two surveys and improved from the 2013 rating when the question was first introduced. Overall dissatisfaction is low. Key messages from the qualitative data about overall performance were about the amount being paid in rates and the need to ensure value for money.

Figure 3.5 2019 Customer Satisfaction Survey - satisfaction with Council's overall performance



Services that stood out for having satisfaction ratings over 90% were Waste Management, Water Supply and Library Services. Other activity areas to receive very high ratings for aspects of the service provided were Wastewater, Roads and Footpaths and Green Space. Lower ratings for services were on the whole associated with a higher non-response rate.

Table 3.4 2019 Customer Satisfaction Survey - satisfaction ratings by activity areas

Activity area	Range of satisfaction	Range of dissatisfaction	Range of no opinion/no response	Aspects of service measured
Solid Waste	98% to 71%	8% to 0.6%	37% to 2%	11
Library Services	94% to 52%	3% to 0.9%	47% to 4%	9
Water Supply	90% to 84%	7% to 1%	12% to 7%	5
Wastewater	85%	1%	14%	1
Roads and Footpaths	84% to 35%	35% to 11%	48% to 5%	12
Green Space	82% to 29%	7% to 0.7%	69% to 16%	8
Stormwater Drainage	76%	12	12	1
Property - Elderly Persons Housing	24.1%	6.8%	69.1%	1

The issues highlighted in the surveys are usually ones the Council is already aware of, and in many cases planning improvements for. Increased satisfaction in subsequent surveys reflects the investments made by Council in these improvements. An example is satisfaction with provision for cycling that has improved by 45% since 2013. This may well be a reflection of the significant capital works programme implemented after the adoption of the Council's Walking & Cycling Strategies in 2011 and 2017. A number of the changes requested by respondents in the 2019 Customer Satisfaction Survey are included in this document as significant capital works.

Proposed changes to levels of service

No major changes to existing levels of service are proposed for the 2021 LTP although water supply levels of service could change as a result of pending legislation as described in this section.

A review of levels of service for water supply was approved by Council in 2020 for inclusion in the Long Term Plan, with changes mostly clarifying and strengthening existing levels of service. Historically, the primary level of service driver has been an ongoing programme of upgrades to achieve compliance with the Drinking-water Standards for New Zealand (DWSNZ)

but these projects have now been completed, apart from the Poyntzs Road upgrade which is due for completion in 2021. Reducing leakage to enable Council to achieve its target level of less than 22% is now a key focus.

Uncertainties about future levels of service and requirements arise from the Three Waters Review and new drinking-water regulator due to come into force in 2021. To prepare for these potential changes, budget provision has been made to install UV treatment on all deep bore water supplies, and chlorination equipment for all supplies not currently chlorinated. The nature of the upgrades required is subject to confirmation once the new regulator and standards are in place.

A District-wide review of waste transfer/recycling services is planned for 2021/22, and the outcomes may well feed into the WMMP review in 2022/23. This may be a catalyst for changes to levels of service at the Oxford Transfer Station. If approved by Council, the Cust recycling drop-off facility may be made a permanent site from July 2021, and the establishment of similar facilities in other areas where people don't have access to kerbside recycling investigated.

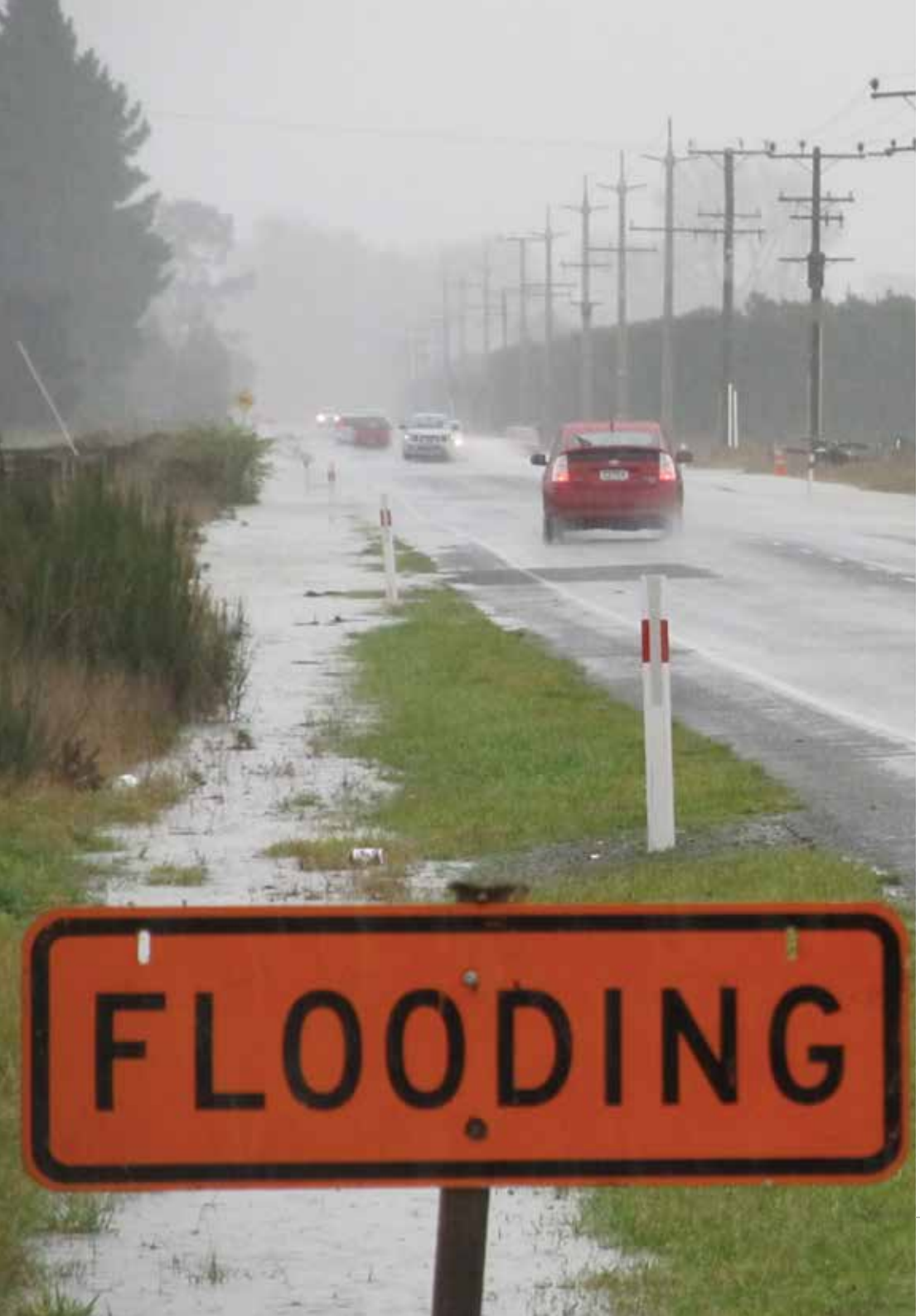
Levels of service were also reviewed for stormwater drainage in 2020 for inclusion in the Long Term Plan and five changes were made to non-mandatory measures. Three were changes made to clarify the level of service and two reduced the targets for stormwater response times to be consistent with road maintenance targets.

Two changes were proposed for wastewater levels of service in the 2020 review. One was a point of clarification but the other was to modify the level of service to exclude issues caused by third parties.

No changes have been made to levels of service for Green Space, Aquatic Centres, Property, Libraries or Roads and Footpaths. However, in 2021 Council plans to consider its future role in providing social housing.

Summary of Council's Strategic Response

Issue	Council's Response
Identifying customer satisfaction with services provided	Carrying out a Customer Satisfaction Survey every 3 years in conjunction with the LTP cycle and feeding results into AMP's Carrying out service specific surveys as required Regularly assessing any gaps between community expectations and services delivered and considering any changes required
Ensuring a whole of life renewal and investment programme is developed and implemented for all infrastructure	Adopting a risk-based renewals policy in conjunction with a 150 year renewal programme that ensures renewal investment occurs when assets are due for renewal Developing a funding strategy to ensure revenues are set at appropriate levels and funding is available to enable the timely renewal of infrastructure, as required. Implementing a risk-based renewal programme taking account of asset condition, performance, criticality and vulnerability of the infrastructure Anticipating potential changes to levels of service arising from legislative changes and making budget provision for these, for example, UV treatment of water supply Delivering annual capital works and renewal programmes as planned Reporting quarterly to Council on performance achieved in meeting agreed levels of service



3.5 Planning for natural hazards and climate change

3.5.1 Natural hazards

Key Issue

Increasing the resilience of Council infrastructure to natural disasters, including the effects of climate change.

Description

Like many places in New Zealand, the Waimakariri District is geographically diverse, reaching from the mountain ranges to the ocean. This makes the District susceptible to a number of possible natural hazards including flooding in lower lying areas, local earthquake faults, and tsunami and liquefaction in areas along the Pegasus Bay coastline. The Alpine Fault poses a major risk for Canterbury and GNS Science assumes there is more than a 30% probability of a magnitude 8.0 rupture occurring within the next 50 years. If this occurs the effects on the region's infrastructure is likely to be significant.

While floods or a tsunami could cause significant damage to Council assets, risk assessments have identified that the greatest damage would be caused by either an Alpine Fault rupture or a major local earthquake. The Council's Risk Assessment and Financing Strategy has therefore been based on the expected worst-case scenario of a major earthquake.

The Council estimates the loss or damage to Council assets, along with the costs to recover from a major earthquake, to be about $218m. As well as incurring a share of the cost, and having prudent insurance arrangements in place, the Council will need to rely on continuing Crown and NZTA funding support. Any Council share of the recovery costs will need to be funded by borrowing, as in the short to medium term, the Council does not anticipate having any significant cash or investment assets available to realise and contribute to a recovery. Accordingly, since 2015 the Council has allowed $84m borrowing head-room in its LTP to cater for a significant natural

hazard event. This amount still allows Council to live within its Treasury and Borrowing Policy limits although debt comes close to the self-imposed limits during the first four years of the LTP. If a significant disaster occurs within this period the Council could cancel and postpone programmes to later years when the repayment programme brings debts back to well within the limits.

The Risk Assessment and Financing Strategy considers the unlikely, but possible, scenario where because of another major natural disaster in the country, or insurance region, insurance cover may not be in place when a major earthquake event occurs that seriously impacts the District. In this instance the Council's share of recovery costs would be about $104m. The shortfall between borrowing headroom and recovery costs means the Council will need to undertake a prioritisation process for recovery. Council's current strategy is to restore most infrastructure assets and all its highest priority community facilities, such as town halls, libraries and aquatic facilities, but assess the repair of lower priority assets against the funds available, desired levels of service, and the District's future needs.

The 2010/2011 Canterbury earthquake series has enabled the Council to have a good understanding of how its assets will perform in a major earthquake event. Much of the $139m recovery spend has been invested into strengthening buildings to higher standards and improving the resilience of assets in any future events. It is expected that all pipes at risk from earthquake in liquefiable ground will have been replaced by 2030.

While damage to infrastructure and buildings poses huge public and private costs, the impact on wellbeing can have the most profound effect. Some of the flow-on effects from the Canterbury earthquakes, for example, were disruption to business and employment, psychological trauma, dislocation of communities, creation or exacerbation of social issues, disruption to normal lives, and uncertainty in the future.

Many of the risks the District faces now and into the future can be readily identified. However, some such as those posed by climate change are becoming increasingly complex and uncertain. Resilience is a key factor in successfully negotiating this uncertain future environment.

Resilience Defined

The ability to anticipate and resist the effects of a disruptive event, minimise adverse impacts, respond effectively post-event, maintain or recover functionality, and adapt in a way that allows for learning and thriving.

The 2019 National Disaster Resilience Strategy sets out the following three priorities to improve New Zealand's resilience to disasters:

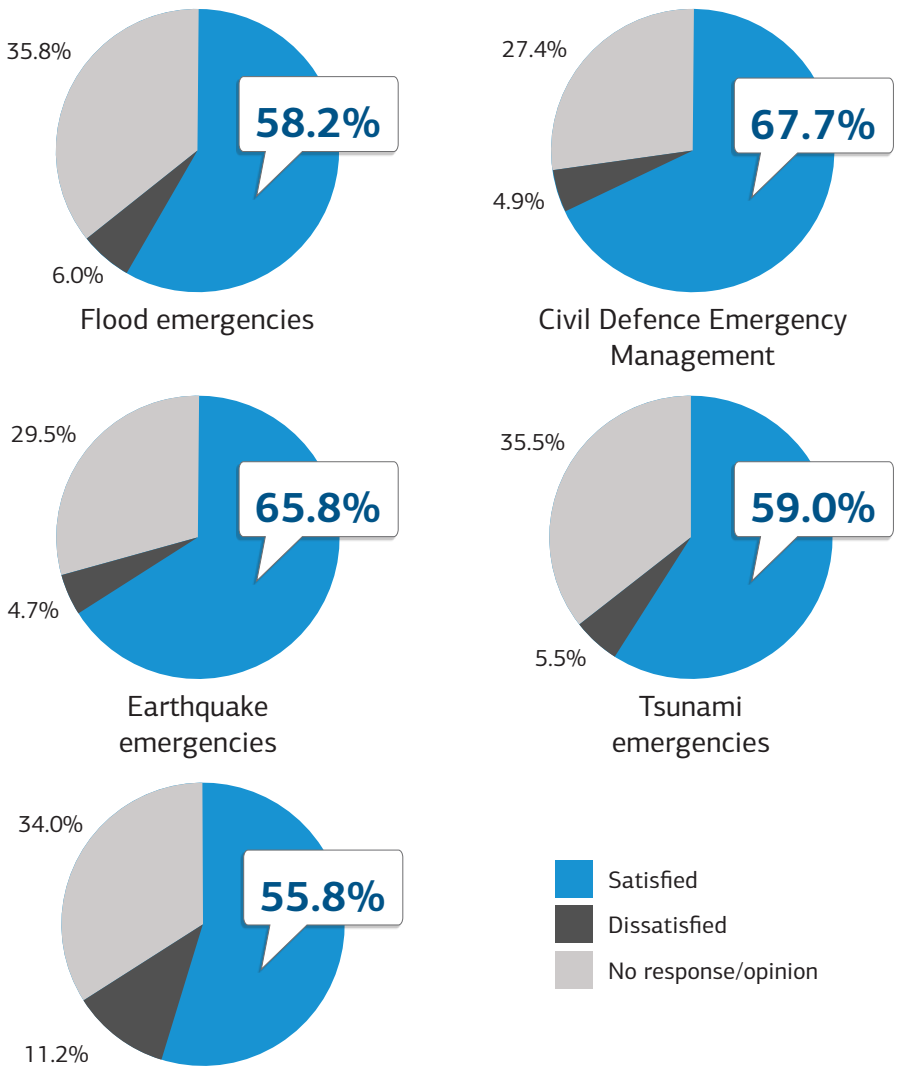
- Managing risks
- Effective response to and recovery from emergencies
- Enabling, empowering, and supporting community resilience

The Council's Civil Defence Emergency Management Unit is responsible for responding to emergencies. This Strategy is primarily concerned about managing risks by identifying and minimising these and limiting the impacts on infrastructure if hazards occur. Enabling, empowering, and supporting community resilience is a cross-Council function.

Figure 3.6 shows there is very little community dissatisfaction with the Council's Civil Defence Emergency Management and natural hazards planning, although there is room for improvement in raising community awareness. The Council has established an additional Communications and Engagement Advisor role in anticipation of the need to further engage with the public about natural hazards and climate change in 2021.

Risks specific to activity areas are outlined in appendix 5.2.

Figure 3.6 2019 Customer Satisfaction Survey - satisfaction with CDEM and natural hazards planning



3.5.2 Climate change

Key Issue

Responding to climate change challenges in a way that ensures the long-term wellbeing, sustainability and resilience of the District's communities and businesses.

Description

Greenhouse gas emissions are causing significant changes to the Earth's oceans, atmosphere and climate which are expected to be very long-lasting and in some cases, irreversible. These changes have wide-ranging consequences for New Zealand's culture, economy, infrastructure, coasts and indigenous biodiversity. The scale and impact of both adaptation and mitigation on people and business has little precedent; and while climate change affects everyone, the most vulnerable people are the most exposed.

Climate Change Defined

Climate is a statistical description of weather in terms of the mean and variability of relevant quantities over a period of time. A change in these patterns that persists for an extended period, typically decades or longer, is referred to as climate change.

Climate change effects for New Zealand for the next 100 years have been predicted by NIWI with some degree of certainty. However, good information about the cumulative and cascading effects of climate change is lacking. Further to this, the Intergovernmental Panel on Climate Change (IPCC) states that *'continued emissions of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems. Limiting climate change would require substantial and sustained reductions in greenhouse gas emissions which, together with adaptation, can limit climate change risks.'*

Both the World Bank and the New Zealand Treasury have warned that the longer reducing emissions is delayed, the harder and more expensive it will be to mitigate and adapt, and that while mitigation involves risks, those risks are not as great as those from a changing climate.

In 2015 New Zealand was one of 200 countries which signed up to the Paris Agreement to limit global warming this century to between 1.5 and 2 degrees Celsius above pre-industrial levels. Following this the government passed the *Climate Change Response (Zero Carbon) Amendment Act 2019* which set into law a new 2050 domestic target of net zero emissions of all greenhouse gases other than biogenic methane by 2050. A Managed Retreat and Climate Change Adaption Act is proposed in 2022 which is expected to empower local authorities to deal with managed retreat, including the ability to change established land use; provide funding mechanisms for adaptation and options for transition and compensation; and clarify issues of risk and insurance.

A Canterbury Regional Climate Change Steering Group was established in 2019, under the Mayoral Forum. Environment Canterbury supports the Regional Climate Change Working Group which co-ordinates the region's climate change response and reports to the Steering Group. The Regional Natural Hazards Working Group, which reports to the Policy Forum, also has a role to play in co-ordinating climate change adaptation efforts. The Waimakariri District Council is represented on all three of these groups. Through the Canterbury Mayoral Forum all Canterbury Councils have contributed to an initial climate change risk screening to enable the climate change risks and opportunities for Canterbury to be better understood and this is being followed up with a more in-depth risk assessment due mid-2021. During 2021 a Canterbury-wide engagement programme will be run to raise community awareness of climate change.

Since 2018 Council has prepared an annual stocktake of its corporate climate change response. The Council's District-wide flood model, incorporating the effects of a 1m sea level rise, has also been updated.

In 2020 the Council adopted a Climate Change Policy as an initial statement to inform Council's role in climate change mitigation and adaptation and this will be implemented through actions contained within a Climate Change Response Strategy to be developed in early 2021. Policy objectives are to:

- Enhance the Council's preparedness to respond to climate change challenges in an appropriate, co-ordinated, timely, cost-effective, and equitable way.
- Enable the Council to provide transformational leadership that will ensure the long-term wellbeing, sustainability and resilience of the District's communities and businesses.
- Provide for a planned approach to mitigating and reducing emissions, including minimising activities, that contribute to climate change.
- Work collaboratively with the community and other organisations to adaptively plan for, and increase resilience to, climate change effects on the District's social, cultural, environmental and economic wellbeing.

A Waimakariri Climate Change Scenario is currently being prepared to inform the Climate Change Response Strategy. This scenario is based on a 2020 NIWI report commissioned by Environment Canterbury called *"Climate Change projections for the Canterbury Region' and the Intergovernmental Panel on Climate*

General Effects of Climate Change

Coastal changes - sea level rise and associated ground water rises, increased frequency and intensity of storm surges and wave impacts, and changes in the dominant direction of waves

Temperature - increased temperatures, particularly during winter, fewer frost days, increased frequency and intensity of heat waves, and extended periods of drought

Rainfall, flooding and snow - more intense rain falling less frequently, more frequent very heavy rainfall events, significant decreases in seasonal snows, increased flows in the large alpine-fed rivers such as the Waimakariri River and more severe winter flooding events, particularly in these rivers. Less rain falling in the east affecting groundwater recharge and foothills-fed rivers such as the Ashley-Rakahuri River

Winds – increased frequency of extreme winds in winter and dry westerly winds and greater frequency and intensity of storms

Change (IPCC) RCP8.5 business as usual scenario", which the IPCC reports is currently tracking as the most likely scenario. As climatic conditions vary so widely across the Canterbury region, climate maps contained within the NIWI report have been extrapolated for the District and once analysed will allow Council to more clearly identify likely climate change effects.

All infrastructure planning and reviewed District Plan rules are based on the IPCC 8.5 RCP scenario and NIWI's sea level rise predictions of 0.5m in 50 years and 1 metre in 100 years and it is unlikely that the Waimakariri Climate Change Scenario will impact on this. More detailed knowledge of local effects will however, allow a more targeted approach to be taken in the Response Strategy.

A large part of the District's built-up environment is located on flood plain and this makes it vulnerable to significant flood events. Climate change is likely to impact sea levels, ground water levels, rainfall, temperatures and biodiversity within the District, among other things. In particular, rain events significant enough to cause flooding are likely to increase in intensity and frequency, making drainage systems near the coast problematic. Detailed flood modelling has been undertaken in the past three years to help inform where future development should occur and identify the potential effects of large flood events on Council infrastructure.

The Council's engineering practices now ensure all new and replaced assets are built to standards that take account of known risk factors, and are designed for resilience. Climate change effects have been factored into infrastructure sizing, particularly new stormwater pipes, to take account of intense rainfall events.

Flood mitigation works were carried out across the District following the 2014 flood event and the Government's stimulus package has enabled earlier progress to be made on resolving stormwater issues in Kaiapoi than previously planned. Once completed, the reticulation upgrades in Rangiora and Kaiapoi will also reduce the frequency of wastewater overflows in wet weather events. These measures, along with proposed new District Plan rules for floor levels and hazard zones will help to increase resilience to flood events.

Summary of Council's Strategic Response

Issue	Council's Response
Maintaining financial capacity to recover from a major natural disaster	Adopting a Risk Assessment and Financing Strategy estimating the financial impact of a major natural disaster and determining how recovery can be funded Providing financial 'head-room' in the Council's borrowing policy so that the Council can fund recovery, even in the unlikely event insurance is not available, and still live within borrowing limits Maintaining comprehensive insurance arrangements
Adopting a risk-based renewals and investment strategy	Ensuring renewals investment is prioritised to the most vulnerable and critical infrastructure so that the overall resilience of the infrastructure networks is continually enhanced Ensuring all council-owned buildings are maintained to a minimum of 67% of the New Building Standard for earthquake resilience
Identifying climate change and natural hazard risks	Preparing an annual stocktake of Council's climate change issues and response Refining comprehensive flooding modelling carried out to assess potential flood impacts and where further land development should occur Incorporating results from flood and reticulation network modelling into AMP's and the District Plan Review Completing and consulting on natural hazards risk assessment in 2020 as part of the District Plan review Carrying out risk assessments for essential infrastructure
Setting a strategic framework in place for climate change mitigation and adaptation	Adopting a Sustainability Strategy in 2020 Adopting a Climate Change Policy in 2020 Developing a WDC Climate Change Scenario in 2020/21 Developing a Climate Change Response Strategy in 2021 Developing a community based sustainability strategy in 2021/22

Issue	Council's Response
Mitigating climate change	(Covered in section 3.6)
Increasing the resilience of Council infrastructure and the wider community to natural disasters and climate change	Adopting design and modelling standards for infrastructure that reflect the latest climate change predictions, such as rainfall patterns, and enable infrastructure to be built using resilient materials and best-practice technologies Allowing for the implications of sea level rise and changing weather patterns in asset management planning Making appropriate District Plan provisions in relation to known active faults, flooding and sea level rise
Increasing governance and collaboration	Participating in national and regional climate change forums to influence and ensure best-practice is developed and implemented Participating in the Regional Natural Hazards Working Group Utilising a Climate Change Coordination Group to ensure climate change response efforts are co-ordinated across Council

3.6 Transitioning to a sustainable future

Key Issue

Ensuring infrastructure provision, replacement and management is a key part of creating a sustainable and resilient future for the District.

Description

Community wellbeing and the environment are intrinsically linked, for in order for people to prosper the environment must prosper. Loss of biodiversity and environmental degradation is occurring at such an extent that the life-supporting capacity of ecosystems has now become threatened.

Sustainability Defined

Sustainability refers to the quality of a state or process that allows it to be maintained indefinitely. In the context of this Strategy it is about achieving wellbeing in the present while living within the carrying capacity of supporting ecosystems, and not compromising the ability of future generations to meet their own needs

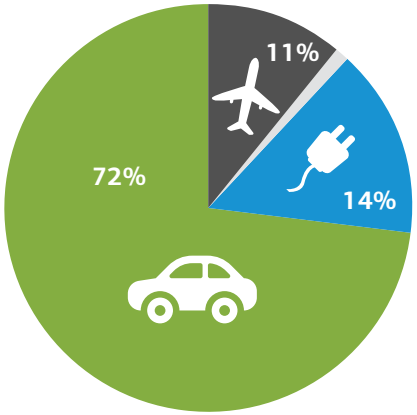
Caring for natural resources and putting the environment at the heart of decision making is an essential part of mitigating climate change. As the national economy and businesses shift towards a low-emissions future by 2050, an emissions-rich business-as-usual culture is becoming increasingly undesirable. The United Nations has highlighted the need for urgent

investments in climate action as part of Covid-19 recovery, stating that *"a truly green recovery from the pandemic can take a huge slice out of greenhouse gas emissions and slow climate change. Recognising that nature is at the heart of our economy and the way we do business will be key to our successful recovery."*

Corporate Emissions

In the 2017/18 financial year the Council carried out a greenhouse gas emissions inventory in order to understand its corporate emissions profile, and to provide a base year for tracking future emissions. The total corporate emissions for that year were calculated as being 507 tonnes of CO2-e. The major contributing sources were vehicle travel (363 tonnes), electricity (73 tonnes) and air travel (56 tonnes).

Figure 3.7 Corporate emissions by source



Emissions reduction targets will be developed in 2021 and a dashboard system will be used to allow real-time (monthly) in-house and District emissions data, plus energy, water and waste data, to be recorded and reported.

Sustainability Strategy

In 2019 the Council adopted a 2018-2048 Corporate Sustainability Strategy and in doing so, made a commitment to reducing its environmental impact by finding practical and innovative solutions to mitigating emissions, managing waste and developing a culture which embraces sustainability 'as something we just do'.

Council's Vision for Sustainability

'Investing in a sustainable and resilient future for our people, our businesses, our infrastructure and our environment by taking responsibility and showing leadership.'

The Strategy's broad statement of intent was followed up in 2020 by an Organisational Sustainability Strategy and Action Plan. This plan considered existing practices for a wider range of Council business including wastewater treatment plants, libraries, swimming pools and forestry and included 33 actions to be implemented. Progress on these is monitored on a quarterly basis.

The Council's 2019 Sustainability Strategy and 2020 Action Plan broadly align with the 2030 United Nations Sustainable Development Goals which have been incorporated into the 2021-2031 LTP. They also complement parallel work streams within the organisation including climate change mitigation and adaptation, natural hazards, biodiversity enhancement, procurement and wellbeing.

In the 2021/22 financial year the Council plans to develop a community-based sustainability strategy.

Procurement Strategy

In 2019 the Council adopted a Procurement Policy and Strategy after a review of its procurement practice. These documents include sustainable procurement principles that require Council to assess whole of life social, economic and environmental impacts of the goods and services it procures.

Further work needs to be done to identify how Council's carbon footprint can be reduced in the procurement, construction and management of infrastructure. This includes giving Asset Managers the tools to measure the carbon footprints of proposed projects prior to procurement. Going forward new infrastructure needs to be as efficient and sustainable as possible, utilising low-energy solutions and minimising the amount of embodied carbon in the materials used.

The Procurement Strategy is expected to take three years to implement with the following tasks aimed at improving the sustainability of the supply chain to be completed within the next two years:

- Develop Supply Chain Sustainability Policy
- Review procurement processes and policies to ensure supply chain sustainability is reflected
- Review Council's operating expenditure to understand opportunities for improvements in sustainability
- Amend sourcing documentation to encourage sustainability within the supply chain.

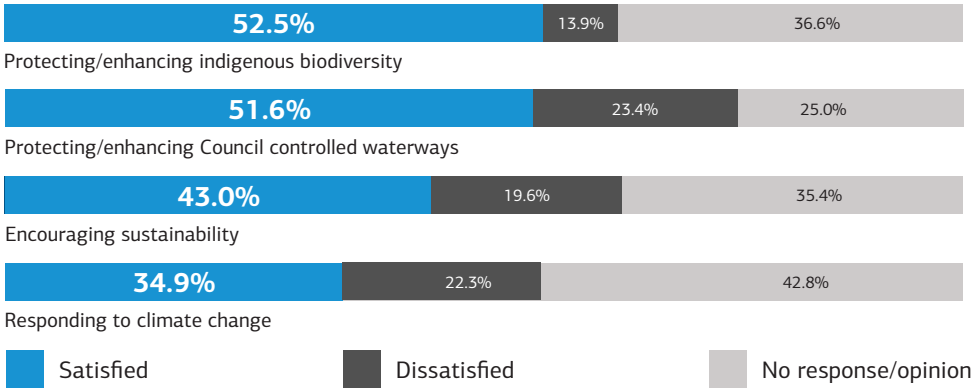
In the interim sustainability is being considered on a case-by-case basis in the tenders being released by Council. The Council's new Climate Change Policy will also help to drive changes in the way infrastructure is procured and managed in the future.

Environment Strategy

Green infrastructure solutions such as swales, stormwater retention basins and naturalised drainage systems are increasingly being used to manage flooding better and have the added benefit of helping to reduce greenhouse gases. The District's reserves, street trees, forestry, wetlands and waterways also have a significant role to play in providing a more sustainable environment.

Figure 3.8 shows a higher level of dissatisfaction with Council's environmental management than many other services and a cross-Council approach is being taken to improve efforts in this area.

Figure 3.8 2019 Customer Satisfaction Survey - satisfaction with environmental management



An Environment Strategy is being developed in 2021 to provide strategic vision and direction for Council's environmental enhancement and biodiversity efforts. New biodiversity projects are also included in this Infrastructure Strategy, such as the provision of $1.1m over the next ten years for the Arohatia te Awa programme of works to enhance the Cam River, and an additional $5m over 30 years for waterway enhancement projects identified in the Zone Implementation Programme Addendum (ZIPA).

Summary of Council's Strategic Response

Issue	Council's Response
Measuring and monitoring greenhouse gas emissions	Undertaking regular emission assessments, utilising the 2017/18 base-line assessment to enable the Council to set emissions targets and assess progress
Reducing the organisation's carbon footprint	Reviewing the adopted Corporate Sustainability Strategy and ensuring action plans are implemented Implementing initiatives to embed sustainability practices in the organisation such as sustainable purchasing policies and practices, flexible working policies and investigating sustainable energy efficiency opportunities Investigating opportunities for turning low-return forestry areas into natural habitats and carbon sinks
Developing a more sustainable District	Developing a community-based sustainability strategy in 2021/22 Introducing and maintaining sustainable solutions such as kerbside recycling, electric vehicle charging stations, and enabling and encouraging alternative transport modes such as public transport, cycling and walking Implementing education programmes for schools and the community that increase awareness and promote opportunities to be more sustainable
Addressing environmental degradation	Developing an Environment Strategy Maintaining specialist biodiversity capacity to advise on best practice and lead environmentally focused projects Ensuring adequate funding is provided for biodiversity and waterway enhancement
Improving the health and capacity of waterways	Committing funding to support the Arohatia te Awa programme of work Partnering with Ngāi Tūāhuriri to ensure cultural values are understood and respected in managing and improving District waterways Working closely with Environment Canterbury and mana whenua regarding the allocation of groundwater to ensure there is adequate resource Investigating and addressing risks to 3 Waters infrastructure from climate change and natural hazards Improving stormwater discharges Taking a long term view of the risks associated with wastewater treatment plant discharge consents

3.7 Renewing infrastructure in a timely manner

Key Issue

Ensuring replacements are able to be fully funded with no deferred maintenance issues.

Description

As a fast growing District a large proportion of the infrastructure has been installed within the last thirty years. The majority of it is therefore relatively new with the average age of 3 Water systems being less than 25 years old. As most of this infrastructure is expected to last for between 80 and 100 years, much of the renewals do not fall due until the 21st century and the first part of the next century. A key exception is the roading and footpaths activity which requires ongoing comprehensive maintenance such as resurfacing and rehabilitation which has been planned for in LTP budgets.

The Council has modelled its infrastructure and developed a renewal programme that stretches over the next 150 years. A risk-based model is used to inform these renewal investment decisions. This model incorporates the following criteria to establish a relative likelihood and consequence of failure:

- Condition rating (includes CCTV survey data)
- Burst and blockage history
- Seismic vulnerability to liquefaction
- Asset criticality.

Improvements have been made to the Council's risk-based renewals model, so that different levels of acceptable risk can be applied to the various categories of criticality. While the model allows for highly critical assets to be renewed before 85% of their expected life, the lowest criticality assets may not be replaced until 120% of their expected life. Based on these risk profiles the model provides a prioritised list of pipe renewals needed across

the District, identified by scheme, which Asset Managers assess and adjust to factor in any operational benefits of renewal, including co-ordinating with other works planned in the same corridor to limit disruption.

Figure 3.9 Combined 150 year replacement cost forecast (in 2020 $)

The model provides an annual expenditure profile and identifies the annual revenue required to enable this renewals expenditure to be made without the renewals fund falling into debt. The implementation of InfoAsset Manager to manage and analysis CCTV pipe inspection data will improve the modelling of pipe renewals by allowing the remaining life of the assets to be adjusted.

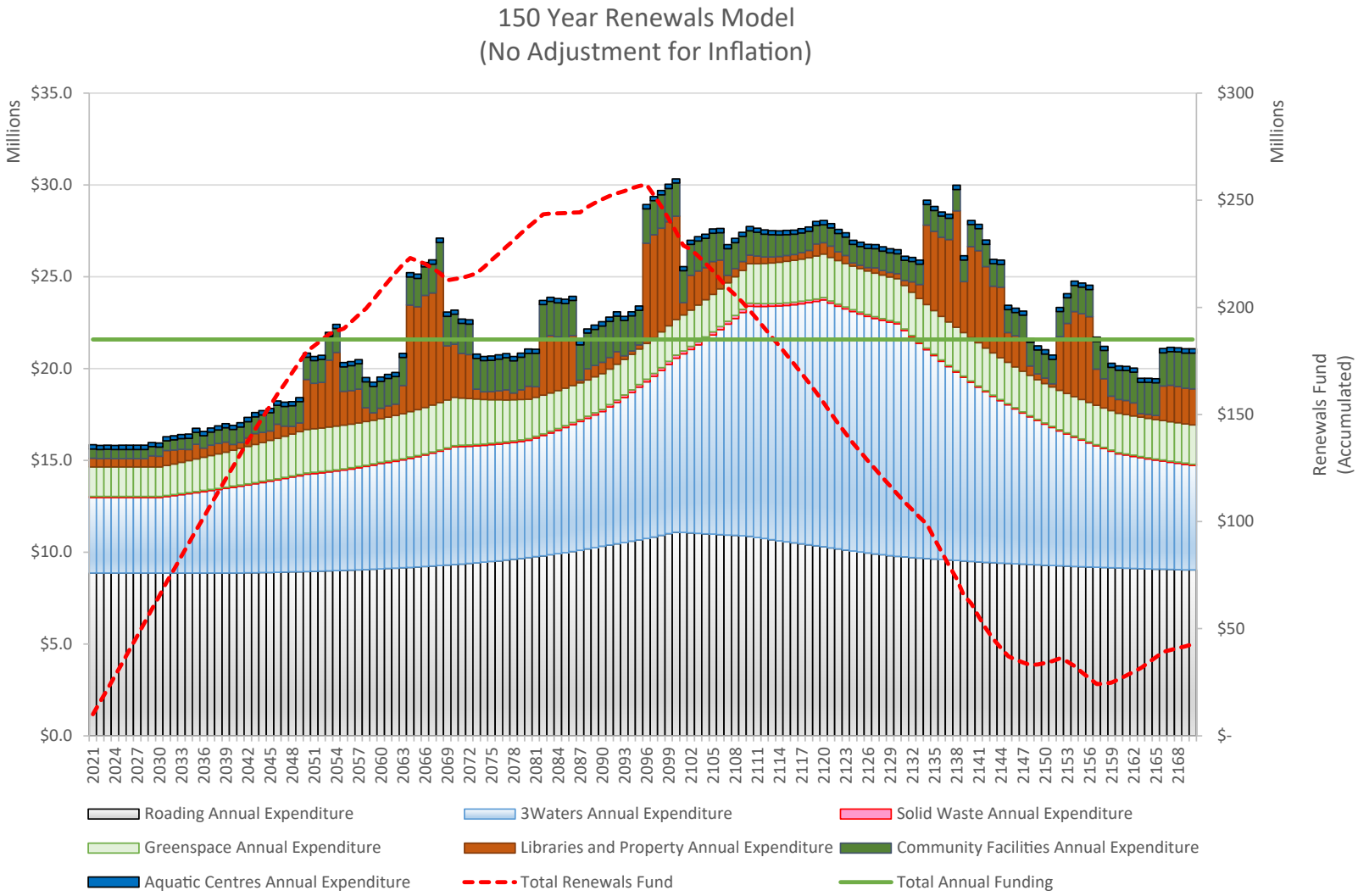


Figure 3.9 shows the annual expenditure required for the next 150 years to replace the assets covered by this Strategy in relation to the accumulated renewals fund. The vertical bars show the expected combined annual renewals expenditure through to 2166. The renewal programme starts to significantly accelerate from 2050 and then there is a steady rise until about 2123. This is because most of the below ground assets in the District have been built over a relatively short space of time and will therefore reach the end of their lives over a similarly short space of time, in about 100 years' time.

The amount of annual expenditure, which has been smoothed, can be read against the left hand axis of the graph. The green line is also read against the left hand axis. This represents the recommended average annual amount of funding that needs to be put away into a dedicated fund to ensure that money is available to meet the demands of the peak expenditure, without the fund going into debt or maintenance being deferred. The red line is read against the right hand axis and shows the total value of the fund over the 150 year period.

The graph demonstrates how the renewal programme is able to be financed from depreciation reserves, built up in early years. The reserve fund in the outer years from 2050 will be required to fund $25-$30m per annum of the replacement programme. Peak expenditure is forecast to be nearly 2.3 times the current renewals expenditure. At its lowest point the accumulated reserve fund will be about $25m. This graph displays the importance of establishing sufficient depreciation replacement funds now to ensure current levels of service are still affordable enough to continue to be provided for future generations.

Table 3.5 shows the renewals expenditure included in the 2021 LTP for the next ten years. Community facilities renewal expenditure has increased from $515,000 over ten years to $3m, and Aquatics from $500,000 over ten years to $2.1m. This is in response to deficiencies identified in the improved asset capture and condition assessment recently carried out for Green Space and Aquatics.

Table 3.5 2021–2031 LTP renewal expenditure

Activity Area	Renewal Expenditure 2021-2031
Water Supply	$16m
Wastewater	$20.5m
Stormwater	$0.5m
Roading and Footpaths	$65m
Solid Waste	$0.9m
Green Space	
Reserves	$11.5m
Community Facilities	$3m
Public Toilets	$1.5m
Aquatics	$2.1m
Property	$4.5m

Significant projects with renewals components in the first three years of the LTP are the stimulus package of works, Eastern District wastewater network upgrades, Southbrook Resource Recovery Park pit and access upgrades, Rangiora town centre parking and Kaiapoi town centre improvements.

Significant renewals projects programmed for the latter half of the LTP period are the Skew Bridge replacement, general town centre development and Kaiapoi Aquatic Centre upgrade.

Further implementation of town centre strategies is planned for 2035, and in 2040 the Dudley Park Aquatic Centre in Rangiora is programmed for an upgrade and the Old Waimakariri Bridge is due for replacement.

Detailed information about activity specific asset condition and performance is included in section 5.1 of this document.

3.8 Service delivery

S17A Reviews

The Council maintains a schedule of S17A reviews to ensure the cost-effectiveness of its infrastructure service delivery and carries out these reviews in accordance with the requirements of the *Local Government Act 2002* (section 17A).

Capital works

Delivery of most capital works is via competitive tendering practice in accordance with the Council's Procurement Policy. Design is usually carried out in-house, or where resources are insufficient, via external consultants, again engaged in accordance with the Procurement Policy.

Maintenance

Routine maintenance for water supply and wastewater is carried out by the Council's in-house Water Unit and a service level agreement (SLA) has recently been signed to better define the relationship between 3 Waters Asset Managers and the Water Unit, and provide a mechanism for measuring performance. An SLA is also planned between the 3 Waters Unit and the Asset Information Management Team.

Routine maintenance of the rural drainage network is carried out via a long term contract, competitively tendered at the end of its term. The contract is included as a component of the district-wide roading maintenance contract to allow more emphasis to be placed on planned maintenance.

Urban drainage is divided between roading and drainage assets according to a set of ownership rules. The drainage assets are maintained under the Green Space maintenance contract, and the roading assets under the roading maintenance contract.

Solid Waste contracts for the provision of kerbside collection services and facilities operations and maintenance are carried out via a long term contract, competitively tendered at the end of its term. These contracts were tendered in 2018 and commenced in July 2019. Maintenance of the kerbside bins is the responsibility of the collection contractor, who will own the bins until the end of the contract term. The service to supply and deliver Council-branded rubbish bags to retail outlets, including Council service centres, will be competitively tendered in 2021.

Routine site maintenance at the two waste transfer facilities is generally carried out by Council's Solid Waste Contractors as specified in the Solid Waste Contracts, with infrastructure maintenance undertaken by contractors from the Council's Trades Supplier Panel. Maintenance at other sites is carried out by the Council's road maintenance contractors, contractors from the Council's Trades Supplier Panel, or lessees (where applicable).

Maintenance of roading assets is carried out through two competitively tendered contracts, both of which were let for a three year period, with two further one year extensions subject to suitable performance (5 years in total).

Road maintenance activities are delivered under the new road maintenance contract which commenced in November 2020. This contractor also carries out some renewal and

improvement works as specified in their contract, while the remainder is competitively tendered.

Carriageway lighting maintenance and all associated renewal and improvement works are carried out by another contractor under a contract that started in April 2019.

Maintenance of the Greenspace parks and reserves and trees is carried out under two separate contracts which are competitively tendered at the end of each term. These contracts include both planned and reactive maintenance to ensure levels of service are maintained across the District.

Cleaning of community facilities and exterior building maintenance is included within Council-wide contracts for these services which are competitively tendered at the end of each term.

While routine minor plant maintenance is carried out in house, contractors from the Council's Trades Supplier Panel carry out larger complicated plant and site maintenance tasks at the four aquatic facilities.

Routine and annual maintenance of library facilities is carried out via approved Council contractors. The contract for the most recent capital improvement (new HVAC system in the Rangiora Library) was project managed by an approved Council contractor.

All maintenance of property assets is carried out by external contractors.

Programmes and services

Most infrastructure-related Council programmes and services are designed and delivered in-house. Exceptions are the delivery of the library KidsFest programme and the Enviroschools education programme; the latter being facilitated by Environment Canterbury under a long-standing Memorandum of Understanding. The Waste Minimisation and Water Conservation education programme, which is delivered to schools, preschools and the wider community, is also carried out under a competitively tendered contract. A Section 17A review which is currently being undertaken will determine how this service will continue to be delivered in the future.

3.9 Financial impacts of the Infrastructure Strategy

The Council's 2021 Financial Strategy reflects the directions contained in the LTP and IS, and models the financial effects on the Council and the District.

The Financial Strategy is aimed at responding to the needs of the community in an affordable way, while funding long term projects, so that future generations who benefit from community infrastructure, pay their share. The Council has invested $422m into renewing, extending and improving core infrastructure in the past 10 years. Within the next ten years of the LTP the Council is forecasting another $529m investment into core infrastructure.

As the District's population grows, the demands for increased levels of service grow, as do the requirements of new legislation and national standards. These cost drivers are a constant pressure on increases in rates In addition, an ageing population means there is an increasing proportion of ratepayers who are on fixed incomes, placing greater pressure on the affordability of annual rates increases. In 2021 Council is also seeing an increase in the number of people applying for rates relief due to the impact of Covid-19.

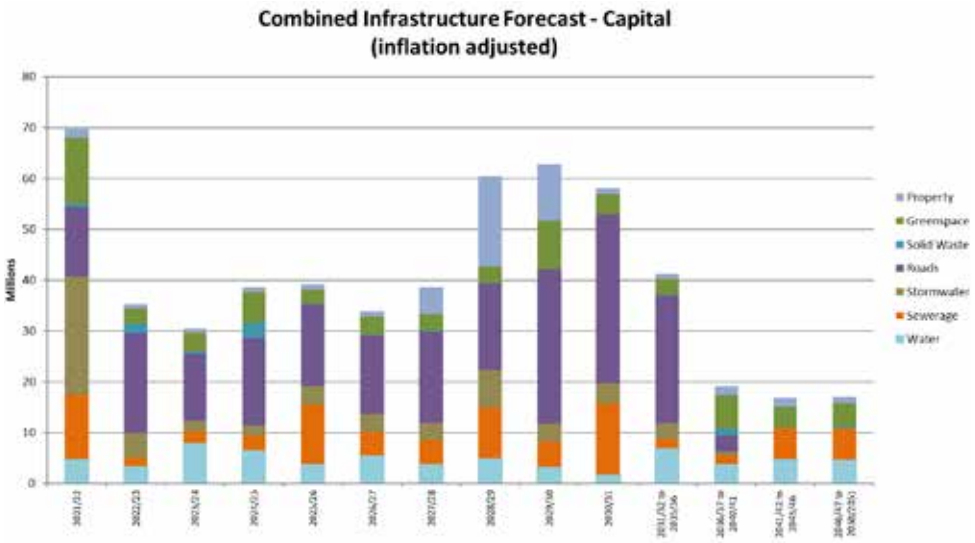
The key components of the Council's strategic direction are to:

- Restrict operating expenditure movements to the rate of Local Government Cost Inflation (LGCI), excluding catering for population growth and improved levels of service
- Continue to progressively fund the cost of reinstating the Council's community assets relating to the 2010 and 2011 earthquakes at levels that keep rates increases to a minimum and affordable
- Maintain debt within policy limits, while maintaining headroom to recover from a significant natural disaster
- Maintain the current prudent financial management while still providing high quality levels of service to both current and future generations.

Total Expenditure

The projected capital expenditure associated with the significant infrastructure assets is graphically represented in figure 3.10. The projected operational and maintenance expenditure is shown in figure 3.11. The figures shown in the graphs for each of the five year blocks between 2031/36 to 2046/51 are the average annual expenditure over that period.

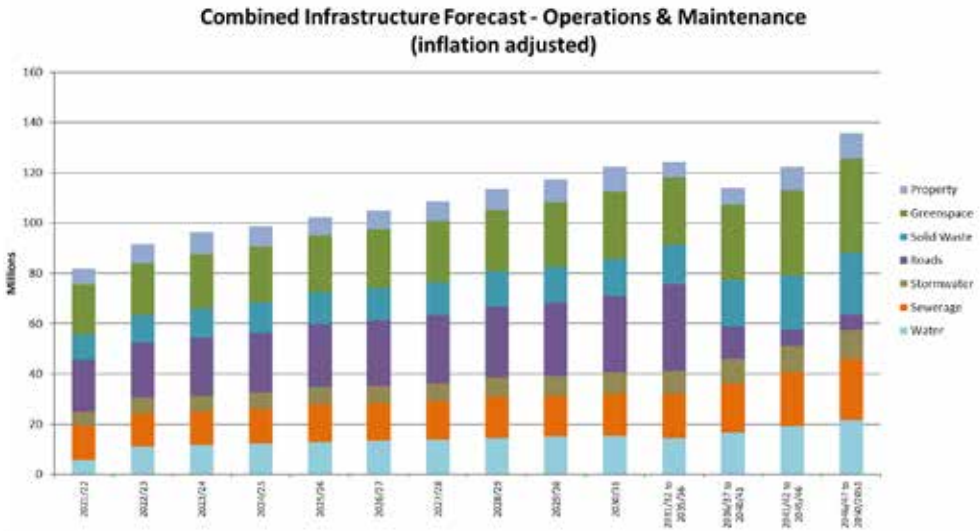
Figure 3.10 Projected capital expenditure for combined infrastructure assets



The above graph shows that over the next 30 years the Council expects spending of approximately $70m in the first year mainly due to stimulus and shovel ready funded projects. This drops to approximately $40m in year two of the LTP and $30m in year three. Later years have a relatively consistent level of capital expenditure of between $35 and $40m until the period 2028 to 2031 when expenditure rises to approximately $60m again to accommodate the proposed civic precinct development. After this the normal capital works programme expenditure resumes of between $30 and $40m per annum. The early to mid years of the programme have been smoothed to ensure the programme is achievable.

The balance of capital expenditure will be funded by development contributions, where it is growth-related, and the remainder by way of subsidies and grants, asset sales, depreciation funding and reserves, loans and rates.

Figure 3.11 Projected operational and maintenance expenditure for combined infrastructure assets



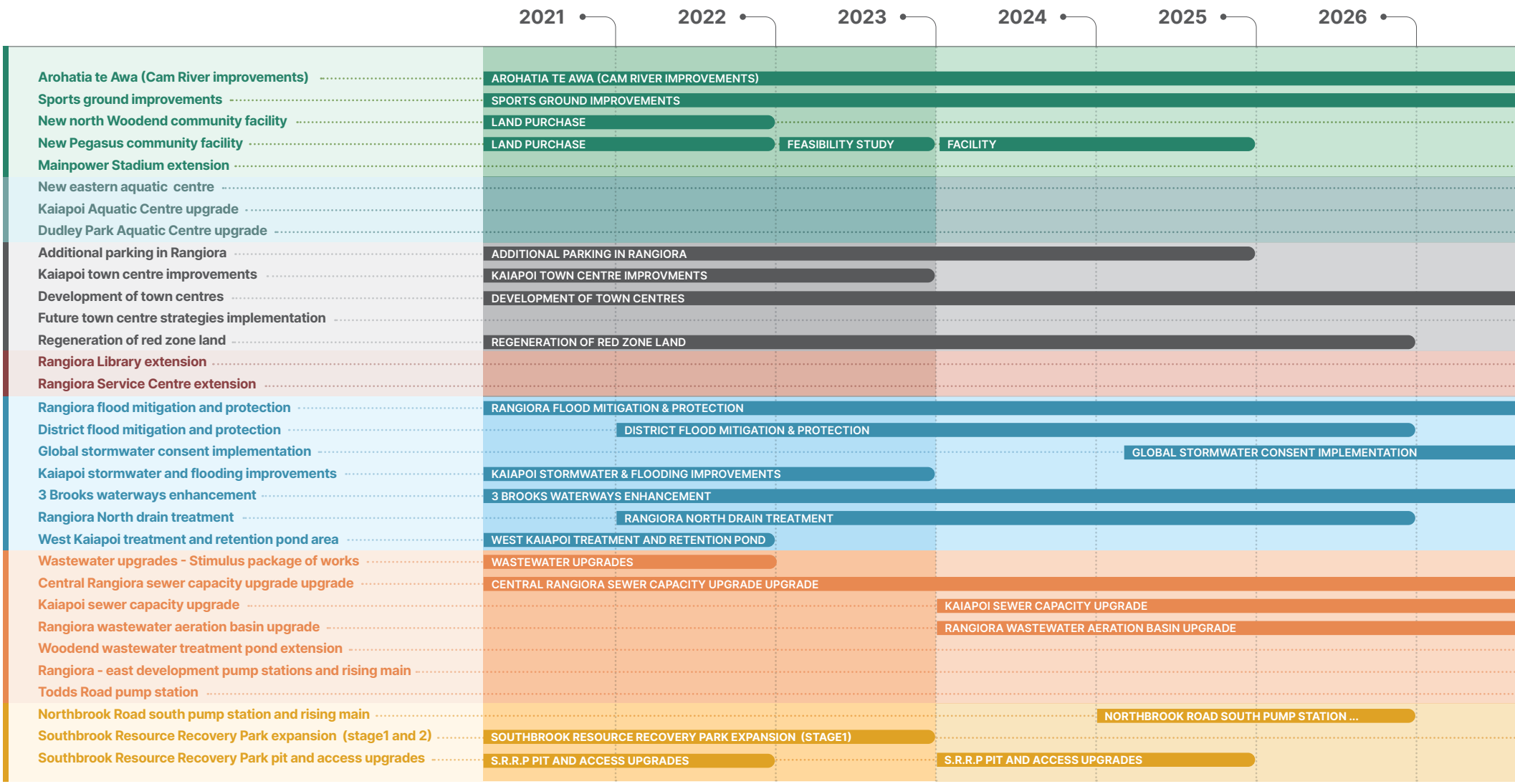
Funding Depreciation

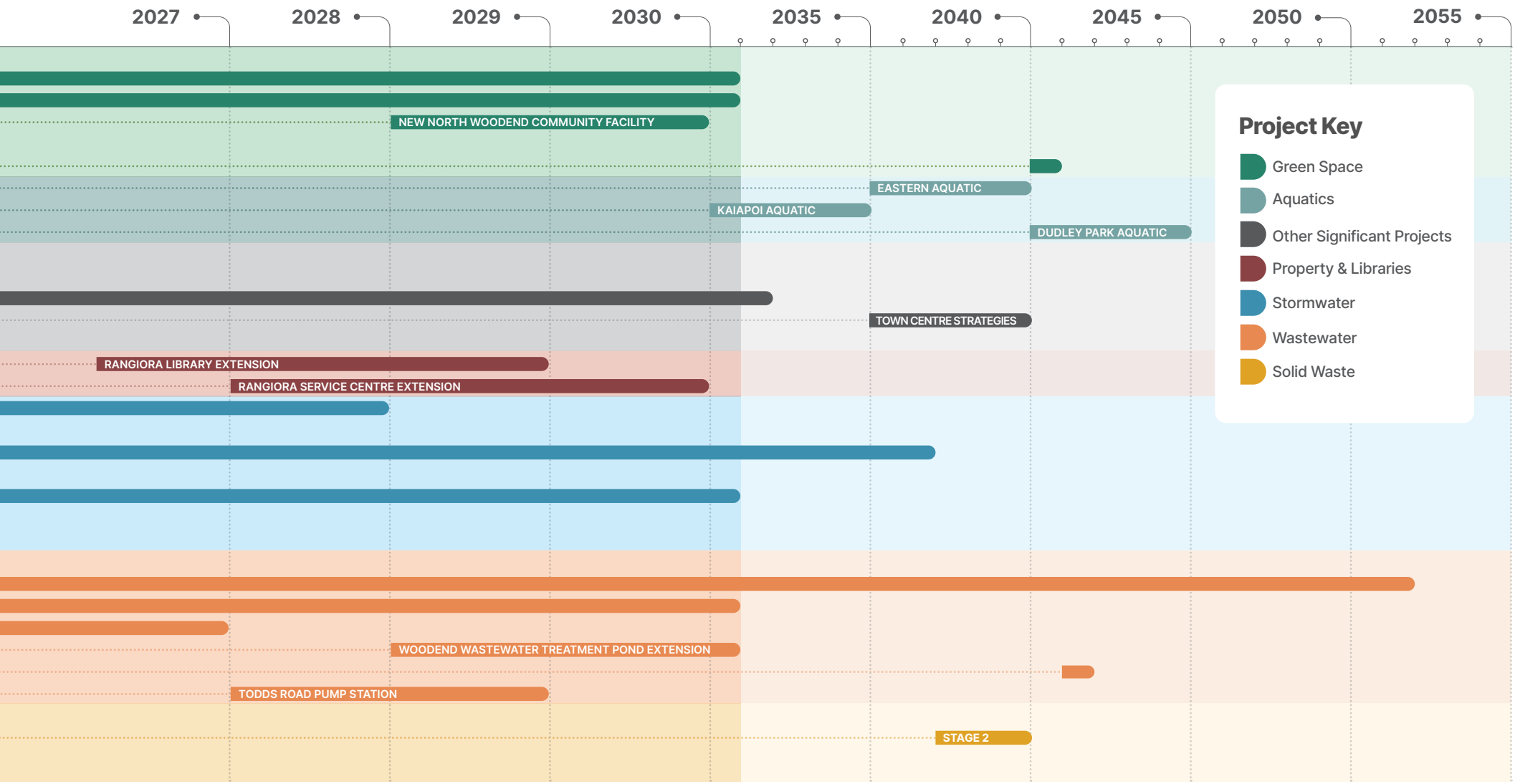
As shown in figure 3.9 in section 3.7 the Council has a significant asset renewal programme forecast to occur later in the 21st Century.

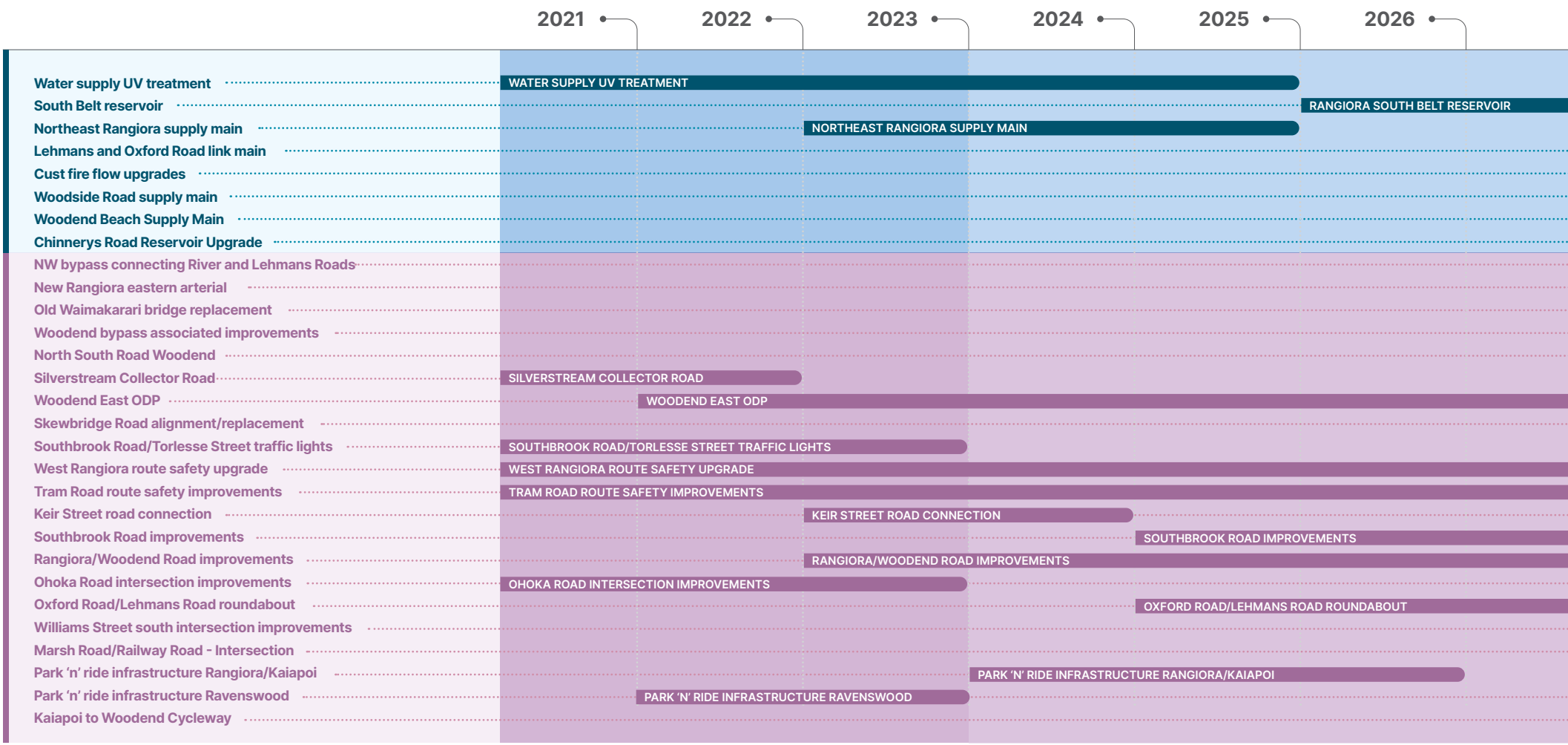
The Council's policy is to ring fence funding of depreciation into separate accounts so that the funds can only be applied to the renewal of infrastructure. This policy takes into consideration the inflationary effect on the assets replacement cost and investment rate that is applied to any depreciation funds. Modelling shows that this approach will enable renewals to be comfortably funded from accumulated depreciation funds.

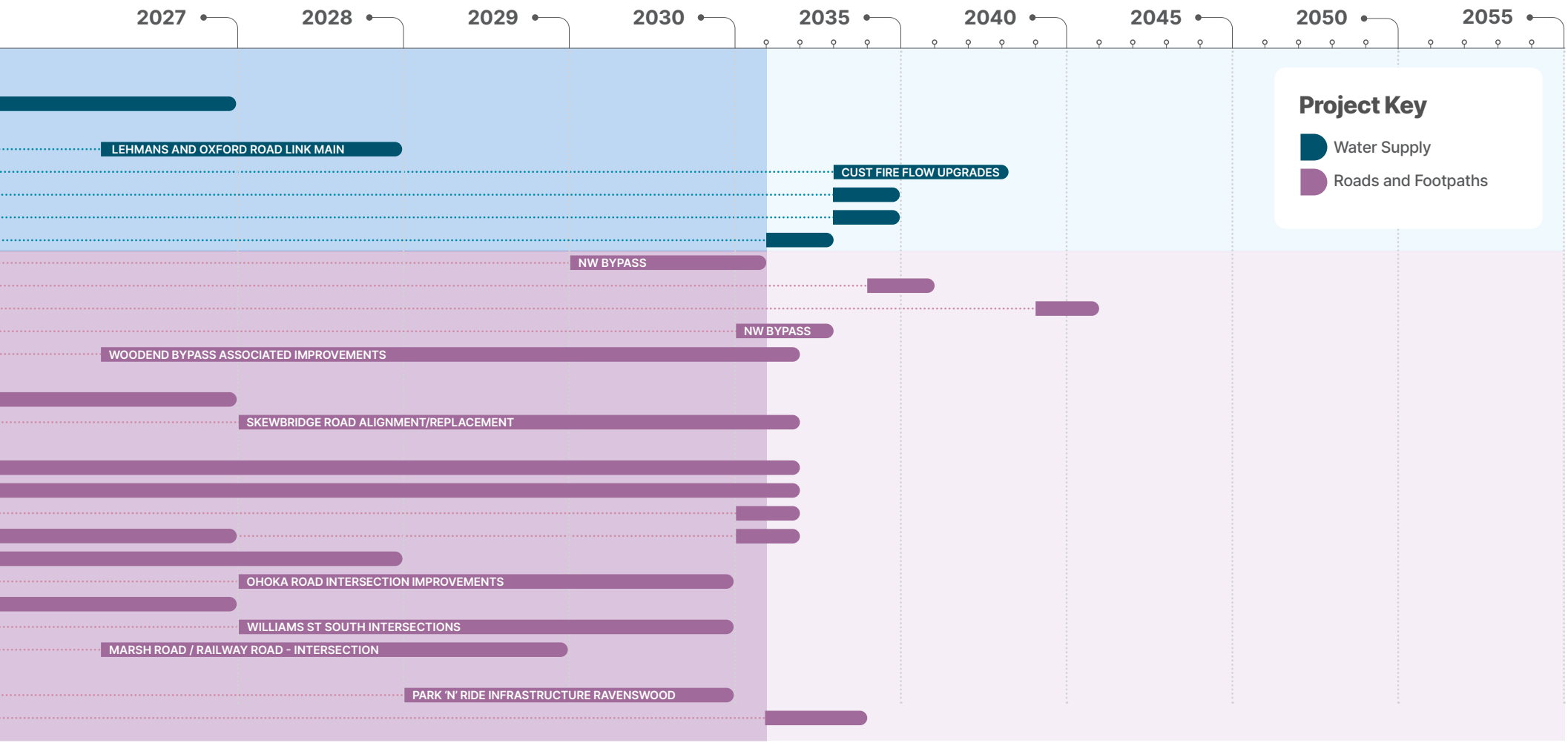
Renewal expenditure over the 30 year period averages approximately $13m per annum in total (in 2020 $) and will be funded from accumulated depreciation reserves and NZTA roading subsidies.

3.10 Summary of significant infrastructure projects




2027
2028
2029
2030
2035
2040
2045
2050
2055
NEW NORTH WOODEND COMMUNITY FACILITY
EASTERN AQUATIC
KAIAPOI AQUATIC
DUDLEY PARK AQUATIC
TOWN CENTRE STRATEGIES
RANGIORA LIBRARY EXTENSION
RANGIORA SERVICE CENTRE EXTENSION
WOODEND WASTEWATER TREATMENT POND EXTENSION
TODDS ROAD PUMP STATION
STAGE 2
Project Key
Green Space
Aquatics
Other Significant Projects
Property & Libraries
Stormwater
Wastewater
Solid Waste


2021
2022
2023
2024
2025
2026
Water supply UV treatment
South Belt reservoir
Northeast Rangiora supply main
Lehmans and Oxford Road link main
Cust fire flow upgrades
Woodside Road supply main
Woodend Beach Supply Main
Chinnerys Road Reservoir Upgrade
NW bypass connecting River and Lehmans Roads
New Rangiora eastern arterial
Old Waimakarari bridge replacement
Woodend bypass associated improvements
North South Road Woodend
Silverstream Collector Road
Woodend East ODP
Skewbridge Road alignment/replacement
Southbrook Road/Torlesse Street traffic lights
West Rangiora route safety upgrade
Tram Road route safety improvements
Keir Street road connection
Southbrook Road improvements
Rangiora/Woodend Road improvements
Ohoka Road intersection improvements
Oxford Road/Lehmans Road roundabout
Williams Street south intersection improvements
Marsh Road/Railway Road - Intersection
Park 'n' ride infrastructure Rangiora/Kaiapoi
Park 'n' ride infrastructure Ravenswood
Kaiapoi to Woodend Cycleway
WATER SUPPLY UV TREATMENT
RANGIORA SOUTH BELT RESERVOIR
NORTHEAST RANGIORA SUPPLY MAIN
SILVERSTREAM COLLECTOR ROAD
WOODEND EAST ODP
SOUTHBROOK ROAD/TORLESSE STREET TRAFFIC LIGHTS
WEST RANGIORA ROUTE SAFETY UPGRADE
TRAM ROAD ROUTE SAFETY IMPROVEMENTS
KEIR STREET ROAD CONNECTION
SOUTHBROOK ROAD IMPROVEMENTS
RANGIORA/WOODEND ROAD IMPROVEMENTS
OHOKA ROAD INTERSECTION IMPROVEMENTS
OXFORD ROAD/LEHMANS ROAD ROUNDABOUT
PARK 'N' RIDE INFRASTRUCTURE RANGIORA/KAIAPOI
PARK 'N' RIDE INFRASTRUCTURE RAVENSWOOD


2027
2028
2029
2030
2035
2040
2045
2050
2055
Project Key
Water Supply
Roads and Footpaths
LEHMANS AND OXFORD ROAD LINK MAIN
CUST FIRE FLOW UPGRADES
NW BYPASS
NW BYPASS
WOODEND BYPASS ASSOCIATED IMPROVEMENTS
SKEWBRIDGE ROAD ALIGNMENT/REPLACEMENT
OHOKA ROAD INTERSECTION IMPROVEMENTS
WILLIAMS ST SOUTH INTERSECTIONS
MARSH ROAD / RAILWAY ROAD - INTERSECTION
PARK 'N' RIDE INFRASTRUCTURE RAVENSWOOD

3.11 Key decisions

Managing infrastructure over the long term in a way that allows significant issues, such as growth, climate change and community expectations, to be adequately addressed requires Council to make key decisions in a timely manner. Table 3.6 identifies the key decisions that need to be made prior to the proposed project implementation date indicated in parenthesis.

Table 3.6 Indicative timeframe for key decisions

Key Decision	Indicative Timeframe
Within the first three years	
Confirming the funding and timing decisions needed to implement the Rangiora Town Centre Strategy	Within a year (2021)
Adopting a strategy to direct Council's biodiversity expenditure	Within a year (2021)
Reviewing Council's future role in providing social housing	Within a year (2021)
Determining the location of a new community facility at north Woodend	Within 1 to 2 years (2021/2)
Determining the location and scope of a new community facility at Pegasus	Within 1 to 2 years (2021/2)
Making a decision about the best 3 Waters reform option for the District	Within 1 to 2 years (2021/2)
Identifying and communicating an appropriate climate change response for low lying coastal areas	Within 1 to 2 years
Within four to ten years	
Adopting a strategy for ensuring water quality standards are met for urban stormwater discharges	Within 4 years (2025)
Confirming whether the Rangiora Library extension will be standalone or be carried out in conjunction with a wider civic precinct	Within 6 years (2027)
Determining when Skew bridge realignment/replacement should proceed if NZTA funding is not available	Within 7 years (2028)
Reviewing whether additional Council office accommodation is still needed and if so, what the nature of this is	Within 7 years (2028)
Determining the scope of a new community facility to service north Woodend	Within 8 years (2029)
Confirming the nature of the upgrades to the Kaiapoi Aquatic Centre	Within 9 years (2030)
Identifying the route for the Kaiapoi to Woodend cycleway	Within 10 years (2031)
Within eleven to thirty years	
Confirming the need to provide full firefighting flows for Cust	Within 13 years (2033)
Confirming if there is a demand for reticulated water at Woodend Beach	Within 13 years (2033)
Confirming the need for the eastern arterial route	Within 14 years (2035)
Deciding on the nature of the expansion of the Southbrook Resource Recovery Park	Within 16 years (2037)
Renewing the Ocean outfall consent	Within 18 years (2039)
Confirming the nature of the upgrades to the Dudley Park Aquatic Centre	Within 19 years (2040)
Deciding on the replacement of the old Waimakariri Bridge	Within 19 years (2040)
Confirming the expansion of the Mainpower Stadium	Within 19 years (2040)

The decisions that are shaded are considered to be significant decisions under the Council's Significance and Engagement Policy as they alter the Long Term Plan by more than 5% of the total budgeted rating revenue (>$3.6m in 2021).

4 Significant Infrastructure Projects

The significant infrastructure issues the Council anticipates facing over the next 30 years, the options for addressing these, and the benefits and costs of the Council's preferred option are outlined in this section of the strategy.

The criterion applied to determine whether projects were significant is as follows:

- High expenditure ($1m or more)
- Strategic priority
- High risk
- High public interest.

In some cases the significant projects are an amalgamation of a number of smaller projects which individually cost less than the $1m trigger point. An example is a roading project which consists of improvements along a whole route instead of a single street.

The projects that are shaded are considered to be significant in terms of the Council's Significance and Engagement Policy.

All of the inflation adjusted graphs are created out of the same data used for the LTP which include the corporate inflation assumptions.

Council management has taken into account staff resources, procurement capacity, consenting issues and the availability of contractors when determining the capital works programme. Expenditure spikes for the Utilities and Roading Department in the initial draft budgets have been smoothed by adjusting the timing of projects to ensure the programmes are able to be delivered. A greater focus has been put into delivering the capital programme recently and for the 2020/21 financial year the Council is on track to deliver its full programme.

4.1 Water Supply

Principal goal: To provide community water supplies that are affordable, sustainable, and reliable, and that provide capacity for anticipated growth, and meet all required drinking water quality standards. Services are to be delivered in accordance with Council's Drinking-water Commitment Statement.

To provide stockwater to enable farming on dry land.

There is a healthy and sustainable environment for all

UN SDG 3, 6, 11, 12, 13, 15

Core utility services are sustainable, resilient, affordable; and provided in a timely manner

UN SDG 6, 7, 9, 11, 12, 13, 15

Extent	Asset
Water	
3	Intakes
38	Pump stations and treatment plants
68	Reservoirs and tanks
42	wells
935km	Water mains
Stockwater	
6,570m	Culverts
1	Intake tunnel (Browns Rock)
34km	Main race channel
796km	Open water races
61	Other structures (weirs, gates and bridges)
1,750m	Siphons
2	Small takes on the Cust River

The Council owns and operates 12 separate water supplies, which provide water to approximately 80% of the population, or about 50,000 people, involving approximately 20,000 connections. Schemes are either 'on-demand' (unrestricted), 'restricted' (a specific amount of water per day is made available), or 'semi restricted' (connections are allocated 19m^3 per day which is close to an on-demand supply).

The stock water race system is provided to a large portion of farmed land in the District. The 1,650 properties or so that it services are generally located west of Rangiora, east of Oxford and between the Waimakariri and Ashley-Rakahuri Rivers.

Total value of assets: $193.9m (Depreciated replacement cost - 30 June 2020)

4.1.1 Water Supply capital works programme

Figure 4.1 shows replacements make up the majority of the capital expenditure over the next 30 years associated with the water supply infrastructure assets.

Figure 4.2 shows the projected capital expenditure each year for the first 10 years, followed by five year blocks to cover the following 20 years. The figures shown for each of the five year blocks between 2031/32 and 2046/51 are the average annual expenditure over that period.

In the third year (2023/24) there is higher expenditure than other years. This is primarily due to the ultra-violet (UV) treatment projects ramping up this year. It is assumed that the new drinking water standards will be worked through in 2021/22 with the regulator, and UV treatment is confirmed as being satisfactory to meet future requirements. Installation for the majority of plants without UV can then commence.

In general, the initial years include a number of level of service projects, and later years are dominated by renewals works, along with some growth. This is because works are required to address existing or expected deficiencies, and once all level of service measures are met, future projects should either be to accommodate growth, or renew existing assets. Growth is expected to occur at a faster rate in the LTP period and then slow in later years and this is reflected in the higher number of growth-related works in the first 10 years.

Figure 4.1 Type of Capital Expenditure - Water Supply

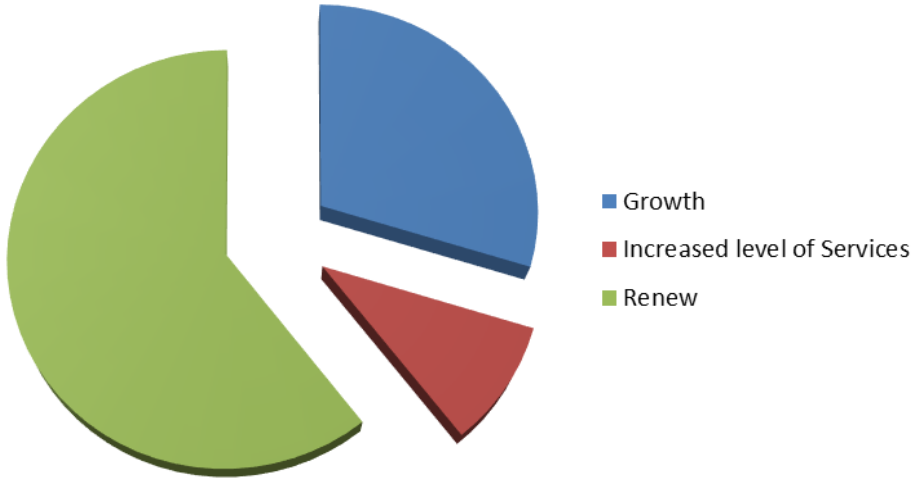


Figure 4.2 Projected Capital Expenditure - Water Supply

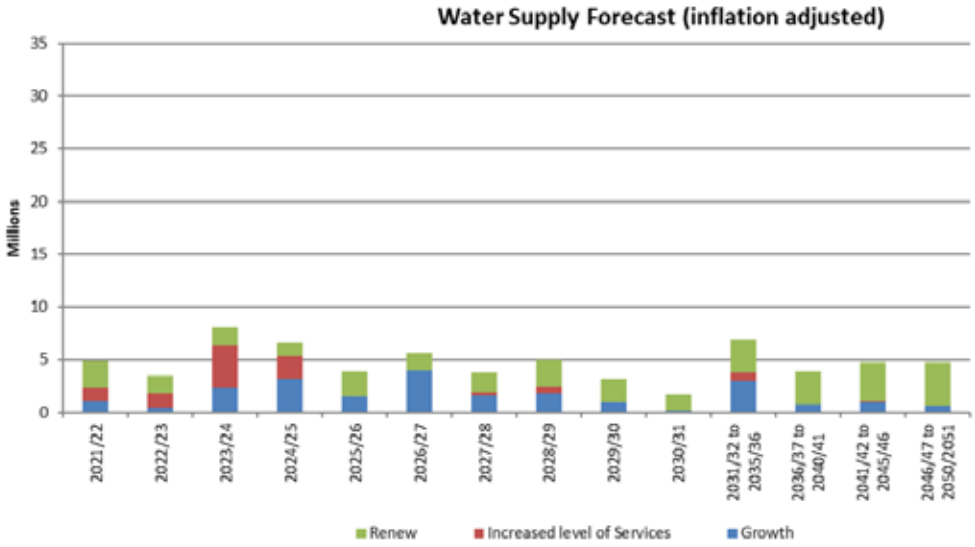


Table 4.1 Significant Water Supply capital projects

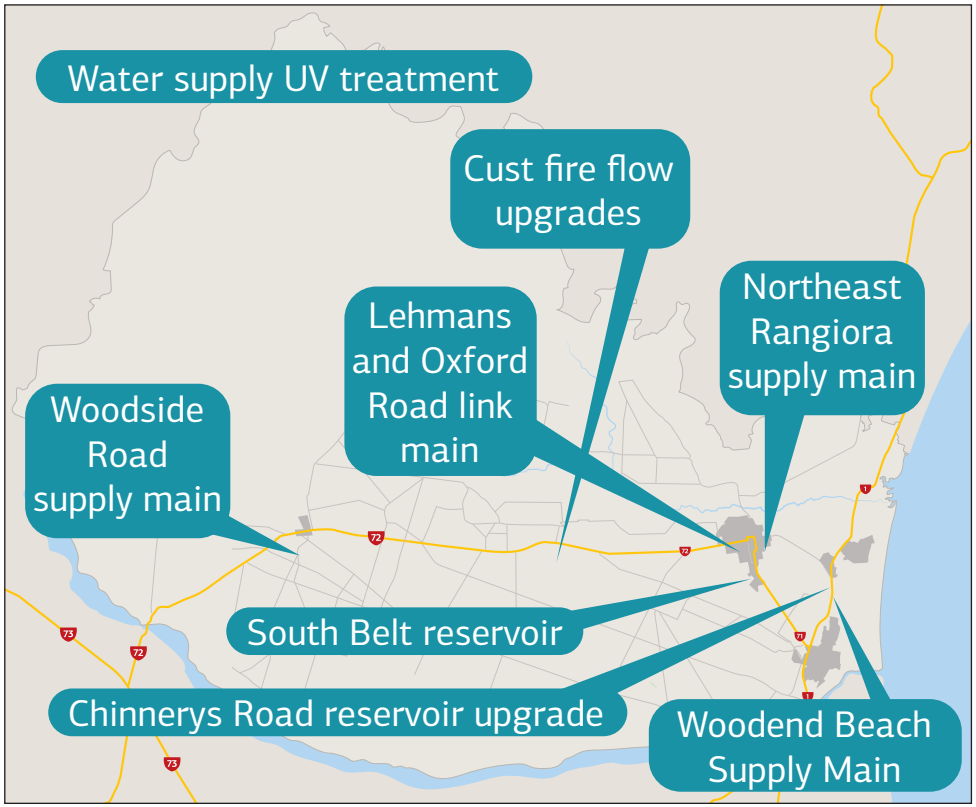
Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Operational Limitations	Including a provisional budget for the implementation of ultra-violet treatment for all District water supplies currently without UV treatment. (In response to the Havelock North water supply inquiry recommendations)	The Council will be financially ready to meet any legislative requirements to improve treatment of drinking water. Council will also be in a position to decide to proceed with the UV implementation independently of legislation should it choose to do so	$6.4m	2021-2025		✓	
	Linkages  SDG 3, 6, 11						
	Assumptions	• That the outcome of the Havelock North water supply inquiry will be legislation requiring councils to meet higher standards of treatment for drinking water supplies					
	Alternative option/s	• Alternative options that could be considered will depend on the Government's response to the inquiry recommendations • In 2018, Council engaged Beca to investigate options to meet future drinking water standards, following recommendations from the Havelock North Drinking Water Inquiry Stage 2 report. A preliminary assessment report was produced which considered alternative treatment methods to UV disinfection, such as ozone. This was ruled out early in the investigation as it is generally more expensive than UV, unless there is a requirement to treat for more than just protozoa • It is understood that if Council's supplies are required to be chlorinated (i.e. applications for exemptions to chlorination, that will be likely to be required when the Water Services Bill is enacted, are unsuccessful), then UV disinfection may not be required in addition to chlorine. Therefore, while not the first choice because of aesthetic issues, in this situation chlorine may be a viable alternative to UV disinfection. Following the establishment of Taumata Arowai, and the next revision of the standards being published (expected in 2021), the Council will work with Taumata Arowai to identify the best option to meet future requirements, before progressing into the construction phase					
Water System Capacity	South Belt Reservoir in Rangiora	Ensures emergency storage requirements are met, and growth is catered for	$3.1m	2026-2027	✓		
	Linkages  SDG 3, 6, 11						
	Assumptions	• The adopted growth assumptions will eventuate					
	Alternative option/s	• Ayers Street could be an alternative site, however, South Belt is the preferred option as it is the primary headworks and land is available there					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Water System Capacity	Northeast Rangiora supply main	Services growth in the east of Rangiora through the construction of a new main	$1.2m	2023-2025	✓		
	Linkages  SDG 3, 6, 11						
	Assumptions	• The adopted growth assumptions will eventuate					
	Alternative option/s	• Existing network consideration determines that this is the obvious pipe route to service this area					
Water System Capacity	Lehmans and Oxford Road link main	Allows for growth to the west of Rangiora	$1.2m	2027-2028	✓		
	Linkages  SDG 3, 6, 11						
	Assumptions	• The adopted growth assumptions will eventuate					
	Alternative option/s	• The configuration of the existing network makes this the obvious pipe route to service this area					
Water System Capacity	Cust fire flow upgrades	Allows full fire flows to be provided in Cust in accordance with the firefighting code of practice	$1.3m	2033-2038		✓	
	Linkages  SDG 3, 6, 11						
	Assumptions	• The funding/rating impact is manageable					
	Alternative option/s	• Full fire flows do not have to be provided as the code is voluntary and some other small areas do not have full firefighting capacity. The approach will need to be decided after consultation is carried out					
Water System Capacity	Woodside Road Supply Main - Oxford	Allows for additional connections to the scheme	$1.8m	2034-2035		✓	
	Linkages  SDG 3, 6, 11						
	Assumptions	• The adopted growth assumptions will eventuate					
	Alternative option/s	• No alternatives are available due to the locations of existing reservoirs and this is the key pipe route from source to the Gammans Road Reservoir					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Availability of Reticulated Water	Woodend Beach Supply Main	Provides a reticulated water supply to this area	$2.3m	2034-2035	✓		
	Linkages  SDG 3, 6, 11						
	Assumptions	• That the outcome of the Havelock North water supply inquiry will be legislation requiring councils to meet higher standards of treatment for drinking water supplies					
	Alternative option/s	• Alternative options that could be considered will depend on the Government's response to the inquiry recommendations					
Water System Capacity	Chinnerys Road reservoir upgrade	Ensures emergency storage requirements are met, and growth is catered for	$2m	2032-2033	✓		
	Linkages  SDG 3, 6, 11						
	Assumptions	• The adopted growth assumptions will eventuate					
	Alternative option/s	• Additional storage could be provided at Pegasus, however, this site is preferred because of land availability and predicted growth patterns					

Upgrades to water supplies are also included in the Stimulus construction package included in section 4.2.1. These are as follows:

- Poyntzs Road water upgrade
- Ohoka water storage upgrade
- West Eyreton and Summerhill storage upgrade
- Tuahiwi water upgrade.


Water supply UV treatment
Cust fire flow upgrades
Lehmans and Oxford Road link main
Northeast Rangiora supply main
Woodside Road supply main
South Belt reservoir
Chinnerys Road reservoir upgrade
Woodend Beach Supply Main

4.1.2 Water Supply replacement programme

Figure 4.3 150 year replacement cost forecast for Water Supply (in 2021 $)

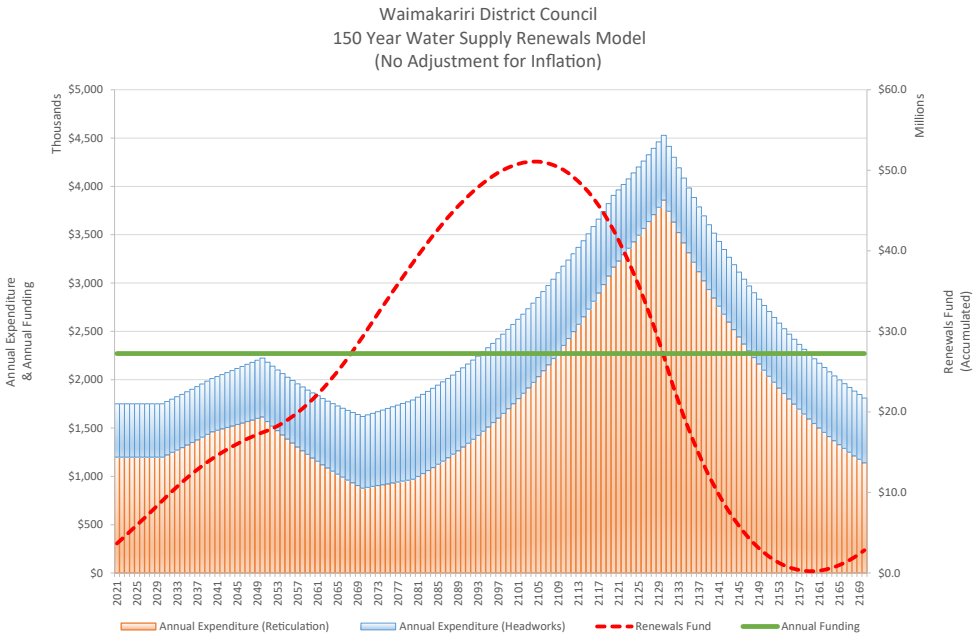


Figure 4.3 represents the 150 year replacement forecast for water supply, based on the Council's renewals model. The model relies upon an accurate understanding of expected useful life of each asset. As the understanding of useful life has improved through the burst history analysis (described in the Water Supply Overview Activity Management Plan), the renewals model is now able to better forecast which assets are required to be renewed within a certain time period. This helps ensure the optimum balance is achieved between assets being left in service longer than they should be, leading to unacceptable failure rates, versus assets being replaced prematurely and not realising their full value.

It can be seen that with the average asset age being relatively new, the rate of renewals remains relatively stable between now and 2070, before increasing to a peak in approximately 2130. Pipes being renewed in early years generally includes asbestos cement (AC) pipe that is now reaching the end of its useful life, as well as some early generation plastic (PE and PVC) pipes.

The graph includes all asset class renewals, not just pipes. Reservoirs, pump stations, water supply headworks etc, some of which will go through a number of lifecycles over the 150 year period are all included, which explains the peak in 2049.

Figure 4.4 150 year replacement cost forecast for Stock Water (in 2021 $)

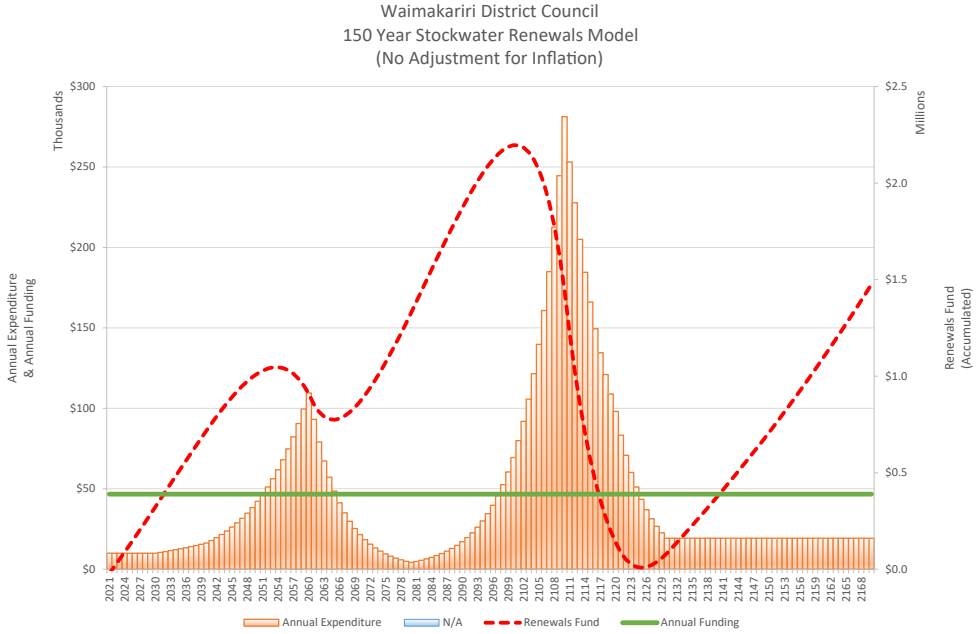


Figure 4.4 shows the replacement forecast for stock water. Depreciation is set at a level to fully fund future renewals which means the fund builds up around the turn of the century and the peak of renewals occurs shortly thereafter. This is not considered to be a significant issue as the annual expenditure and funding level for renewals is relatively small.

4.2 Wastewater

Principal goal: To provide reliable and efficient wastewater treatment plants of sufficient capacity to cater for growth and to minimise harm to the environment from the discharge of contaminants to ground, water or air.

There is a healthy and sustainable environment for all

UN SDG 3, 6, 11, 12, 13, 15

Core utility services are sustainable, resilient, affordable; and provided in a timely manner

UN SDG 6, 7, 9, 11, 12, 13, 15

Extent	Asset
11 urban schemes	
2 rural schemes	
7	Treatment plants
52	Pump stations
223.5km	Piped gravity networks
147.4km	Piped pressure networks

The Council provides wastewater services via four separate network schemes that collectively enable the disposal of sewage from 17,106 properties in the District, or approximately 66% of the population. Just over 16,155 of these properties are connected to the Eastern District Sewer Scheme (EDSS) which provides for nine towns and settlements in the eastern part of the District, and disposes of effluent via a 1.5km ocean outfall.

Total value of assets: $296.7m (Depreciated replacement cost - 30 June 2020)

4.2.1 Wastewater capital works programme

Figure 4.5 shows replacements make up the majority of the capital expenditure over the next 30 years associated with the wastewater infrastructure assets.

Figure 4.6 shows the projected capital expenditure for the first 10 years, followed by five year blocks to cover the 20 years. The figures shown for each of the five year blocks between 2031/32 and 2046/51 are the average annual expenditure over that period.

Individual significant projects contributing to the 2021/22 year spend are continuation of the central Rangiora capacity upgrade, Rangiora septage facility and the Chapman Place rising main replacement in Kaiapoi. The relatively high expenditure in the 2025/26 and 2028/29 financial years, relates principally to the Kaiapoi capacity upgrade project, pipe renewals and the new oxidation pond at the Woodend Treatment Plant.

Figure 4.5 Type of Capital Expenditure - Wastewater

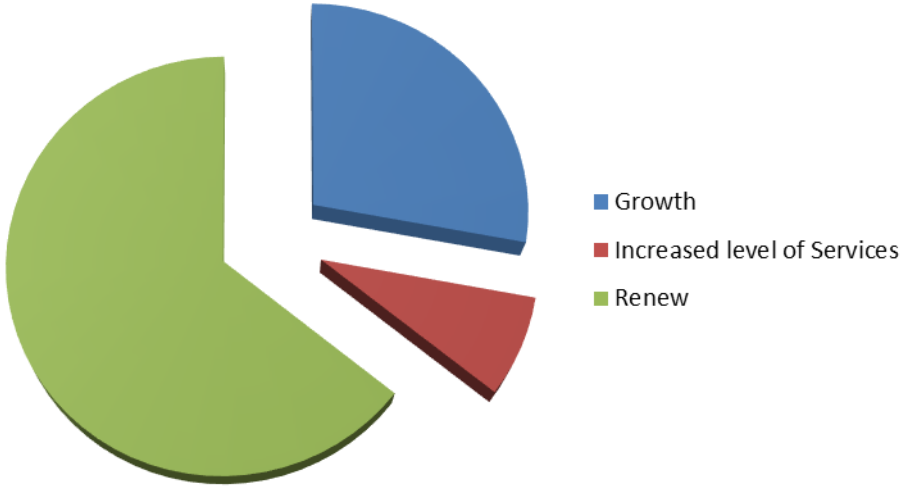


Figure 4.6 Projected Capital Expenditure - Wastewater

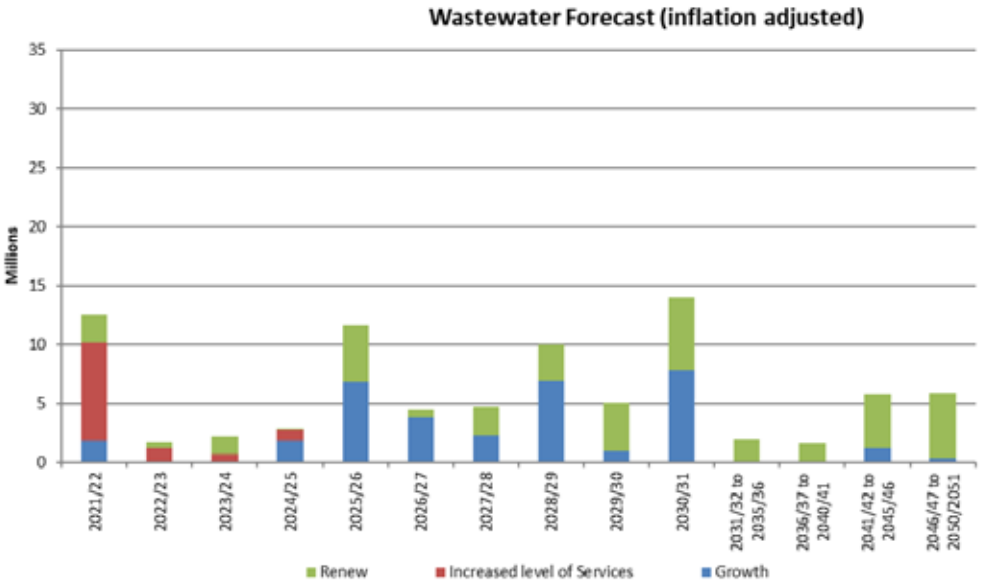


Table 4.2 Significant Wastewater capital projects

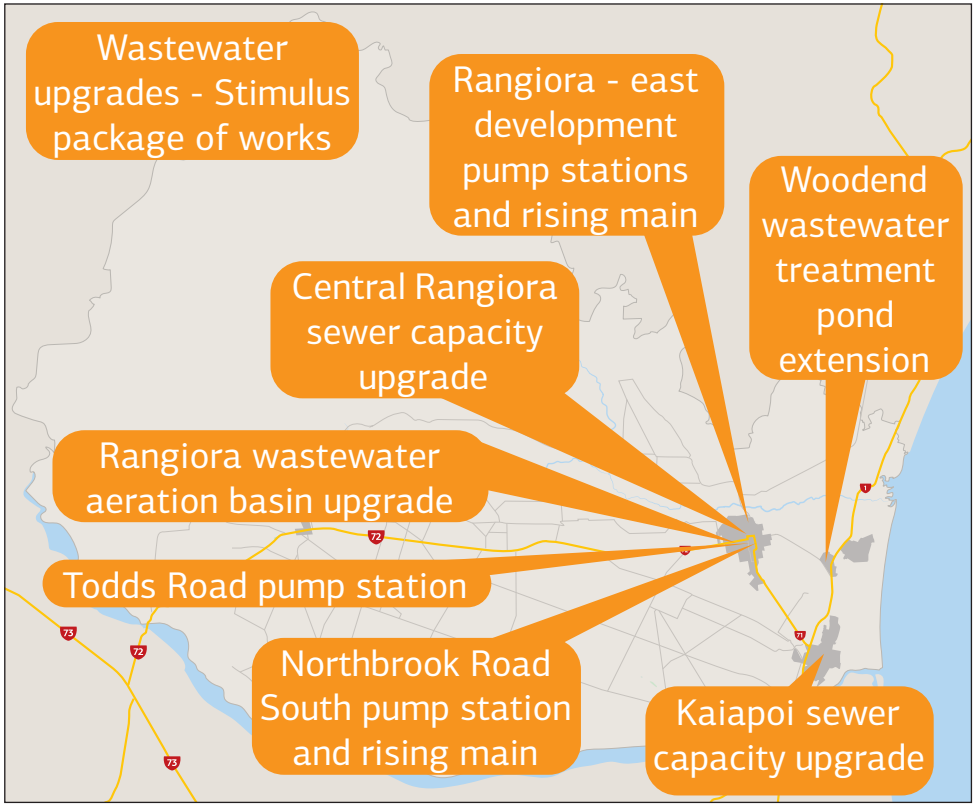
Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Wastewater Network Capacity and Legal Compliance	Central Rangiora sewer capacity upgrade	Meet levels of service, provide capacity for growth, improve environmental outcomes by reducing wastewater overflows, and replace some aging pipework	$5.8m	2021-2052	✓	✓	✓
	Linkages  SDG 3, 6, 9, 11						
	Assumptions	• Growth will continue as forecast, and the programmed works are sufficient to achieve the level of service by 2025					
	Alternative option/s	• This project has already started and the options report is Trim 150408055023 • Delay carrying out all of the network upgrades don't meet levels of service and acknowledge the corresponding delay in improving environmental and health risk outcomes					
Wastewater Network Capacity and Legal Compliance	Kaiapoi sewer capacity upgrade	Meet levels of service, provide capacity for growth, and improve environmental outcomes by reducing wastewater overflows	$18.2m	2024-2031	✓	✓	✓
	Linkages  SDG 3, 6, 9, 11						
	Assumptions	• Modelling of network deficiencies confirms the estimated budget, and indicative timeframe is appropriate					
	Alternative option/s	• Years 1 to 3 of this project involve assessing options and selecting a strategy which will confirm capital costs. The outcome will depend on the catchment Infiltration and Inflow investigations network modelling to be completed in 2021					
Legal Compliance	Rangiora and Woodend wastewater treatment plant upgrades	Ensure consent compliance with additional loading on treatment plants.	$4.0m (Rangiora aeration basin) $2.5m (Woodend treatment pond extension)	2024-2027 2029-2031	✓		
	Linkages  SDG 3, 6, 9, 11						
	Assumptions	• Growth on the network will proceed as forecast					
	Alternative option/s	• An options report for this project was completed in 2015. Refer to Trim 151022144521 • If growth in serviced properties is slower than projected, the upgrade may be deferred					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Wastewater Network Capacity, Legal Compliance and Affordability	*Stimulus package of works	Meet levels of service, provide capacity for growth, and improve environmental outcomes by reducing wastewater overflows.	$10.4m	2020-2022	✓	✓	✓
	Linkages  SDG 3, 6, 9, 11						
	Assumptions	• Growth will continue as forecast					
	Alternative option/s	• Fail to meet level of service • High operating costs for Loburn Lea, Fernside and Oxford					
Wastewater Network Capacity and Legal Compliance	Rangiora - east development pump station and rising main	Services development in east Rangiora	$3.7m	2041-2042	✓		
	Linkages  SDG 3, 6, 11, 15						
	Assumptions	• Growth will continue as forecasted					
	Alternative option/s	• Delay network upgrades, don't meet levels of service and acknowledge the corresponding delay in improving environmental and health risk outcomes					
Wastewater Network Capacity and Legal Compliance	Todds Road pump station	Services future development in the Todds Road area	$2.7m	2028-2029	✓		
	Linkages  SDG 3, 6, 11, 15						
	Assumptions	• Growth will continue as forecasted					
	Alternative option/s	• Delay network upgrades, don't meet levels of service and acknowledge the corresponding delay in improving environmental and health risk outcomes					
Wastewater Network Capacity and Legal Compliance	Northbrook Road south pump station and rising main	Services development in East Rangiora	$1.6m	2025-2026	✓		
	Linkages  SDG 3, 6, 11, 15						
	Assumptions	• Growth will continue as forecasted					
	Alternative option/s	• Delay network upgrades, don't meet levels of service and acknowledge the corresponding delay in improving environmental and health risk outcomes					

The following Wastewater construction packages are included in the Stimulus programme of work agreed to by the Council in 2020 as part of the Government's Covid-19 recovery response:

- Loburn Lea sewer upgrade
- Tuahiwi sewer upgrade/extension & water extension
- Fernside sewer upgrade
- Oxford wastewater upgrade
- Central Rangiora sewer upgrade Stage 5A.

Work started in 2020 due to the tight time frame required for expenditure.

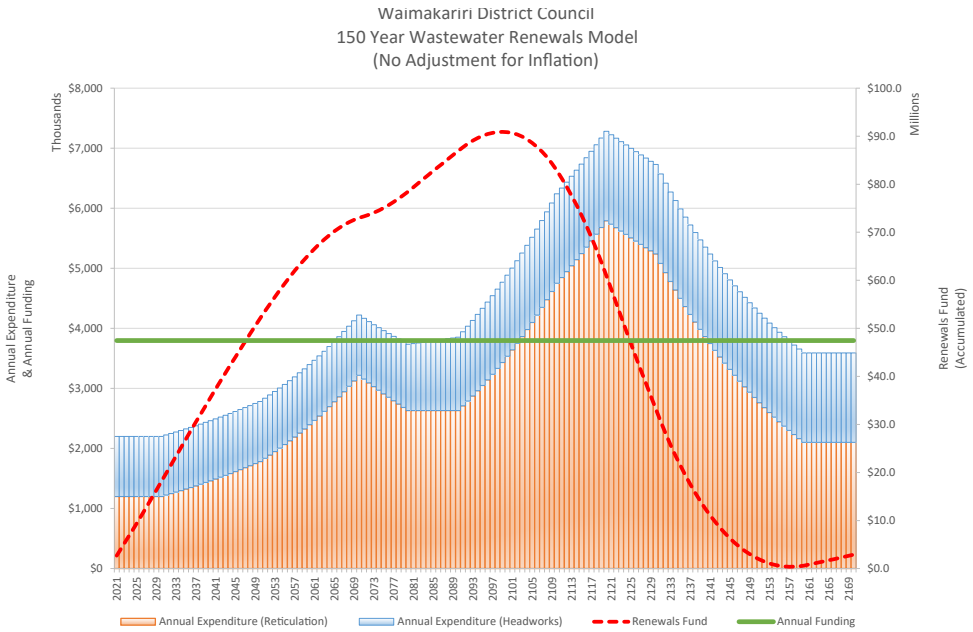


4.2.2 Wastewater replacement programme

The 150 year replacement forecast for wastewater in figure 4.7 shows the required risk-based renewals expenditure across all the wastewater supply schemes to ensure current levels of service continue to be met. Within the next 30 years the programme of renewals includes assets installed in the 1930s which are reaching the end of their useful lives. Pipe assets selected for the renewals programme will be assessed for rehabilitation where this is suitable or alternatively, they will be fully renewed.

The rise in expenditure from 2070 to the peak in 2120 relates to the end of life of the assets constructed with the development of Pegasus Town, the Rangiora supply upgrade, and the post-Canterbury earthquakes growth.

Figure 4.7 150 year replacement cost forecast for Wastewater (in 2021 $)



4.3 Stormwater

Principal goal: To develop public drainage infrastructure that is effective and efficient in reducing risks of flooding to residential areas and business zones, to an acceptable level and at an affordable cost.

There is a healthy and sustainable environment for all

UN SDG 3, 6, 11, 12, 13, 15

Core utility services are sustainable, resilient, affordable; and provided in a timely manner

UN SDG 6, 7, 9, 11, 12, 13, 15

Extent	Asset
49	Basins
288.1km	Open drains and waterways
107.3km	Piped stormwater networks
10	Stormwater pump stations
7	Treatment devices

There are seven rural and five urban rated drainage areas within the District. Together the 12 drainage schemes cover approximately 10% of the District's land area but service approximately 90 % of the District's population. The Council has piped stormwater networks in the urban areas and maintains drains and waterways in rural areas.

Total value of assets: $117.6m (Depreciated replacement cost - 30 June 2020)

4.3.1 Stormwater capital works programme

Figure 4.8 shows that the majority of the capital expenditure over the next 30 years is associated with increasing levels of service.

Figure 4.9 shows the projected capital expenditure for the first 10 years, followed by five year blocks to cover the 20 years. The figures shown for each of the five year blocks between 2031/32 to 2046/51 are the average annual expenditure over that period.

The high level of service expenditure showing in 2021/22 relates to significant improvements in the Kaiapoi stormwater network. Government funding of 'shovel ready' projects has enabled these previously planned works to be brought forward.

The subsequent nine years of moderate level of service expenditure relates to ongoing flood mitigation and protection works triggered by the 2014 and 2017 storm events, as well as general ongoing stormwater improvements. Larger projects within that timeframe, and typically spread over a number of years are the Dockey Creek overflow diversion, the West Belt overflow pipe, a long term solution for managing resurgence flows at Mandeville, Kaiapoi, and Oxford, Rangiora water quality improvement works, and improved stormwater treatment for the North Drain catchment.

Figure 4.8 Type of Capital Expenditure - Stormwater

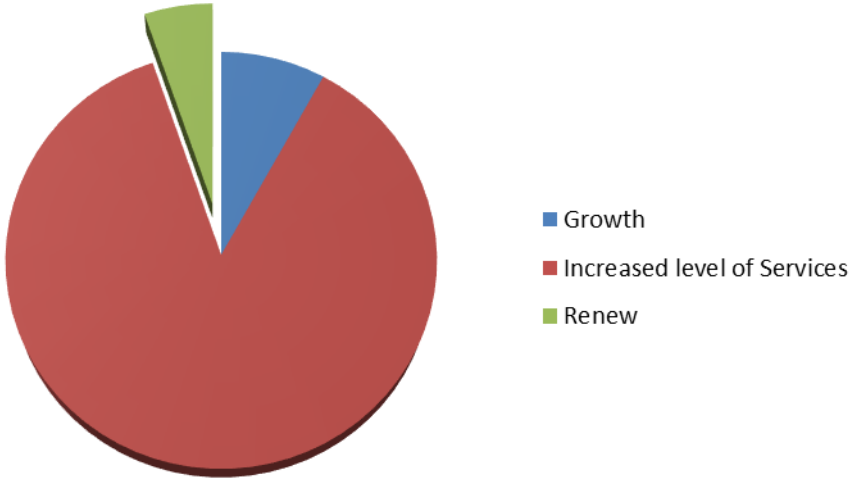


Figure 4.9 Projected Capital Expenditure - Stormwater

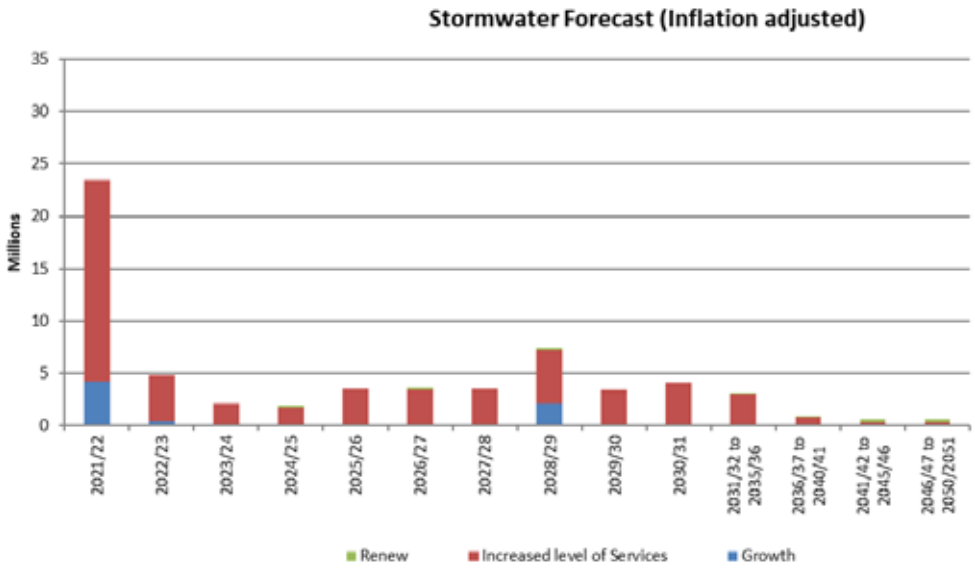


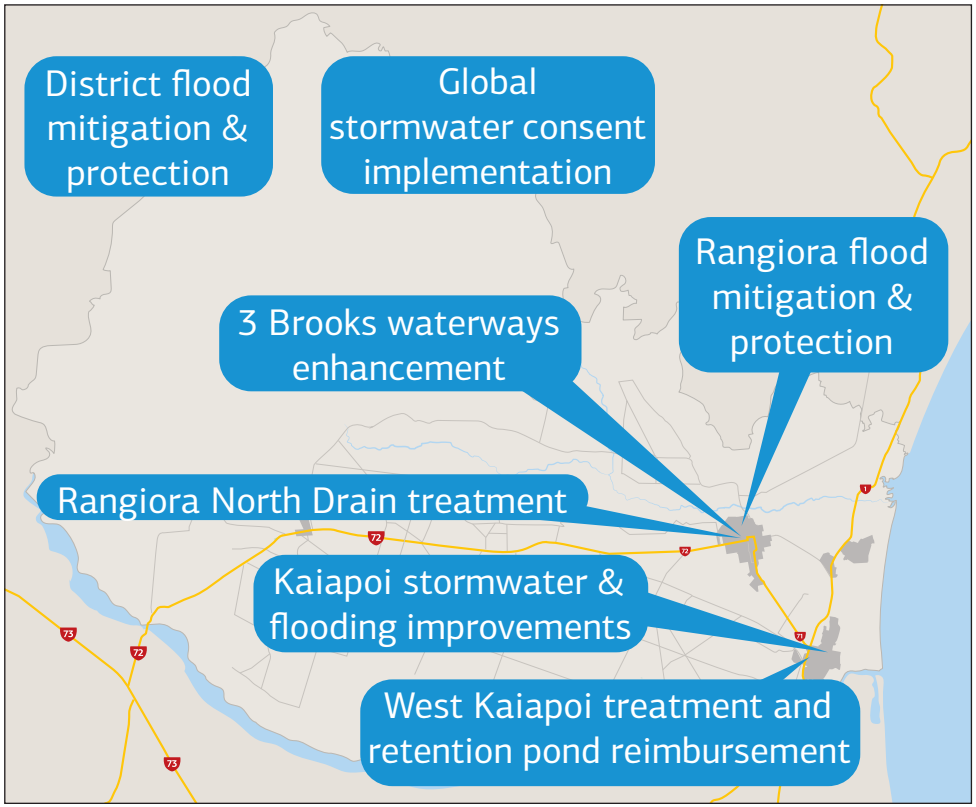
Table 4.3 Significant Stormwater capital projects

Issue	What are we doing?	What is the benefit?	How much will it cost in cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Legal Compliance	Global stormwater consent implementation	Meet requirements of the Land and Water Regional Plan, and improve environmental outcomes for waterways	$21.4m provided (final estimated cost uncertain until consent is issued)	2025-2037		✓	
	Linkages  SDG 11, 13, 15						
	Assumptions	• Ecan accepts the proposed approach of developing a costed strategy between 2021 and 2025, and that full implementation will be a long term process					
	Alternative option/s	• Develop and trial affordable approaches to stormwater management and treatment in collaboration with Ecan, Ngāi Tahu and other industry and community stakeholders					
Stormwater Network Capacity	Flood mitigation and protection programme of works	Protection of public and private property	$2.8m (Rangiora) $4m (rest of District)	2021-2026 2022-2028		✓	
	Linkages  SDG 9, 11, 13						
	Assumptions	• The Flood Team investigations to date have determined and made provision for the most cost-effective and practicable option to address each issue					
	Alternative option/s	• Both of these programmes of work are Council's response to flooding events in 2014 and 2017, and have been ongoing for some time • Further investigations identify other options that could alleviate known flooding issues • Maintain current levels of flood mitigation and protection					
Stormwater Network Capacity	Covid-19 Shovel Ready programme of works*	Protection of public and private property	$18.1m (Total project cost $18.1m. $9.1m Council's share, $9.0m Government Shovel Ready projects funding)	2020-2023		✓	
	Linkages  SDG 9, 11, 13						
	Assumptions	• Current project team work will deliver the most cost-effective and practicable option to address the Kaiapoi flooding risk					
	Alternative option/s	• Maintain current levels of flood mitigation and protection					

Issue	What are we doing?	What is the benefit?	How much will it cost in cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Stormwater Network Capacity	Three Brooks Waterways Enhancement	Maintain/upgrade current assets to ensure LOS is maintained	$2.4m	2021-2031		✓	
	Linkages  SDG 9 11, 15						
	Assumptions	• The asset condition survey carried out is accurate, and repair recommendations appropriate					
	Alternative option/s	• Three options of intervention have been considered and reported upon. Leaving assets to further deteriorate would risk asset collapse and put LOS at risk					
Legal Compliance	Rangiora North Drain treatment	Treatment of stormwater prior to discharge to receiving waters, in anticipation of consent requirements	$1.1m	2022-2026		✓	
	Linkages  SDG 11, 13, 15						
	Assumptions	• Ecan accepts the proposed approach of developing a costed strategy between 2021 and 2025, and that acceptable treatment can be achieved within this budget envelope					
	Alternative option/s	• Treatment options have yet to be considered. Outcomes from the stormwater management and treatment trials for the Global stormwater consent may be useful in determining the final design					
Stormwater Network Capacity	Land purchase reimbursement for West Kaiapoi treatment and retention pond (Silverstream)	Treatment of stormwater from an existing residential area, prior to discharge, using a developer-led treatment pond	$2.1m	2021-2022		✓	
	Linkages  SDG 11, 13, 15						
	Assumptions	• That the developer's design is effective in achieving expected outcomes					
	Alternative option/s	• This project is part of a development agreement • Council carries out its own separate pond development although this would be a less efficient alternative • Not address the issue at this point in time, however, a delay would be likely to result in later consent discharge consent compliance issues, and higher costs					

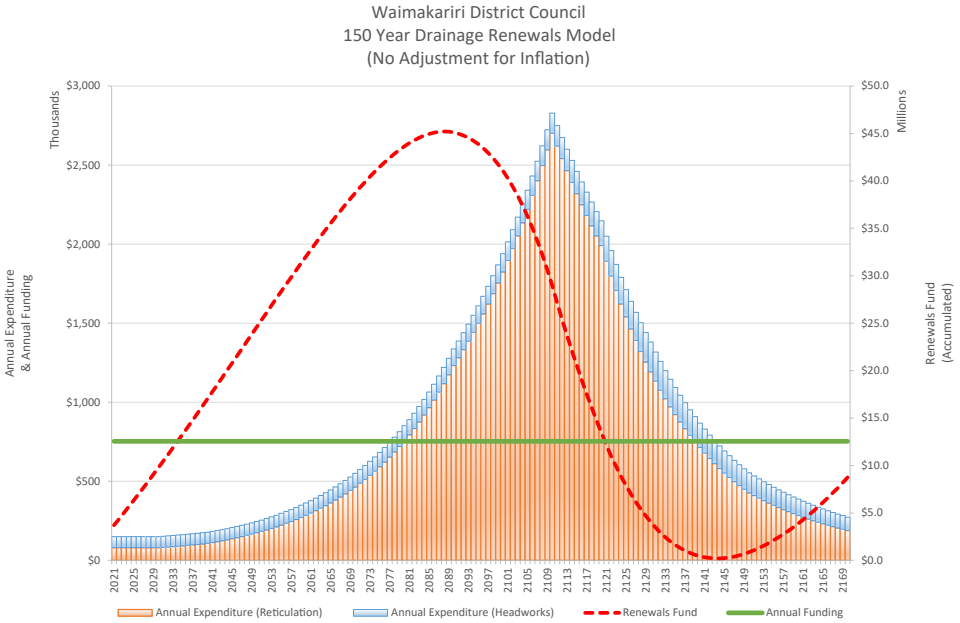
**Shovel ready programme of Kaiapoi stormwater & flooding improvements includes McIntosh/Feldwick drainage concept and Parnham/Dudley concept.*

Work started in 2020 due to the tight timeframe for expenditure



4.3.2 Stormwater replacement programme

Figure 4.10 150 year replacement cost forecast for Stormwater (in 2021 $)



The 150 year replacement forecast for drainage in figure 4.10 shows the required risk-based renewals expenditure across all drainage schemes to ensure current levels of service continue to be met. Stormwater assets are relatively young compared to water and wastewater as generally it was not until the 1990's that full stormwater systems were installed with development. This means that the peak renewals period is a long way into the future.

The peak showing around 2110 relates to the end of life of assets in recent development such as Pegasus Town.

As for wastewater, a number of early stormwater mains were laid at the back of residential properties, rather than in public roads, and will present some challenges when they are to be replaced. Realignment into the road reserve, or the use of alternative technologies such as relining, which can extend the life of pipes by 50 years or more, may be required.

4.4 Roads and Footpaths

Principal goal: To plan, develop, operate, maintain and improve the District's transport infrastructure, delivering an affordable, integrated, safe, responsive and sustainable transport network.

There is a safe environment for all

UN SDG 3, 13

Transport is accessible, convenient, reliable and sustainable

UN SDG 9, 11, 12

Extent	Asset
288	Bridges
20	Bus shelters
26	Bus stop seats
5,404	Streetlights
16,926	Traffic facilities
359km	Footpaths
18km	On and off road cycleways
970km	Sealed road
585km	Unsealed road

Total value of assets: $1.0B (Depreciated replacement cost - 30 June 2020)

4.4.1 Roads and Footpaths capital works programme

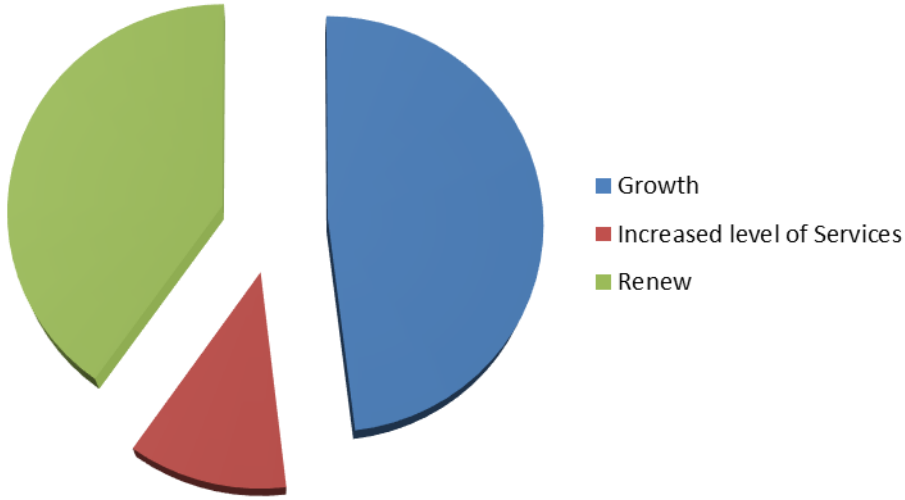
Figure 4.11 shows that the majority of the capital expenditure over the next 30 years is associated with growth. Level of service increases remain a consistently minor component of the work required throughout the period.

Figure 4.12 shows the projected capital expenditure for the first 10 years, followed by five year blocks to cover the 20 years. The figures shown for each of the five year blocks between 2031/32 to 2046/51 are the average annual expenditure over that period.

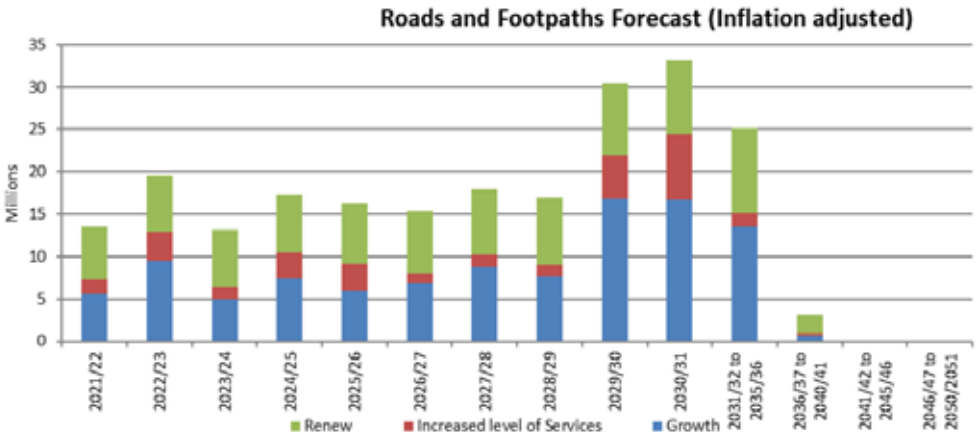
Capital expenditure is anticipated to peak in 2029/30 and 2030/31 primarily due to the planned replacement of Skew Bridge, construction of the North-West Rangiora Collector Road (River Road to Lehmans Road), the Rangiora Town Centre parking building, Ravenswood Park and Ride, and the continuation of a number of route improvements commencing in earlier years.

The cost of renewals also increases gradually over time, however, this is mainly because of inflation, as most renewal activity is smoothed, with large bridge renewal being the exception.

Figures 4.11 Type of Capital Expenditure - Roads and Footpaths



Figures 4.12 Projected Capital Expenditure - Roads and Footpaths



NW bypass connecting River and Lehmans Roads
New Rangiora eastern arterial
Southbrook Road/Torlesse Street traffic lights
West Rangiora route safety upgrade
Keir Street road connection
Southbrook Road improvements
Rangiora/Woodend Road improvements
Oxford Road/Lehmans Road roundabout
Park 'n' ride infrastructure Rangiora
Marsh Road/Railway Road intersection

Park 'n' ride infrastructure Kaiapoi
Kaiapoi to Woodend Cycleway
Old Waimakarari bridge replacement
Williams St south intersection improvements
Silverstream Collector Road

Park 'n' ride infrastructure Ravenswood

Woodend Bypass associated improvements
North South Road Woodend
Woodend East ODP

Tram Road route safety improvements

Ohoka Road intersection improvements

Skewbridge Road alignment/replacement

Table 4.4 Significant Roads and Footpaths capital projects

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Improving transport options	Park 'n' ride infrastructure	More public transport users means more cost-effective use of roading facilities	$1.5m Rangiora & Kaiapoi	2024-2026	✓	✓	
		Reduces congestion and delays on the Northern Motorway approaching Christchurch	$1.9m Ravenswood	2022-2023 2029-2030	✓	✓	
	Linkages  SDG 3, 9, 11, 12, 13						
	Assumptions	• People will continue to travel to Christchurch for work and education • The shift to public transport provides more transport options and assists those without a car/and or licence • That the wider Travel Demand Management Programme promoted by the Greater Christchurch partners is successful in changing attitudes and encouraging public transport use					
	Alternative option/s	• Provide alternative locations for park 'n' ride in Christchurch. This will not address future capacity issues on the Waimakariri River Bridge • Continue to build road capacity for private vehicles but this is likely to be prohibitively expensive • NZTA/Christchurch City Council provide this infrastructure instead of the Waimakariri District Council • The nature of the expenditure will be determined prior to design and construction based on observed usage and behaviour, and on mitigating any associated deficiencies. Expenditure for Rangiora and Kaiapoi may be on such items as expanding the parking, improving the user facilities, or considering alternative locations. The expenditure at Ravenswood is firstly to procure land, and then to construct a facility. The options for the location of this facility are still being worked through, and the options for the type of facility will depend on location, usage etc. as above					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Improving transport options	Kaiapoi to Woodend Cycleway	Encourages more people to travel by bike between the two towns, reducing the number of road users, improving community health, and providing recreational opportunities while keeping cyclists safe	$2.2m	2031-2033	✓	✓	
	Linkages  SDG 3, 9, 11, 12, 13						
	Assumptions	• An acceptable route is found to allow the cycleway to be completed					
	Alternative option/s	• Provide better public transport for commuters					
Roading Connections	NW bypass connecting River and Lehmans Roads	Helps to mitigate the impacts of traffic growth on a residential area. Heavy vehicles on West Belt result in loss of amenity and safety and this will help to redirect more of that traffic It also extends the alternative route between north-west Rangiora and the Fernside Road/ Flaxton Road/ Skewbridge route, reducing congestion on the existing Southbrook Road/ Lineside Road route	$2.2m	2030-2031	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• The land will be able to be acquired • The bypass will be able to accommodate increased traffic volumes • Other improvements to Fernside Road/ Flaxton Road/ Skewbridge route proceed					

	Alternative option/s	• Smooth existing road, but this is not a long term solution as sealed surfaces degenerate
		• The sealing of River Road is also not a long term solution as it:
		  • does not readily connect to the residential area in north-west Rangiora
		  • has a narrow formation and number of tight curves. This road alignment is not suitable for large numbers of heavy vehicles					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Roading Connections	New eastern arterial in Rangiora	Manages impacts of growth Reduces traffic congestion on Southbrook Road	$21m	2035-2036	✓		
	Linkages  SDG 9, 11						
	Assumptions	• Land is available for any road building/widening required					
	Alternative option/s	• Further optimise existing network eg: direct traffic to existing Woodend network. A significant proportion of traffic on Southbrook Road has an origin or destination within Southbrook, rather than travelling on SH71 (Lineside Road) and providing alternatives will lower the volume on Southbrook Road itself					
Roading Connections	Old Waimakariri Bridge replacement	Ensures continuity of service by replacing aging infrastructure Provides better level of service for pedestrians and cyclists	$6.1m (Council's share)	2040-2041		✓	✓
	Linkages  SDG 9, 11						
	Assumptions	• The bridge life lasts until replacement funding is available • CCC and NZTA will approve funding for their share of the replacement					
	Alternative option/s	• Extend the life of the bridge by carrying out more major maintenance and strengthening work although this option will only delay the need for replacement					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Road Safety Improvements	Skew Bridge realignment/ replacement, including associated road improvements	Reducing crash/injury risk due to poor alignment and high traffic volumes Encouraging more traffic to travel via the western route rather than Southbrook Road	$11m	2028-2031	✓	✓	✓
	Linkages  SDG 9, 11						
	Assumptions	• Traffic volumes on the route will continue to grow, justifying the replacement					
	Alternative option/s	• Provide signs to give warning and guidance to drivers but this will only partially mitigate the risk • Encourage use of alternative routes such as Southbrook and Lineside Road. This will exacerbate existing capacity issues on this route					
Road Safety Improvements	Southbrook Road/Torlesse Street traffic lights	Safer environment for school children crossing Southbrook Road, and for cars entering and exiting the side roads in the vicinity of the school	$1.8m	2021-2023	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• NZTA will provide funding assistance					
	Alternative option/s	• The preferred option was chosen because it is safest for pedestrians, minimises congestion for through traffic, and benefits the wider network the most • A pelican crossing would assist children but not cars trying to access the school • Provide traffic lights at the Southbrook Road/Denches Road intersection or at the existing Kea crossing					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Road Safety Improvements	West Rangiora route safety upgrade	Lower risk of crashes due to road being engineered originally for a much lower volume and no longer fit for purpose. This in turn will encourage some traffic away from Southbrook Road	$14.4m	2021-2032	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• Funding will be available					
	Alternative option/s	• A full scheme assessment was carried out that looked at a long-list and short-list range of options for each intersection and mid-block. These were evaluated via a MCA to determine the preferred mitigation for each component					
Road Safety Improvements	Tram Road route safety improvements	Improving infrastructure and lowering speed limits will reduce the likelihood of fatal and serious crashes occurring	$12m	2021-2032	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• Agreement is reached with the public on appropriate speed limits					
	Alternative option/s	• Accept lower levels of service					
Road Safety Improvements	Keir Street Road connection	Linking Blackett St to Keir St acrosss the railway line will provide an alternative to a single congested access	$5m	2023-2024 2031-2032	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• The other rail crossing can be closed • Satisfactory design agreement is reached with Kiwirail					
	Alternative option/s	• Only high level options have been considered at this stage. These include do-nothing, upgrade High Street, or provide a pedestrian only crossing. The actual location, alignment and extent of the crossing currently budgeted will be further refined as part of the preliminary design closer to the time					

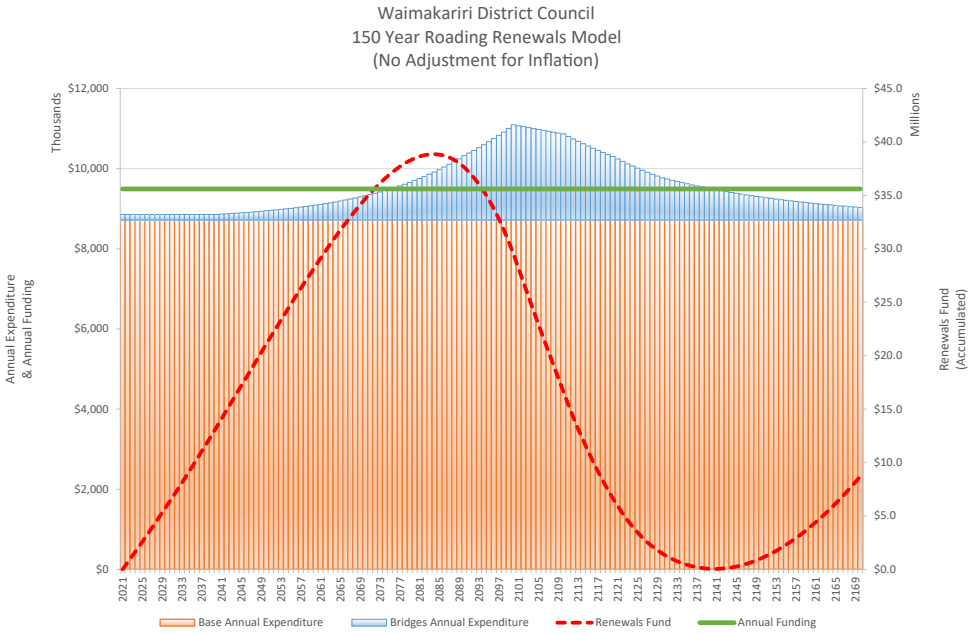
Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Road Safety Improvements	Southbrook Road improvements	Changes to intersection and corridor layout will make travel safer for all users, and provide a more pleasant environment for cyclists and pedestrians	$4m	2025-2027 2031-2032	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• Agreement is reached with all parties as to the best way forward					
	Alternative option/s	• Encourage traffic to divert to other roads • Construct Eastern Bypass					
Road Safety Improvements	Rangiora/Woodend Road improvements	Fewer people are killed or seriously injured	$2.5m	2023-2028	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• Land can be purchased as required for safety improvements					
	Alternative option/s	• This option includes a new roundabout at the Boys Road / Rangiora Road intersection. Other options include different intersection alignments such as realigning Tuahiwi Road onto Boys Road, or advance flashing lights. These have not been chosen as they do not meet the NZTA criteria, and would not remedy the issue. The exact location and size of the roundabout will be determined as part of the preliminary design					
Road Safety Improvements	Ohoka Road intersection improvements	Safe negotiation of intersection Fewer deaths or serious injuries	$2.3m	2021-2023 2028-2030	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• Land and funding is available for best option					
	Alternative option/s	• This option includes a new roundabout at the Ohoka Road / Island Road intersection. Other options include different intersection alignments such as an improved tee intersection, or advance flashing lights. These have not been chosen as they do not meet NZTA criteria, and they would not remedy the issue. The exact location and size of the roundabout will be determined as part of the preliminary design					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Road Safety Improvements	Oxford Road/Lehmans Road roundabout	Roundabout will form part of the heavy traffic bypass of Rangiora	$1.2m	2025-2027	✓	✓	
	Linkages  SDG 9, 11						
	Assumptions	• Land and funding is available					
	Alternative option/s	• Introduce thresholding to slow traffic further					
Road Safety Improvements	Woodend Bypass associated improvements	Improves access to State Highway and user safety	$1m	2031-2033		✓	
	Linkages  SDG 9, 11						
	Assumptions	• NZTA will fund the by-pass					
	Alternative option/s	• No alternative options because the improvements are part of a partnering project with Waka Kotahi who is building the bypass					
Road Safety Improvements	Williams Street south intersection improvements	Improves access and user safety	$2m	2028-2030		✓	
	Linkages  SDG 9, 11						
	Assumptions	• Traffic continues to increase					
	Alternative option/s	• Direct traffic elsewhere. This is not a desirable alternative because it will force arterial road traffic onto low speed residential roads					
Road Safety Improvements	Marsh Road/Railway Road – intersection improvements	Increases safety	$1m	2027-2029		✓	
	Linkages  SDG 9, 11						
	Assumptions	• Land is able to be purchased and the project coordinated with Kiwirail					
	Alternative option/s	• Close road over railway crossing and force traffic to go elsewhere. This is not a suitable option because it would increase the pressure on other intersections not designed for the growth in traffic volume					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Road Safety and Amenity	North South Road Woodend	Provides better access	$1.5m	2027-2032	✓		
	Linkages  SDG 9, 11						
	Assumptions	• Development will continue as forecast					
	Alternative option/s	• The only alternative would be to not carry out these works, or to scale them back in some form, neither of which would provide an effective solution to the identified issues					
Road Safety and Amenity	Silverstream Collector Road (Adderley-Island)	Improves access to key activity centre	$1.8m	2021-2022	✓		
	Linkages  SDG 9, 11						
	Assumptions	• There is no change to Council plans for this area					
	Alternative option/s	• The only alternative would be to not carry out these works, or to scale them back in some form, neither of which would provide an effective solution to the identified issues					
Road Safety and Amenity	Woodend East ODP	Manages impacts of growth	$2.8m	2022-2027	✓		
	Linkages  SDG 9, 11						
	Assumptions	• Development will continue as forecast					
	Alternative option/s	• The only alternative would be to not carry out these works, or to scale them back in some form, neither of which would provide an effective solution to the identified issues					

4.4.2 Roads and Footpaths replacement programme

Figure 4.13 150 year replacement cost forecast for Roading and Footpaths (in 2021 $)



Roading and footpath renewals are programmed with the objective of achieving:

- A net benefit to the national and/or local economy from the renewals
- The lowest life-cycle cost for the asset (where it is uneconomic to continue repairing the asset)
- An affordable medium-term cash flow
- Other savings by co-ordinating renewal works with other planned works within the road reserve or adjacent to it
- Reduced risk, including the risk of failure and associated financial and social impacts, and increased risk of crashes, or other health risks.

The roading network has few large scale infrastructure items that would potentially impact on Council budgets, as most replacements are done in sections allowing the cost to be evenly spread year on year as depicted in figure 4.13. The only exceptions to this are large bridges. The key structures in Waimakariri are the Ashley Bridge which was replaced in 2014, the Old Waimakariri Bridge and the Waimakariri Gorge Bridge. The Waimakariri Gorge Bridge is shared with Selwyn District, and managed by them, and has an indefinite life not likely to need significant component replacements in the foreseeable future other than deck replacements.

The Skew Bridge that crosses the Cust Main Drain near West Kaiapoi, is programmed for an upgrade/realignment or replacement in 2028 to 2031, and following this work should not require renewal within the period of the Infrastructure Strategy. The Old Waimakariri Bridge, which links Christchurch and Waimakariri, is programmed for replacement in 2040/2041 at a cost of $25m, of which $6.1m is to be funded by the Council. Other significant bridges in the District will not need replacing in the next 30 years.

The steady increase in renewals, shown in figure 4.13, reflects the new assets the Council anticipates acquiring as subdivision occurs. The peak in expenditure in 2041 relates to the Council's share of replacing the Old Waimakariri Bridge.

4.5 Solid Waste

Principal goal: To provide an effective and efficient service for households and businesses to dispose of waste at an affordable cost, and encourage practices that minimise waste generation.

Core utility services are sustainable, resilient, affordable; and provided in a timely manner

UN SDG 6, 7, 9, 11, 12, 13, 15

Extent	Asset
0.44km	Access roads
2	Cleanfill sites
5	Closed landfills
6.4km	Fencing
9	Gates
18,300m²	Hardstand areas
2	Hazardous waste storage facilities
5,132m²	Landscaping
2	Transfer stations
2.2km	Underground reticulation

Urban domestic kerbside collection services, which are provided to 62% of the District's rateable properties, consist of a rates funded recycling wheelie bin collection and a refuse bag collection funded through official bag sales. These customers may also opt in to a refuse and/or organics wheelie bin collection, the cost of which is charged through rates. Recycling and optional refuse bin collection services only are provided to another 3% of the District's rateable properties in the Ohoka and Mandeville area.

A Council resource recovery park operates in Rangiora, a transfer station is provided in Oxford and there are two cleanfill sites. Aftercare is provided to five closed landfill sites and groundwater quality is monitored at four of

these sites. Council is a joint venture partner in the Kate Valley Landfill and the rubbish accepted at the Southbrook Resource Recovery Park and the Oxford Transfer Station is transported there. The Council also has a role in facilitating waste minimisation behaviours within communities. This includes funding waste minimisation and sustainability programmes in schools and with businesses and the community.

Total value of assets: $4.5m (Depreciated replacement cost - 30 June 2020)

4.5.1 Solid Waste capital works programme

Figure 4.14 shows that the majority of the capital expenditure over the next 30 years is associated with growth.

Figure 4.15 shows the projected capital expenditure for the first 10 years, followed by five year blocks to cover the 20 years. The figures shown for each of the five year blocks between 2031/32 and 2046/51 are the average annual expenditure over that period.

The capital expenditure in the first 10 years of the Infrastructure Strategy period relates to purchase of additional land and upgrade projects at the Southbrook Transfer Station's rubbish pit, and the recycling and reuse area. New allowances have been made for upgrades at the Oxford Transfer Station and cleanfill pits. These are driven by capacity issues caused by growth, adopted diversion targets, and anticipated changes to reporting requirements to track waste materials handled at Council facilities.

The capital expenditure in the block from 2036/37 to 2040/41 is an allowance for expansion of the SRRP to enable on-site materials separation and processing to achieve better diversion outcomes.

Figure 4.14 Type of Capital Expenditure - Solid Waste

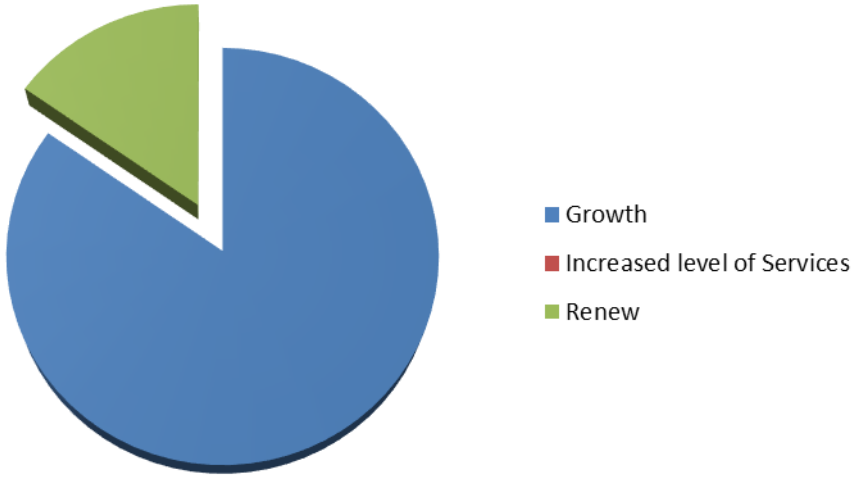
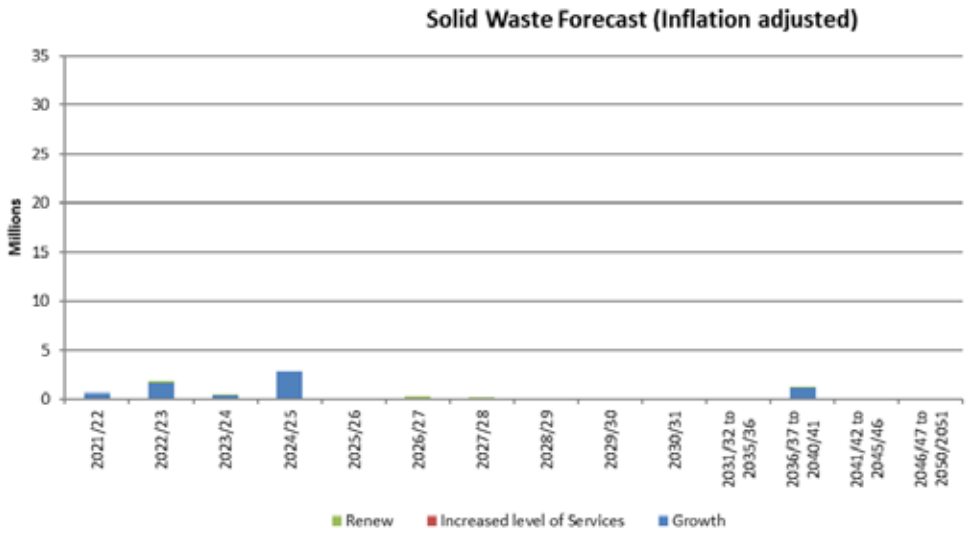


Figure 4.15 Projected Capital Expenditure - Solid Waste




rethink
rubbish
Working on waste together.
WAIMAKARIRI
DISTRICT COUNCIL

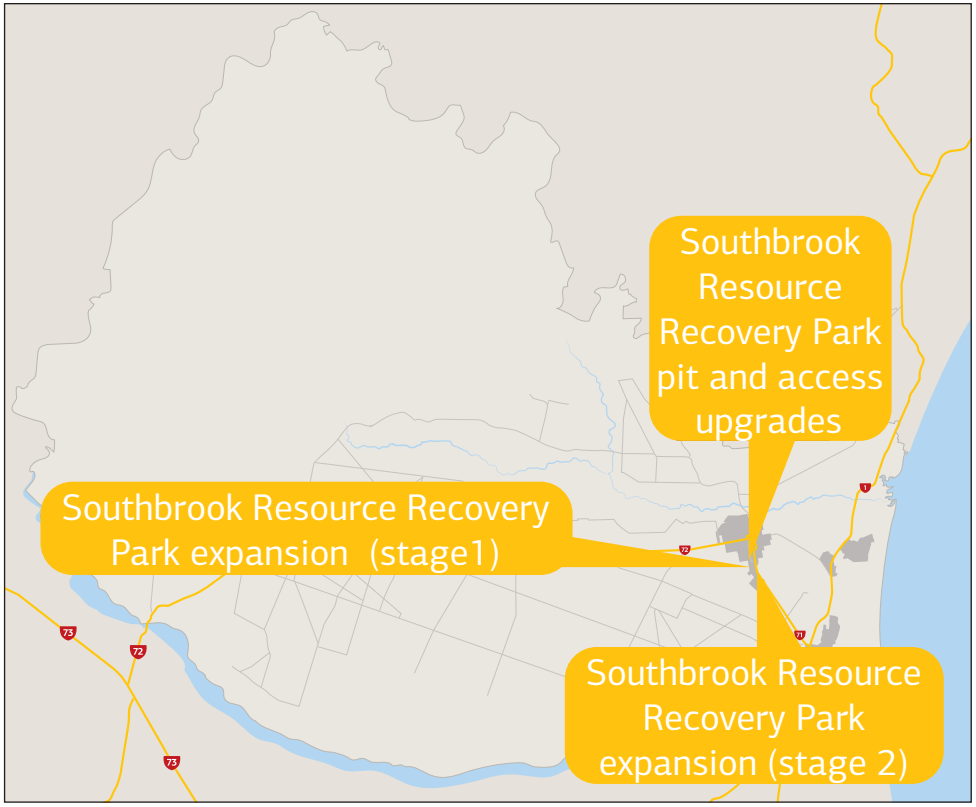

Southbrook Resource Recovery Park pit and access upgrades
Southbrook Resource Recovery Park expansion (stage1)
Southbrook Resource Recovery Park expansion (stage 2)

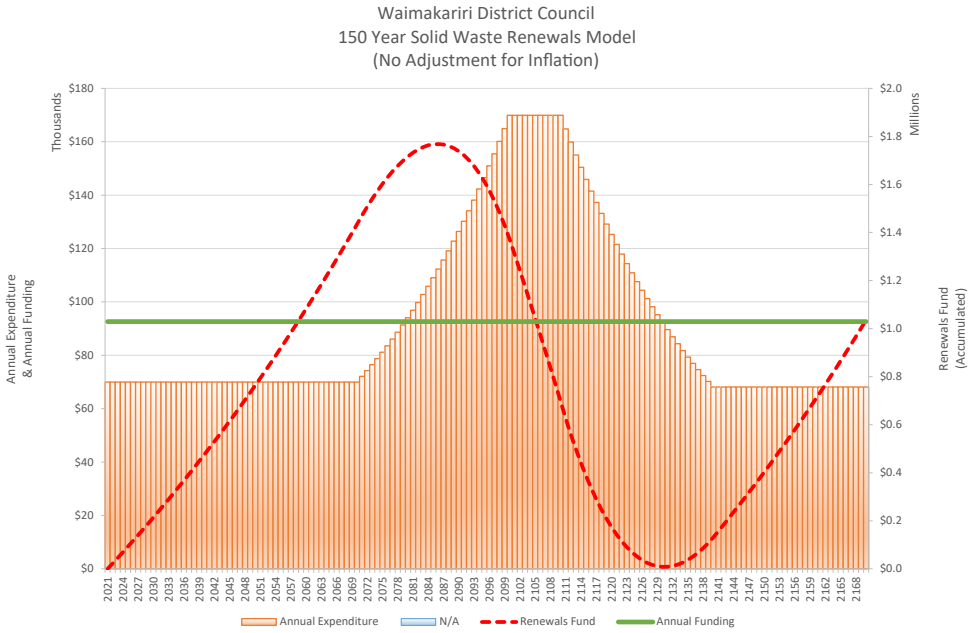
Table 4.5 Significant Solid Waste capital projects

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Capacity Health and Safety	Southbrook RRP reuse & recycling area expansion and Education Centre	Improves LOS and waste minimisation/diversion Reduces health and safety risks Community engagement improved through education centre activities	$1.9m	2021-2023	✓	✓	
	Linkages  SDG 9, 11, 13						
	Assumptions	• Recently identified potential increases to the scale of works are likely to result in an increase to the total costs for this project • Customer usage will increase in relation to population growth					
	Alternative option/s	• Provide satellite recycling stations for rural customers. This increases the risk of illegal dumping and contamination at these sites; there would be additional ongoing maintenance and compliance costs and bringing recycling to the SRRP for consolidation would incur additional transport costs. Equity issues relating to different levels of service for urban and rural ratepayers, and who pays for what, would also need to be considered • Not providing an education centre as part of the upgrade. Council's delivery of waste facility site tours for schools and communities is constrained by not having an education facility at the SRRP					
Capacity Health and Safety Changing Technology	Southbrook RRP pit and access upgrades	Ensures consent compliance Improves LOS and waste minimisation/diversion Reduces waste going to landfill	$1.9m	2021-2022 2024-2025	✓	✓	✓
	Linkages  SDG 9, 11, 13						
	Assumptions	• Any increases to the scale of works is likely to result in an increase to the total costs for this project • This first upgrade will include space/facilities for increased diversion of 'dry' waste, renewal of the rubbish pit floor and diverting the exit road away from the service vehicle working area					
	Alternative option/s	• The pit upgrade could be delayed until necessary for capacity. This is expected to be 2040 with diversion and new collection methodology. Future works will come at a higher cost, the pit floor will need continual maintenance until it is upgraded which disrupts customers and transportation to landfill, and there is limited space in the current configuration of the pit to allow for diversion of materials. The shared service area currently presents health and safety risks to customers which are being managed through traffic control measures such as speed bumps & flexible bollards. There is potentially a need for stop/go control of customer vehicles. Not upgrading the facilities also means a wider variety of materials will not be able to be separated • Building facilities at a separate site will involve costs for land purchase and consenting and there is the potential for additional transportation costs • A partnership could be formed to construct and operate facilities on a cost-share basis, either at the SRRP or another location					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Capacity **Levels of Service** **Changing Technology**	Southbrook RRP expansion stage 2	Caters for future growth and allows for in-District processing of 'dry waste' materials to better divert these from landfill	$6.0m	2037-2040	✓	✓	
	Linkages  SDG 9, 11, 13						
	Assumptions	• Waste quantities will continue to increase in proportion to projected population increases and business development, despite changes to kerbside collection methodologies, requiring further site upgrades and/or expansion • New technologies and markets will make diversion of more materials cost-effective. Facilities will be required to enable diversion and potentially the initial processing of those materials • Future facilities will include equipment to undertake automated sorting to replace the principally 'manual-mechanical' sorting planned for the first upgrade. This will enable more materials to be sorted and diverted from landfill • Increased capacity is available within the current site footprint					
	Alternative option/s	• Continue to send materials to receiving plants in Christchurch or other centres. Income is unlikely to be received from the sale of the materials and there would be additional transport costs on top of the processing costs • Open an additional site within the District. This would require either land purchase or a lease arrangement. Site availability may be limited. It is best to co-locate facilities at or adjacent to disposal facilities to minimise transport costs, and there may be consenting and compliance issues owing to sensitivity of nearby land-use • A partnership could be formed to construct and operate facilities on a cost-share basis, either at the SRRP or another location. Utilising an alternative location would require either land purchase or a lease arrangement. Site availability may be limited because of specific requirements and consenting or compliance issues due to sensitivity of nearby land-use					

4.5.2 Solid Waste replacement programme

Figure 4.16 150 year replacement cost forecast for Solid Waste (in 2021 $)



The solid waste renewals work required over the next 30 years is relatively low given the major assets are in very good condition overall, being only 23 years into a 100 year life cycle.

As shown in figure 4.16, the annual renewals budget is set at a rate necessary to build up the renewals fund enough to fund the large amount of renewals work due in later years. Consequently, depreciation will exceed renewals expenditure resulting in a growing account balance until around 2085. The peak occurring from 2100 to 2110 relates to the replacement of buildings, concrete structures and other major infrastructure at the Southbrook Resource Recovery Park and Oxford Transfer Station.

4.6 Green Space

Principal goals: To provide sports grounds and reserves to enable many recreational opportunities for communities as well as protect and enhance areas of indigenous vegetation.

To provide buildings and halls as community focal points, and meeting spaces for events, gatherings and recreational activities.

Indigenous flora and fauna, and their habitats, especially Significant Natural Areas are protected and enhanced

UN SDG 15

Public spaces and facilities are plentiful, accessible and high quality, and reflect cultural identity

UN SDG 3, 11

Extent	Asset
	Spaces and Places
1	Airfield in Rangiora
6	Cemeteries
8	Civic Spaces
27	Community buildings
17	Cultural Heritage sites
71	Neighbourhood Parks
1,059 ha	Parks and reserves
4	Privately leased holiday parks – camping grounds at Ashley Gorge, Waikuku, Woodend and The Pines/ Kairaki Beaches
3	Public Gardens
63	Public toilets (The Council maintains 61 located on Council reserves)
25	Sports Parks
273	Streetscapes

Total value of assets: $106.2m (Depreciated replacement cost 30 June 2020, excludes land value apart from the Airport)

Figure 4.17 Type of Capital Expenditure - Green Space

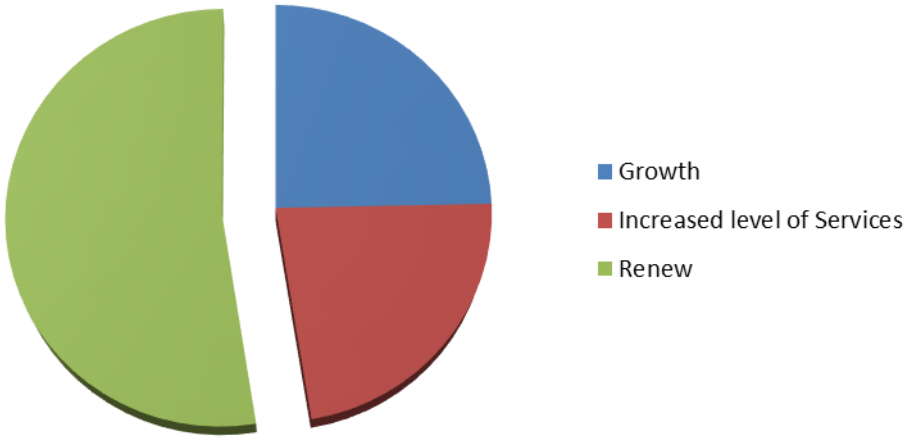
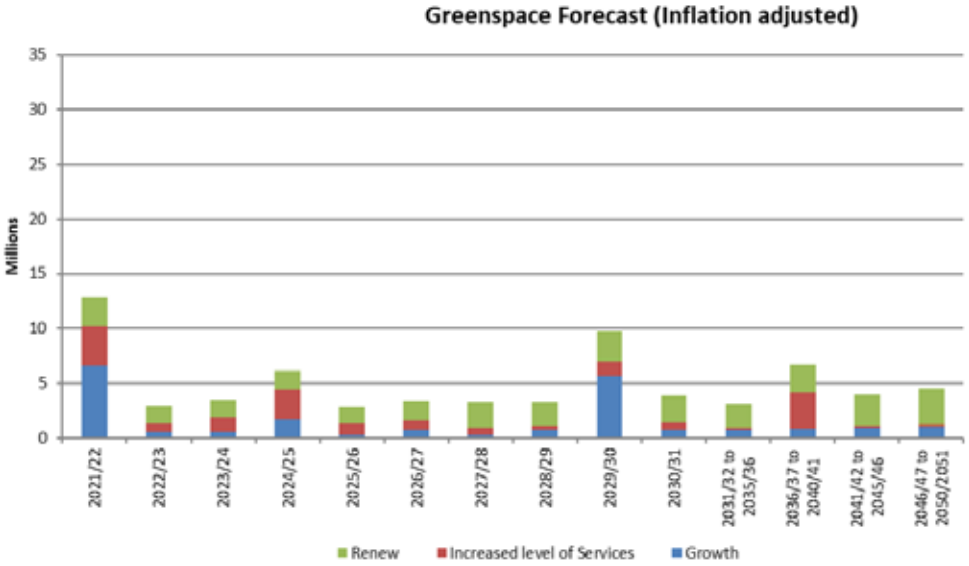


Figure 4.18 Projected Capital Expenditure - Green Space



4.6.1 Green Space capital works programme

Figure 4.17 shows that replacements make up at least half of the capital expenditure associated with the Green Space assets.

Figure 4.18 shows the projected capital expenditure for the first 10 years, followed by five year blocks to cover the 20 years. The figures shown for each of the five year blocks between 2031/32 and 2046/51 are the average annual expenditure over that period.

Figure 4.18 shows the highest amount of capital expenditure is expected in the 2021/22, 2024/25 and 2029/30 financial years. This is due to the purchase of land in 2021/22 and subsequent construction of new community facilities at Pegasus Town in 2024/25 and north Woodend in 2029/30. The spike in 2036 to 2041 relates to the provisional allowance for upgrades to the indoor court facility in Rangiora. $40,000 has been allocated in 2024/25 to investigate whether the projected demand necessitates additional court space.

Other capital expenditure over this period is attributed to the ongoing renewal of existing Green Space assets, and an improved renewal programme for community facilities now that the asset capture for these activity areas has been completed.


Sports ground improvements
New Pegasus community facility
New north Woodend community facility
Mainpower Stadium extension
Arohatia te Awa (Cam River improvements)

Table 4.6 Significant Green Space capital projects

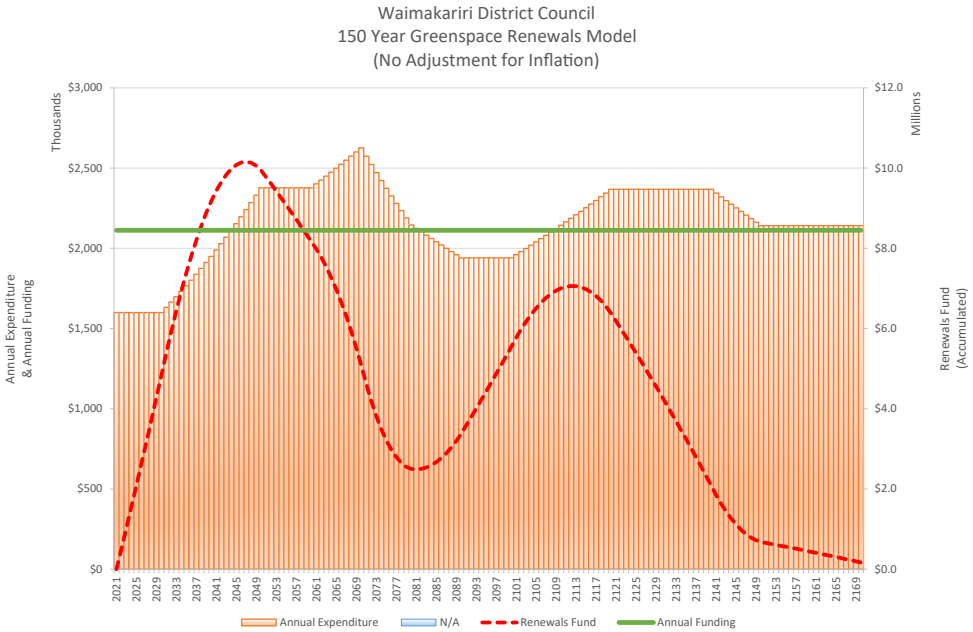
Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Sports field availability/ quality	Improvements to existing sports grounds	Better utilisation of sports fields Improving the quality of playing surfaces	$1.8m	2021-2031	✓	✓	
	Linkages  SDG 3, 11						
	Assumptions	• Once improved, the existing sportsgrounds will have sufficient capacity to cater for growth • Population and demographic trends continue as expected • The move away from organised sports to informal sports and recreation identified in the updated Sports Facilities Strategy continues					
	Alternative option/s	• Improvements to sports grounds are assessed as part of the Sports Facilities Strategy which is updated every 3 years to inform the LTP. This review takes into account trends and population growth to ensure the recommended improvements remain appropriate • Focus on providing new facilities to meet growth and demand instead of investing in existing sports grounds to maximise their availability/usage. This would be a much more expensive option and there would continue to be inefficient use of existing facilities					
Community facility capacity	New community facility at north Woodend	Manages impacts of growth and levels of service shortfall in north Woodend for community facility provision	$4.3m (land purchase) $4.8m (facility)	2021-2022 2029-2030	✓	✓	
	Linkages  SDG 3, 9, 11						
	Assumptions	• Existing community facilities in Woodend will not be sufficient in the future to meet the demand arising from continued population growth in Ravenswood, as identified in the updated Community Facilities Strategy • Suitable land will be available to be purchased at an affordable price					
	Alternative option/s	• Review the provision of community facility space (including aquatics) closer to the planned delivery date to determine if Council's preferred option is still the best option. This would include a reassessment of population growth and demand in this area • Investigate a long term lease for a community facility in the Ravenswood subdivision • The purchase could be delayed but the cost of land is likely to increase over time • Not proceed with a community facility in north Woodend, utilising the Woodend Community Centre and proposed new Pegasus Community Centre instead. However, the growth triggered by the Ravenswood development will exceed levels of service for the provision of community facilities and will not be able to be met by existing provision					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Community facility capacity	New community facility at Pegasus	Manages impacts of growth and levels of service shortfall in Pegasus for community facility provision	$1.8 (land purchase) $500k (feasibility study) $2.2m (facility)	2021-2022 2023-2024 2024- 2025	✓	✓	
	Linkages  SDG 3, 9, 11						
	Assumptions	• Existing community facilities will not be sufficient in the future to meet the demand arising from continued population growth in Pegasus, as identified in the updated Community Facilities Strategy • Suitable land will be available to be purchased at an affordable price					
	Alternative option/s	• The completion of the feasibility study prior to development will determine whether the preferred option remains appropriate • Options exist to lease space in Ravenswood/ Pegasus but a new Council-owned facility is a more cost-effective approach long term • The purchase could be delayed but the cost of land is likely to increase over time. There would also be increased pressure on existing facilities and a bigger gap between the services the community desires and those able to be delivered					
Indoor sports stadium capacity	Extension to the Mainpower Stadium		$10m	2040-2041	✓		
	Linkages  SDG 3, 9, 11						
	Assumptions	• The population in the District continues to grow as forecast and demand for indoor court facilities remains high • Improvements are able to be made at Mainpower Stadium to expand the indoor court space					
	Alternative option/s	• Not provide additional space for indoor sports and look to manage increased demand through existing assets or partnerships with other providers • Look at alternative locations or options rather than Mainpower Stadium					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Biodiversity enhancement	Arohatia te Awa (Cherish the River)	Links land parcels together, increases public access, enhances biodiversity and has the potential to improve environmental outcomes for the waterway over the longer term	$1.2m	2021-2031		✓	
	Linkages  SDG 3, 11, 13, 15						
	Assumptions	• Biodiversity and environmental improvements across the District remain a key priority for Council going forward • Land purchase or easements are able to be progressed to allow the areas next to the waterways to be linked together					
	Alternative option/s	• Not fulfil Council's ZIPA obligations or respond to the identified need to protect, and enhance biodiversity leading to worse environmental outcomes and possible loss of reputation • Council could re-negotiate to scale back the extent of its commitment but this is not recommended for the above reasons and also because the project was subject to extensive community consultation					

4.6.2 Green Space replacement programme

Figure 4.19 150 year replacement cost forecast for Green Space (in 2021 $)



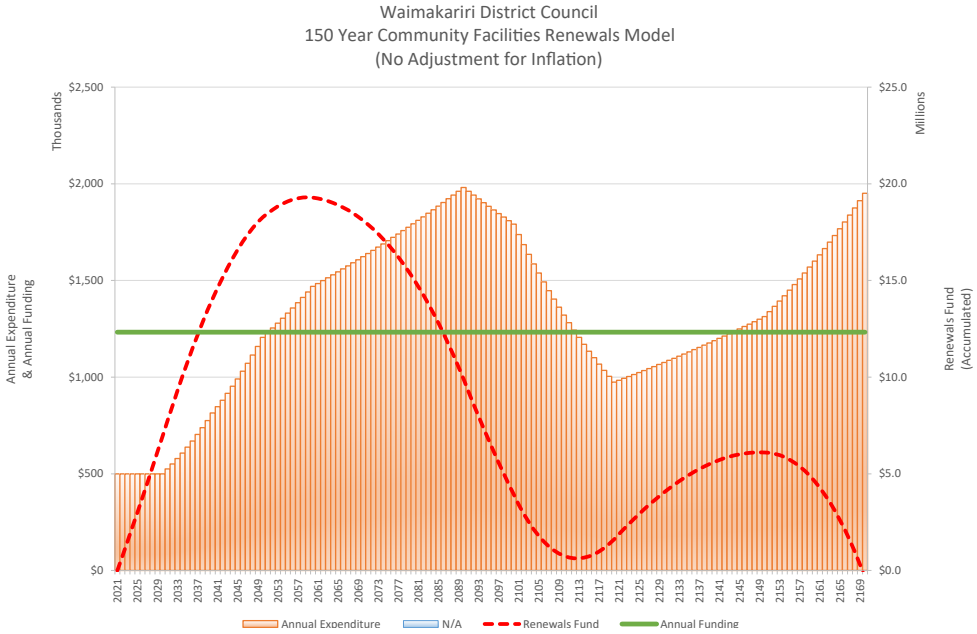
Renewals of Green Space assets occur when they are no longer able to meet agreed level of services. The rate of asset renewal is intended to maintain the overall condition of the Green Space infrastructure at a standard which reflects its age profile and ensures the community's investment is maintained.

The level of expenditure on asset renewals varies from year to year, reflecting the age and condition profiles of the assets, the on-going maintenance demand, customer service issues and the differing economic lives of individual assets.

The continued growth in the District following the earthquakes has resulted in a significant number of additional Green Space assets being installed within reserves over recent years which generally have an average life expectancy of between 20 and 50 years. This is represented by the overall rise in expected renewals costs from 2030 when a number of the new assets will begin to require replacement.

The peak from about 2060 to 2070 reflects the date the majority of garden beds were captured in the system and given a useful life of 50 years. The reality is that these horticultural assets are subject to on-going renewal and maintenance programmes as outlined in the Green Space Activity Management Plan.

Figure 4.20 150 year replacement cost forecast for community facilities (in 2021 $)



4.7 Aquatic Facilities

Principal goal: To provide aquatic facilities to enable recreational and educational opportunities for communities.

Public spaces and facilities are plentiful, accessible and high quality, and reflect cultural identity

UN SDG 3, 11

Extent	Asset
	Aquatic Facilities
3	25 metre pools (one outdoor and two indoor)
3	Learn-to-swim pools (one outdoor and two indoor)
1	Leisure pool and spa at Dudley Park Aquatic Centre
1	Seasonal paddling pool at Waikuku

Total value of assets: $19.5m (Total replacement cost - 30 June 2020, facilities only)

4.7.1 Aquatic Facilities capital works programme

Figure 4.21 shows that the majority of the capital expenditure over the next 30 years for the aquatics infrastructure assets is related to increased levels of service.

Figure 4.22 shows the projected capital expenditure for the first 10 years, followed by five year blocks to cover the 20 years. The figures shown for each of the five year blocks between 2031/32 and 2046/51 are the average annual expenditure over that period.

The following chart indicates the highest amount of capital expenditure is expected in the 2031-2036 period due to the upgrade of the facilities at the Kaiapoi Aquatic Centre. Construction expenditure for a new eastern aquatic facility is shown in the 2036/41 block.

The rest of the capital expenditure over this period is attributed to an improved renewal programme for aquatic facilities now that the asset capture for this activity area has been completed. This varies from $25,000 in 2022/23 to nearly $1m in 2025/26 but the smaller figures are not easily seen because of the scale of the graph.

Figure 4.21 Type of Capital Expenditure - Aquatic

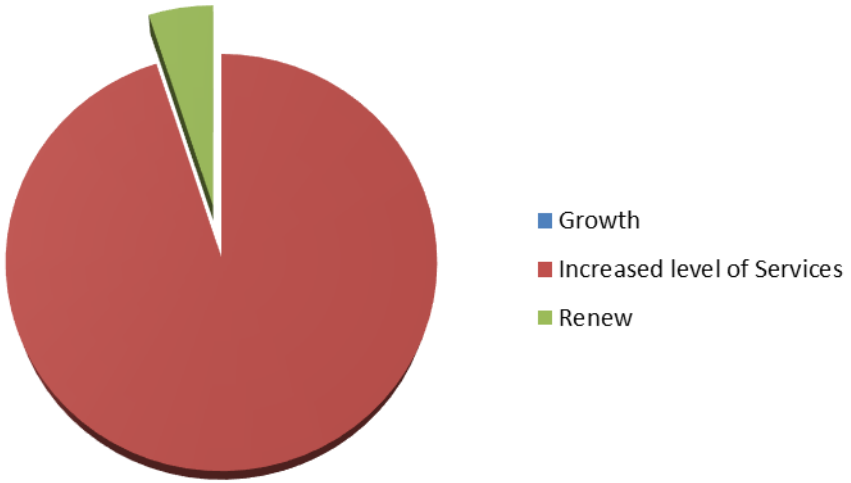


Figure 4.22 Projected Capital Expenditure - Aquatic

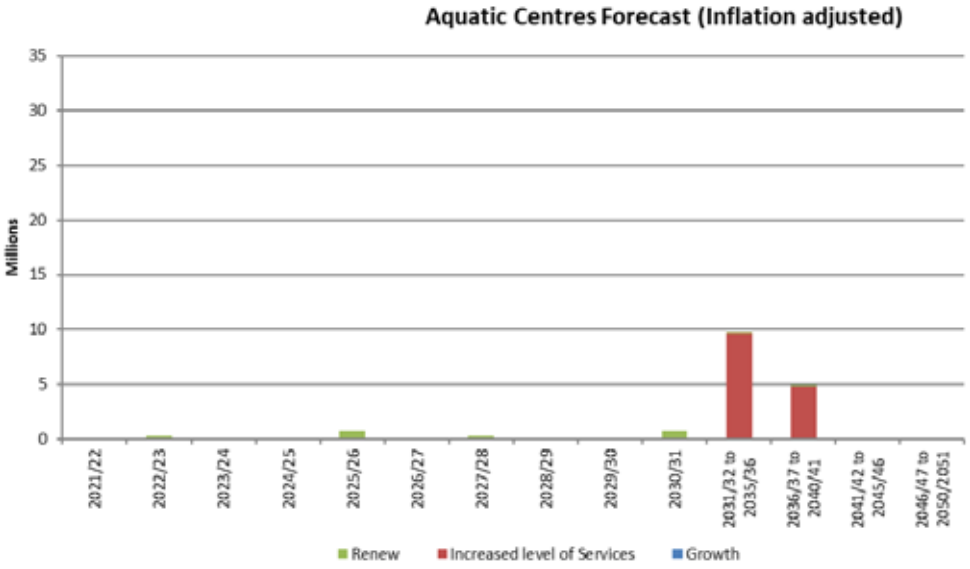
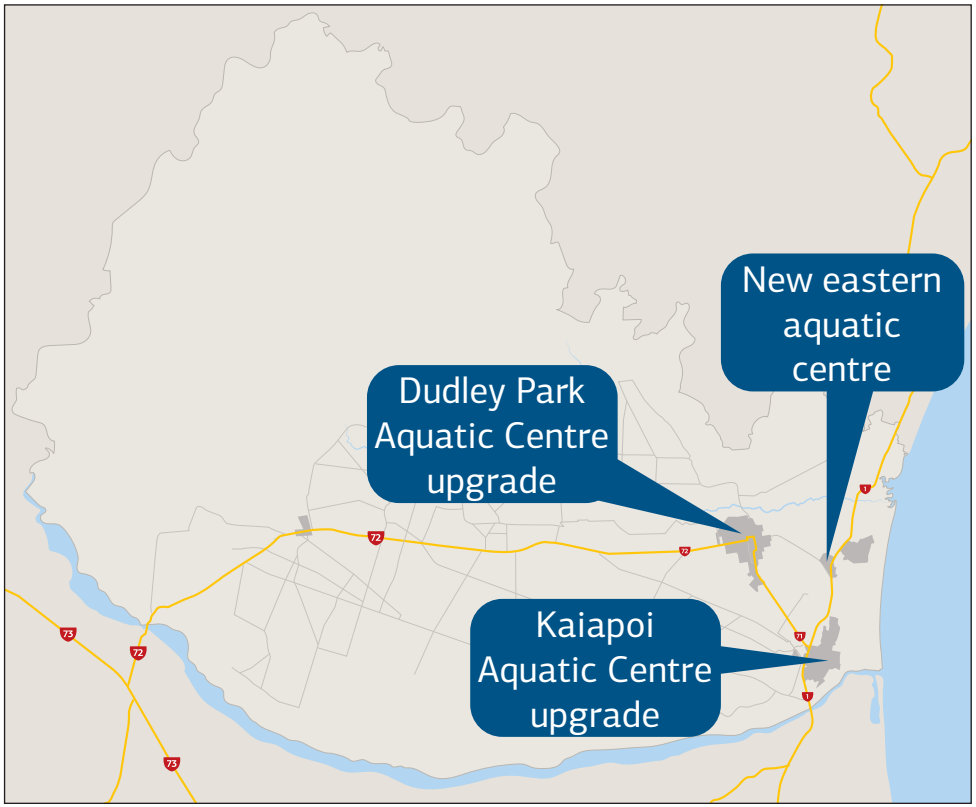


Table 4.7 Significant Aquatics capital projects

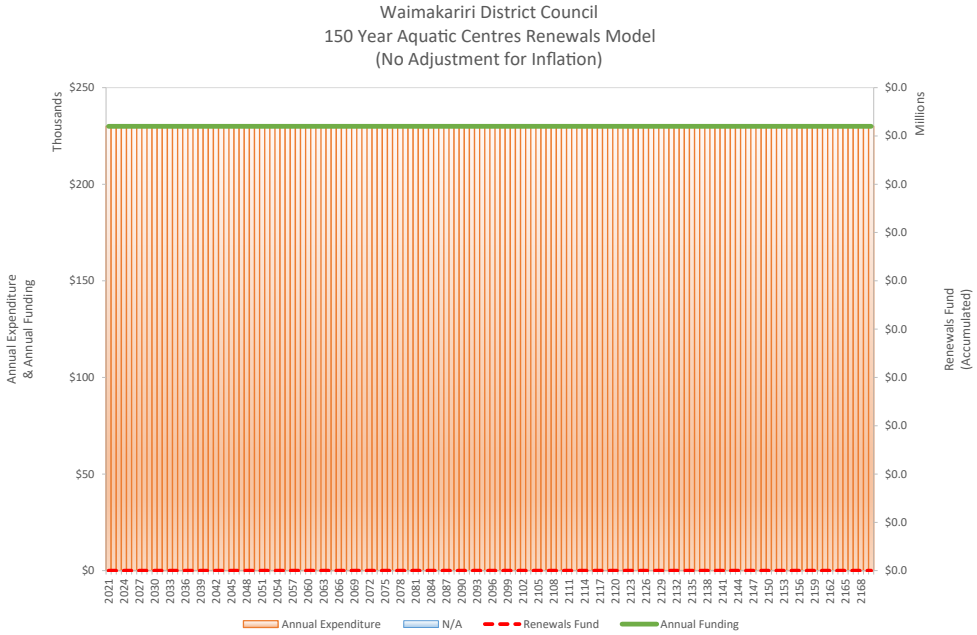
Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Capacity Levels of Service	Future development of new Aquatic Centre in the east of the District	Enables community outcomes to be achieved for high quality public facilities and meeting community needs	$20m	2035-2040	✓	✓	
	Linkages  SDG 3, 9, 11						
	Assumptions	• The District's population will continue to grow as projected, both in terms of numbers and demographic profiles. Settlement will continue as expected in the Woodend Ravenswood area • There will be no change in expected recreation preferences for aquatic facilities					
	Alternative option/s	• The purchase could be delayed but the cost of land is likely to increase over time • Other Council land could be repurposed, however, there is nothing currently available that would not displace other groups or create larger rehoming issues. Not proceeding with the project would eventuate in demand far-outweighing the service able to be provided					
Capacity Levels of Service	Upgrade Kaiapoi Aquatic Centre	Enables community outcomes to continue to be achieved for high quality public facilities and meeting community needs	$15m	2030-2035	✓	✓	✓
	Linkages  SDG 3, 9, 11						
	Assumptions	• The District's population will continue to grow as projected, both in terms of numbers and demographic profiles There will be no change in expected recreation preferences for aquatic facilities					
	Alternative option/s	• The District Aquatic Facilities Strategy 2021-2031 recommends that the existing Kaiapoi pool site be redeveloped within the next ten years to better align the future delivery of services with changing demographics and community needs. However, this option has been considered within the context of all Council's projected expenditure and the community's ability to pay. To this end a decision has been made to manage current services and expectations while pushing the upgrade out as detailed above. Further delay to this work would see increased pressure on existing facilities and a bigger gap between the services the community desires and those able to be delivered					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Capacity Levels of Service	Upgrade Dudley Park Aquatic Centre	Enables community outcomes to continue to be achieved for high quality public facilities and meeting community needs	$15m	2040-2045	✓	✓	✓
	Linkages  SDG 3, 9, 11						
	Assumptions	• The District's population will continue to grow as projected, both in terms of numbers and demographic profiles • There will be no change in expected recreation preferences for aquatic facilities					
	Alternative option/s	• The District Aquatic Facilities Strategy 2021-2031 recommends that the existing Dudley Park Aquatic Centre is refreshed, with new pools added and existing facilities upgraded, within the next ten years to better align the future delivery of services with changing demographics and community needs. However, this option has been considered within the context of all Council's projected expenditure and the community's ability to pay. To this end a decision has been made to manage current services and expectations while pushing the upgrade out as detailed above. Further delays would see increased pressure on existing facilities and a bigger gap between the services the community desires and those able to be delivered					



4.7.2 Aquatic Facilities replacement programme

Figure 4.23 150 year replacement cost forecast for Aquatics (in 2021 $)



Aquatics has a number of short life assets making it easy to smooth the renewal of these into a flat line over the long term (150 year) period. The exceptions to this are the aquatics buildings which have been included in the graph for community facilities (figure 4.20) and some larger expenditure items of plant and equipment. These include the replacement of HVAC and pool heating equipment which requires renewal approximately every 20 to 30 years to ensure the level of service provided by the pools remains constant.

4.8 Property

Principal goals: To support efficient and effective administrative and governance functions by providing office and service centre spaces that appropriately meet the physical accommodation needs of Council staff, customers, governance and other stakeholders, as well as spaces for public meetings and official occasions.

To provide fit-for-purpose and affordable housing for targeted elderly citizens.

People's needs for mental and physical health and social services are met

UN SDG 3, 16

Extent	Asset
600 hectares	Forestry land
83	Individual Rangiora airfield licenses
438	Leases/licenses of Council property
112	Housing for the Elderly units
5	Rental houses
3	Mixed use business areas (Kaiapoi)
3	Offices/service centres

Council provides targeted low cost housing for people who are over 65 years old at seven sites. The one bedroom units are contained within 45 buildings.

A number of other houses have been purchased by the Council for other purposes, usually associated with land acquisitions for infrastructure such as roads. These are generally only held as long as it takes to complete the new infrastructure work or the sites are able to be on-sold in an optimal way.

Three Council-owned service centres and a number of leased buildings provide office and service centre spaces to meet the accommodation needs

of staff and customers, and spaces for public meetings and official occasions. Library services are also provided out of two of these.

Total value of assets: $32.6m (30 June 2020, excludes leases and licenses and land apart from business areas)

4.8.1 Property capital works programme

Service Centres

Figure 4.24 shows that the majority of the capital expenditure over the next 30 years associated with the property infrastructure assets is related to growth.

Figure 4.25 shows the projected capital expenditure for the first 10 years, followed by five year blocks to cover the 20 years. The figures shown for each of the five year blocks between 2021/32 and 2046/51 are the average annual expenditure over that period.

The graphs show the indicative forecast over 150 years. This picks up several cycles of replacements and includes allowances for various refurbishments that extend the life of existing buildings. Ongoing renewals and refurbishments are proposed using a cycle of between 15 and 20 years. A larger mid-life spike indicates where more significant renewals are catered for at intervals of around 35 years.

Figure 4.24 Type of Capital Expenditure – Service Centres

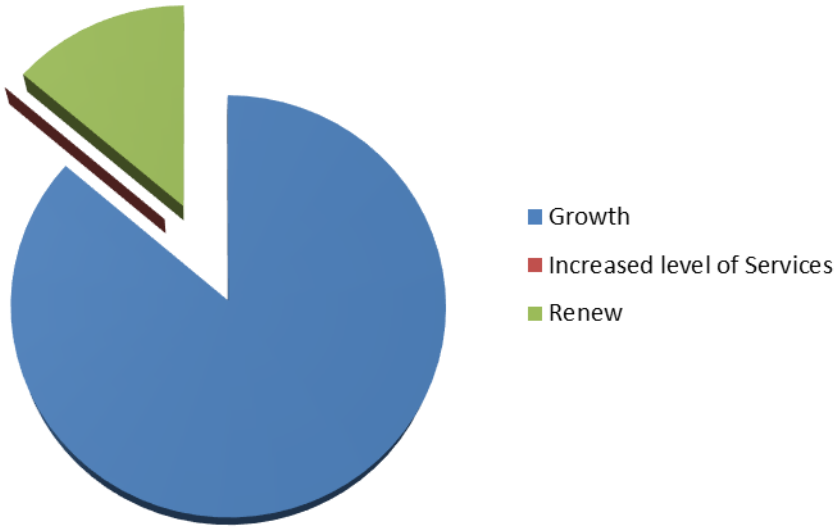
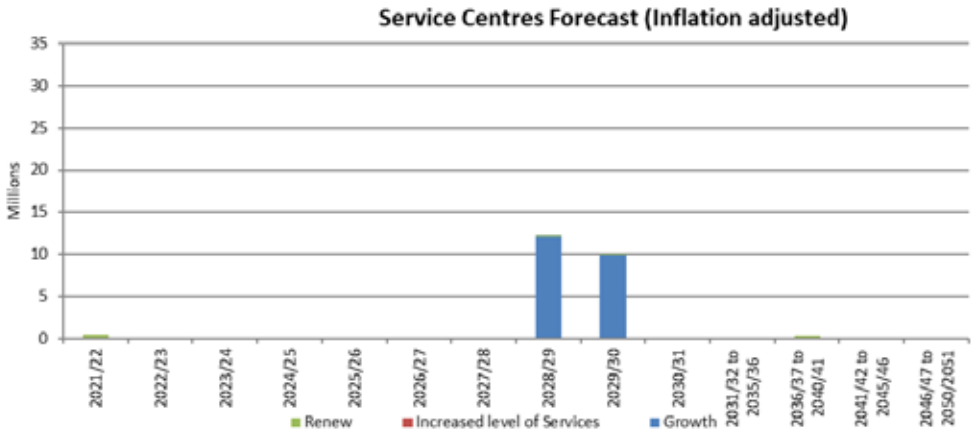


Figure 4.25 Projected Capital Expenditure – Service Centres



Housing

No allowance has been made for growth therefore the total number of units supplied will remain at 112. Existing rental income is adequate to cover the long-term costs of ownership, including the replacement of the units when they reach approximately 90 years old.

The capital expenditure forecast comprises renewal and replacement work and does not include any allowances for changed levels of service. A 10 year programme of mid-life refurbishments is underway. This includes some elements of enhancements but these are generally associated with changed regulatory requirements, the use of better materials and products, or design improvements which have the same level of expenditure as work done on a 'like for like' basis. The refurbishment programme is averaged over the 10 years to accommodate a practicable delivery capacity and to reflect that it is somewhat dependant on access to units as tenants vacate.

Figure 4.26 Type of Capital Expenditure – Housing

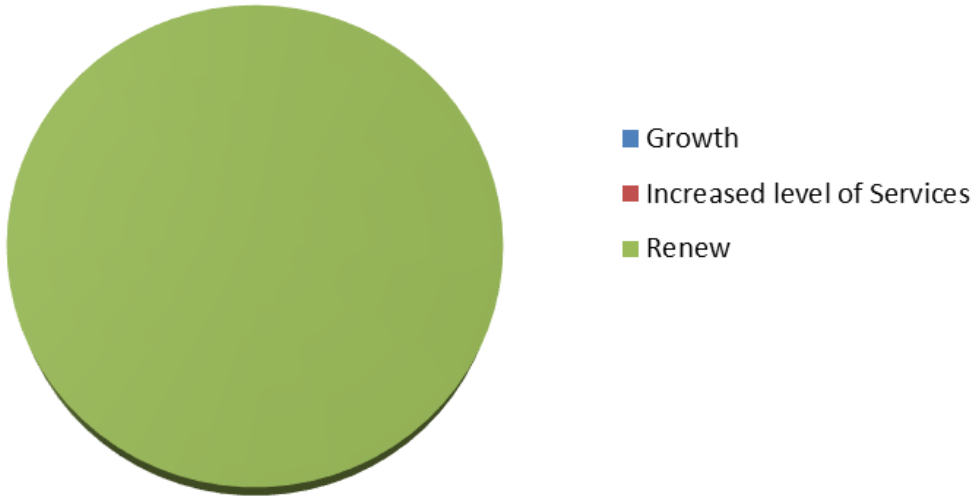
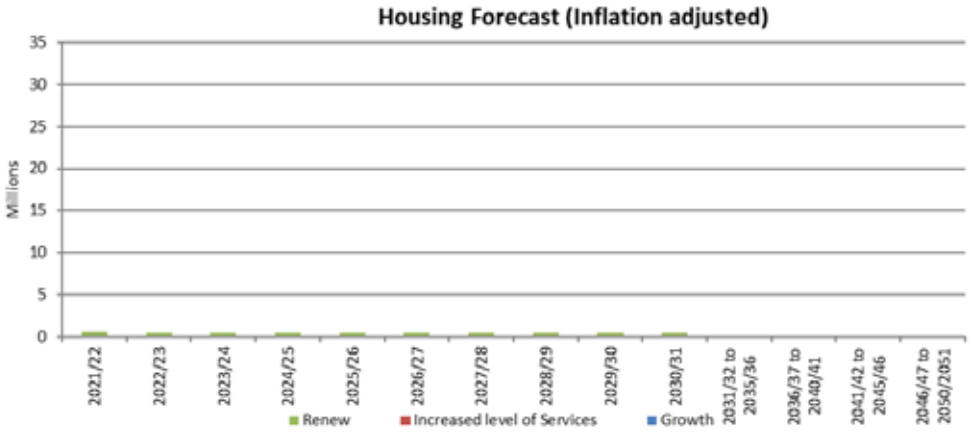


Figure 4.27 Projected Capital Expenditure – Housing



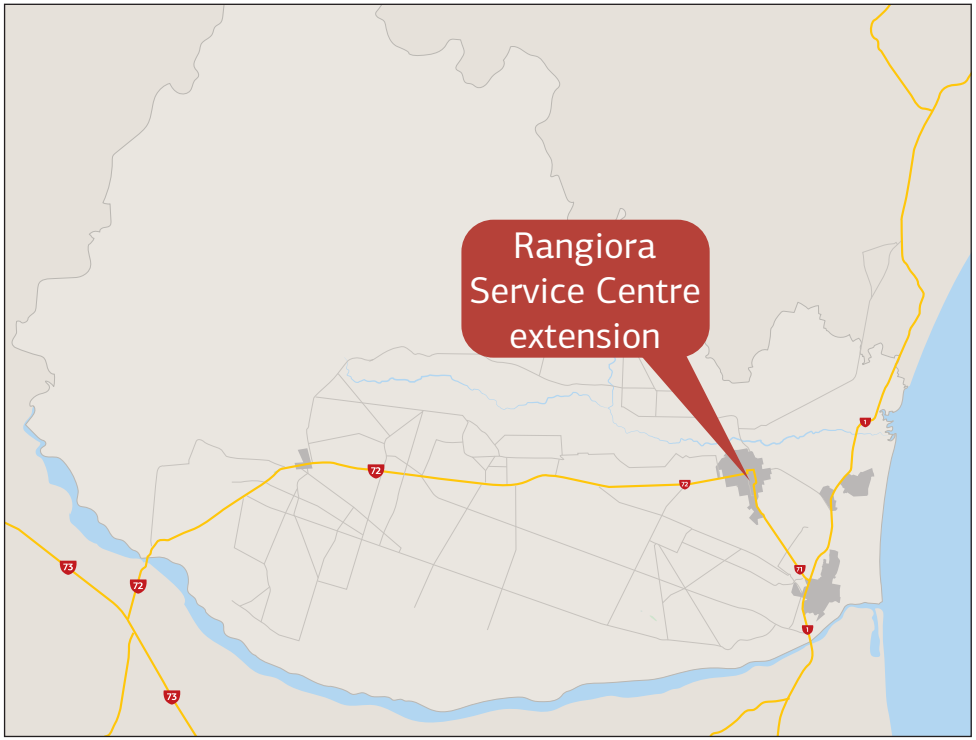


Table 4.8 Significant Property capital projects

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021$)	When are we doing it	Growth	LoS	Renew
Council HQ Capacity	Rangiora Service Centre extension	Manage impacts of growth	$18m	2028-2030	✓		
	Linkages  SDG 9, 11						
	Assumptions	• WDC as an entity continues with a similar structure over the 30 years • The Farmers office space lease is able to be extended beyond 2028. If not, additional temporary accommodation may have to be leased until 2030 and fitted out to cater for increased staff numbers arising from population growth. Alternatively, the need for office space may be reduced depending on the outcome of the 3 Waters Review					
	Alternative option/s	• Leasing additional accommodation, both short term and in relation to the proposed extension to the existing building, could alleviate pressure but is less cost effective over the long term and compromises organisational performance and customer service • A completely new HQ/ public space building is likely to exceed $40m. If an extension to the HQ proceeds as planned, the option of developing this in conjunction with the library extension may reduce some costs and optimise the benefits to the community					

4.8.2 Property replacement programme

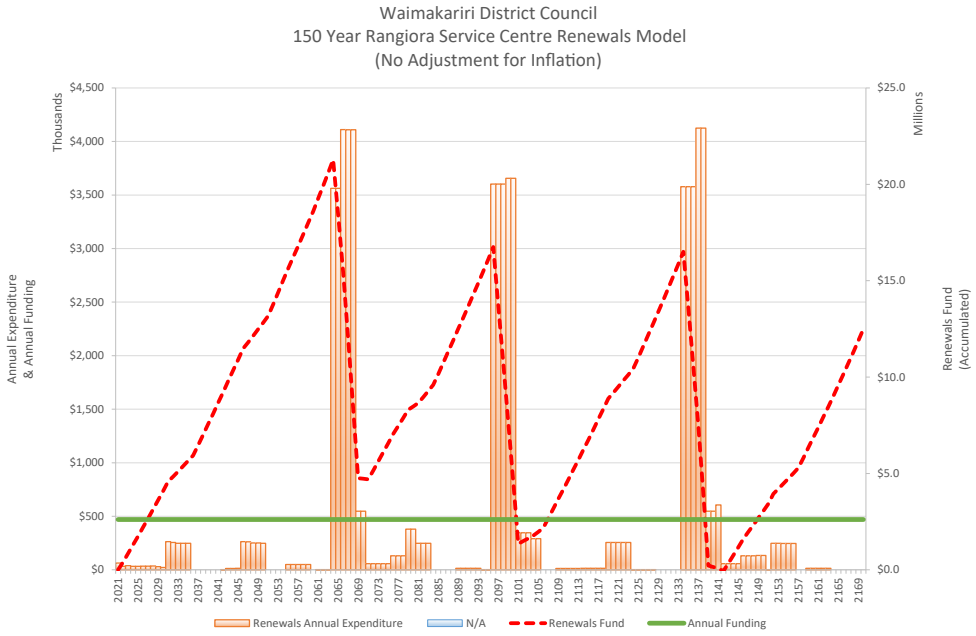
Rangiora Civic Precinct

Figure 4.28 shows an extension of the Rangiora Service Centre near the end of the LTP period, to bring staff from three other buildings under one roof and to accommodate growth over the next 30 years. The existing building was refurbished in 2020 but the extent of the works were scaled back considerably due to the potential impact of Covid-19 on rate-payers. This elevates the risk around the existing facility, and increases the pressure on capacity in the interim. This issue can be addressed through leasing additional office space but is considered to be less optimal over the long term.

This renewal model assumes office accommodation/service centres are replaced after they come to the end of their economic life at 70 years. With its mixed age the existing Rangiora Service Centre and the extension would be replaced at two separate times with each replacement broadly conforming to a 70 year cycle.

Significant uncertainty exists around the scale and nature of the proposed extension as it is part of a larger campus development that includes the Rangiora Library, public amenity space and town centre parking. The model is therefore indicative and may be subject to change.

Figure 4.28 150 year replacement cost forecast for the Rangiora Service Centre (in 2021 $)



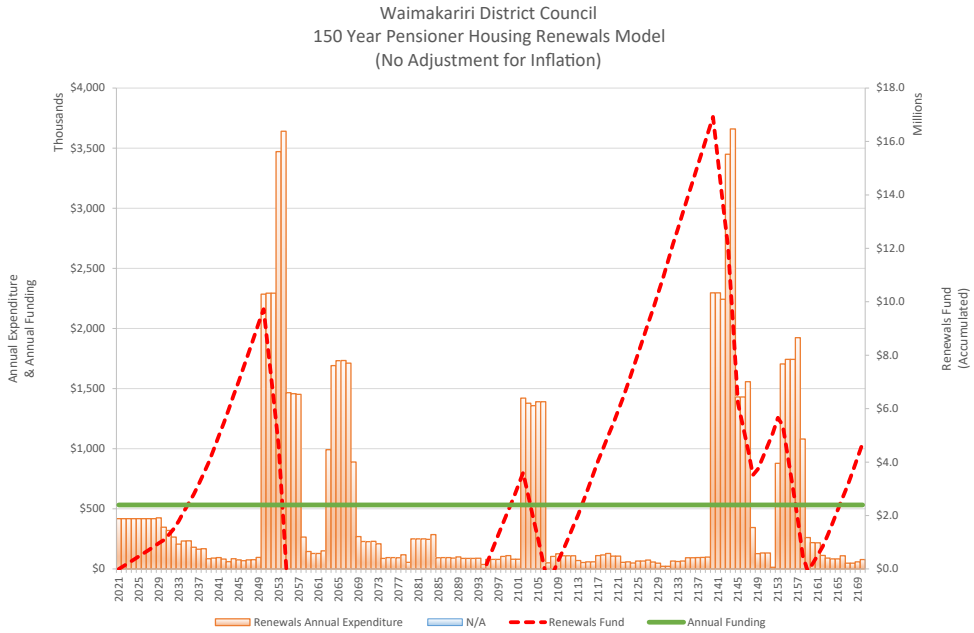
Housing for the Elderly

The renewal model shows annual expenditure over the next 10 to 11 years of just over $400,000 per year to address building and site infrastructure, and the mid-life refurbishment of units at approximately 45 years of age. This is averaged to reflect the delivery strategy around vacancies, which are variable, and also allow for adequate staff resources to execute the refurbishments.

Over the balance of the 30 year IS period expenditure is modest, however, just beyond this substantial reinvestment is required as the various sites reach approximately 90 years of age and require replacement. The replacement of the relatively new Ranui Mews is scheduled in the first few years of the 22nd century.

Substantial growth in demand is anticipated over the next 30 years however no allowance has been made for the expansion of the portfolio. Council is yet to grapple what role it will have, if any, in responding to growth in demand, or for other social and targeted housing needs.

Figure 4.29 150 year replacement cost forecast for Pensioner Housing (2021 $)



4.9 Libraries

Principal goal: To inform, educate, empower, entertain and inspire the community, by providing them with quality, easily accessible electronic and print collections and spaces that encourage social interaction and wellbeing.

People have wide ranging opportunities for learning and being informed

UN SDG 3, 4

Public spaces and facilities are plentiful, accessible and high quality, and reflect cultural identity

UN SDG 3, 11

Extent	Asset
33,000	Electronic resources
144,000 items	Library collections/items
347.5m²	Oxford Library and Service Centre
1,892m²	Ruataniwha Kaiapoi Civic Centre: Kaiapoi Library, Service Centre, Museum and Art Space
1,415m²	Trevor Inch Memorial Library Rangiora: Chamber Gallery and Citizens' Advice Bureau

Total value of assets: $21.9m (30 June 2020, excludes land)

4.9.1 Libraries capital works programme

Figure 4.30 shows that replacements make up the majority of the capital expenditure over the next 30 years associated with the library infrastructure assets.

Figure 4.31 shows the projected capital expenditure for the first 10 years, followed by five year blocks to cover the 20 years. The figures shown for each of the five year blocks between 2031/32 and 2046/51 are the average annual expenditure over that period.

The capital expenditure shown in years 2027 to 2029 relate to the proposed library extension.

Figure 4.30 Type of Capital Expenditure – Libraries

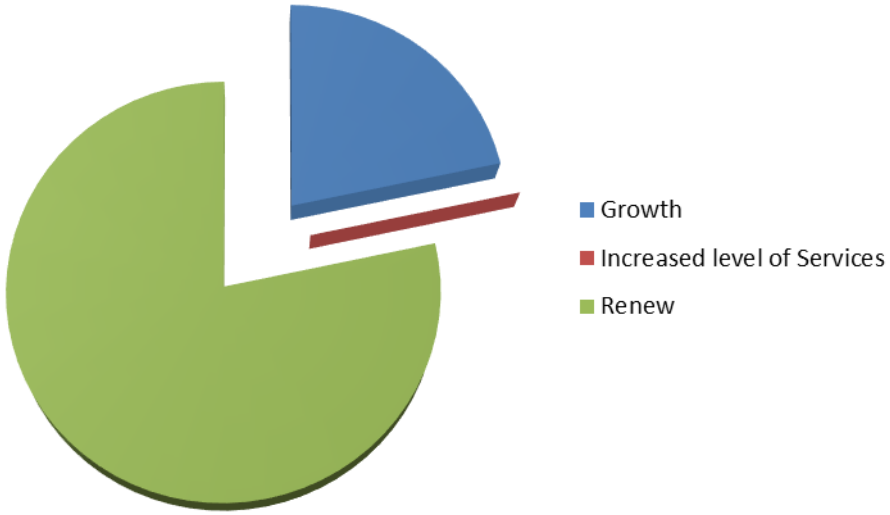
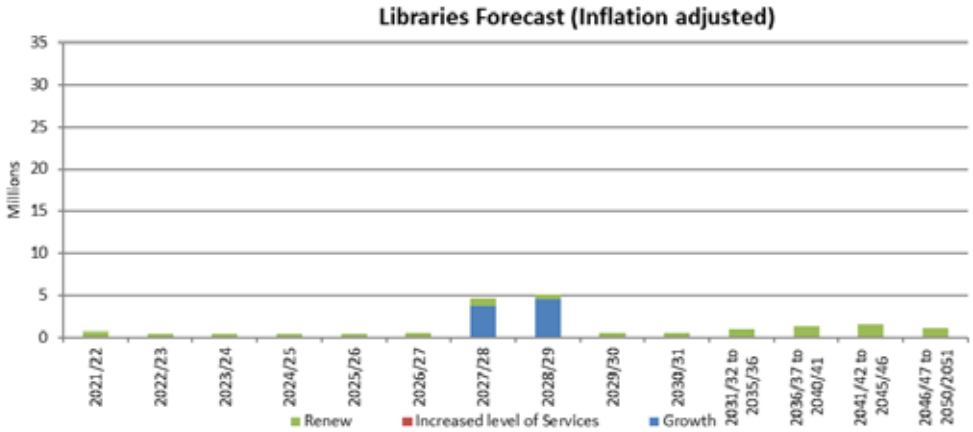


Figure 4.31 Projected Capital Expenditure – Libraries



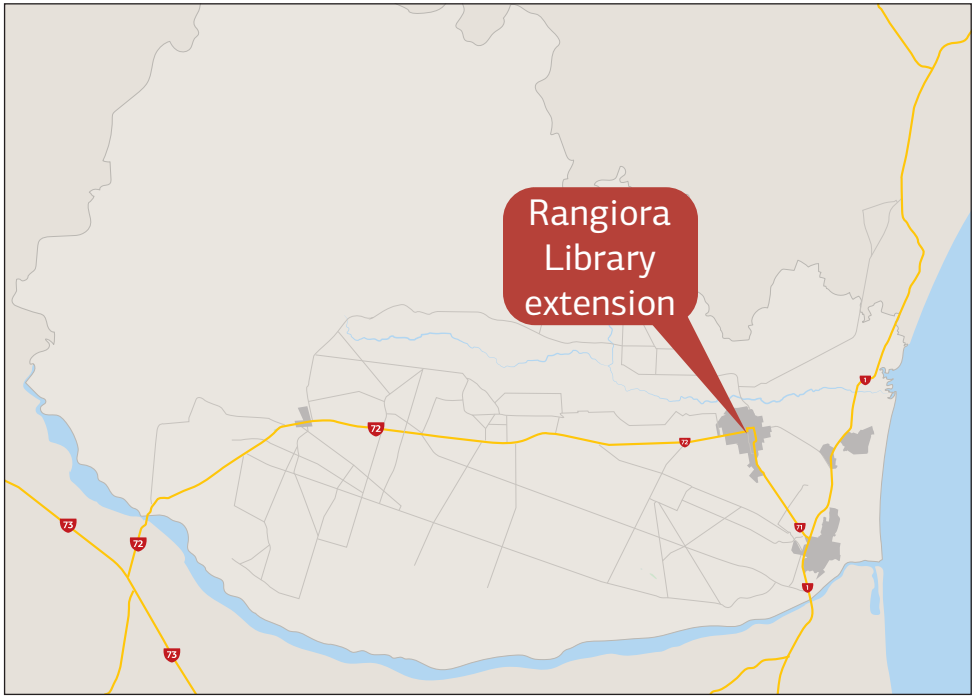
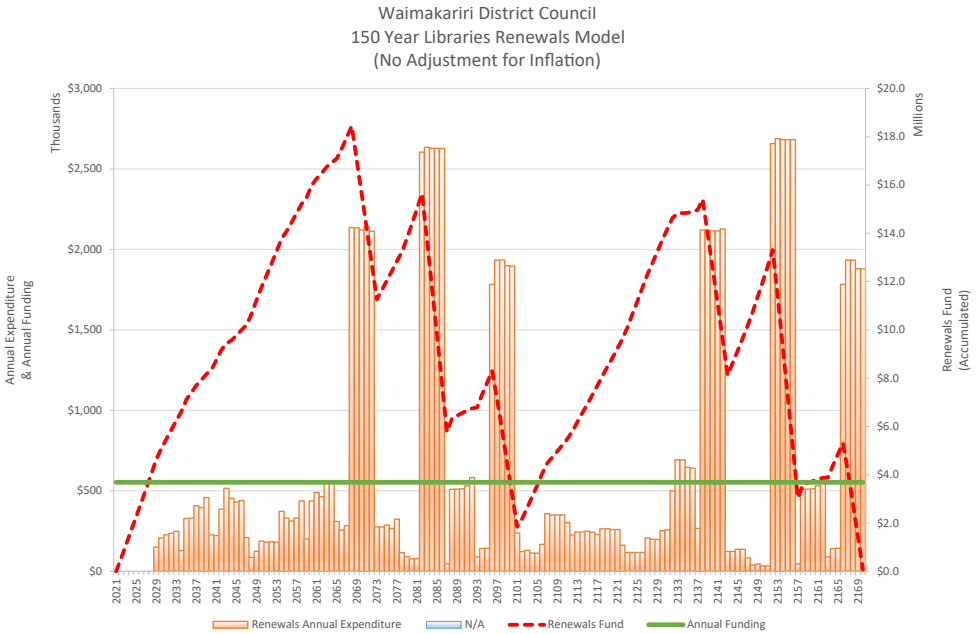


Table 4.9 Significant Library capital projects

Issue	What are we doing?	What is the benefit?	How much will it cost? in 2021$)	When are we doing it	Growth	LoS	Renew
Library Capacity	Rangiora Library extension	Manage impacts of growth	$7m	2027 to 2029	✓		✓
	Linkages			SDG 3, 4, 9, 11, 16			
	Assumptions	• Current provision will be stretched because of population growth and demand through until 2028, requiring some temporary solutions to cater for demand The proposed mix of library provision will remain relevant despite the increasing access of individuals to technology					
	Alternative option/s	• Decisions about the future expansion of the Council's Rangiora Service Centre may also impact design options for the Rangiora Library					

4.9.2 Libraries replacement programme

Figure 4.32 150 year replacement cost forecast for Libraries (in 2020 $)



The renewals planned for the Rangiora Library, as part of the refurbishment project, will in part extend the life of the existing building, and the timing of ongoing renewals is heavily influenced by the substantial extension in 2027/29. Ongoing renewals and refurbishments are proposed on a cycle of between 15 and 20 years with a larger mid-life spike where more significant renewals are catered for at intervals of around 35 years.

The renewal model shows an extension of the Rangiora Library near the end of the LTP period to cope with growth and in part address renewals within the existing building. This was previously scheduled for 2023 but has been deferred due to the potential impact of Covid-19 on ratepayers. Some pre-existing issues have now been addressed such as the aged and poorly performing heating and ventilation. Deferring the extension does, however, elevate the risk of increased repairs and maintenance, and fail to address capacity issues in the interim.

The model has an assumed economic life for libraries of 70 years, with the Kaiapoi and Oxford Library/Service Centres replaced on that basis. With its mixed age the existing Rangiora Library and the extension would be replaced at two separate times with each replacement broadly conforming to a 70 year cycle.

Significant uncertainty exists around the scale and nature of the proposed extension as it is part of a larger campus development that includes the Rangiora Service Centre, public amenity space and town centre parking. The model is therefore indicative and may be subject to change.

4.10 Other Significant Projects

Other multi-disciplinary infrastructure projects have been identified as significant capital projects because of the impact they have on the overall financial picture, or their significance to the community. These are included in the following table.

Table 4.10 Other significant capital projects

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
District Regeneration	Regeneration of former Red Zones	Enhanced environment	$3m	2021-2026		✓	
	Linkages  SDG 3, 11, 13, 15						
	Assumptions	• All red zone land will be developed as reserve land, and for other uses, as per the Recovery Plan					
	Alternative option/s	• Red zone land remains undeveled and maintained by Council. However, this would not meet community expectations or fulfil the vision and values of the Recovery Plan, nor the obligations placed on the Council by the prior land divestment agreement with the Crown. The majority of Regeneration projects are already completed, with a number of multi-year projects also currently underway					
Town Centres Growth & Revitalisation	Rangiora Town Centre – additional public parking	Manage impacts of growth Encourage retail activity	$6.1m	2021-2025	✓	✓	✓
	Linkages  SDG 9, 11						
	Assumptions	• Town centres continue to have a role for local and District populations • Rangiora will continue to be the main service town for the District					
	Alternative option/s	• Restrain investment in town centre enhancement • Continue to encourage private on-site parking to meet demand, expand and enforce time-limited street parking to encourage parking turnover, or provide car parking further away from the Rangiora Town Centre These alternative solutions may make the town centre less attractive to visit, thereby discouraging users and negatively impacting on the centre's growth and economic viability					

Issue	What are we doing?	What is the benefit?	How much will it cost? (in 2021 $)	When are we doing it	Growth	LoS	Renew
Town Centres Growth & Revitalisation	Kaiapoi Town Centre Plan (KTC2028) improvements	Enhanced environment	$1m	2021-2023			✓
	Linkages  SDG 3, 8, 9, 11						
	Assumptions	• Town centres continue to have a role for local and District populations • Kaiapoi Town Centre will continue to grow and be economically viable					
	Alternative option/s	• Restrain investment in town centre enhancement • Red zoned land remains undeveloped or is used for another purpose These alternative solutions may make the town centre less attractive to visit, thereby discouraging users and negatively impacting on the centre's growth and economic viability					
Town Centres Growth & Revitalisation	Town Centre development (reviewed town centre Plans)	Manage impacts of growth Enhanced environment	$20.6m	2021-2032	✓	✓	✓
	Linkages  SDG 3, 8, 9, 11						
	Assumptions	• Town centres continue to have a role for local and District populations • Kaiapoi Town Centre will continue to grow and be economically viable • Rangiora will continue to grow and be the main service town for the District					
	Alternative option/s	• Restrain investment in town centre enhancement. This alternative solution may make the town centres less attractive to visit, thereby discouraging users and negatively impacting on the centres' growth and economic viability					
Town Centres Growth & Revitalisation	Future town centre strategies implementation	Future provision for managing ongoing growth and revitalising the town centres	$10m	2035	✓	✓	✓
	Linkages  SDG 3, 8, 9, 11						
	Assumptions	• Town centres continue to have a role for local and District populations • Kaiapoi and Rangiora town centres will continue to grow and be economically viable • Town centre infrastructure and amenities will need to be revitalised by 2035					
	Alternative option/s	• Restrain investment in town centre enhancement. This may make the town centres less attractive to visit, thereby discouraging users and negatively impacting on their growth and economic viability					


Future town centre strategies implementation
Development of town centres
Regeneration of red zone land
Additional parking in Rangiora
Kaiapoi town centre improvements

5 Appendices

5.1 Asset condition and performance

Asset Systems

The Council's asset management systems for recording and analysing Council assets are under development. Phase 1 has enabled the in-field recording of all maintenance costs against the assets that have been maintained by Councils in-house maintenance unit. Proper analysis of asset maintenance costs will be able to be carried out as data accumulates over time. Phase 2 will see maintenance schedules being operated through the system, which will provide further opportunities for reliable asset data capture.

Asset condition for the pipework assets has been determined based on detailed analysis of pipe burst data, coupled with a review of industry documentation on typical asset lives.

In 2020 work was completed by the Council's Network Planning Team to assess burst data collected on Council water mains to determine expected useful life by asset category. This useful life was then converted to a condition rating, based on criteria provided in the IPWEA International Infrastructure Management Manual (IIMM) to assign a condition score to all pipeline assets. The analysis has enabled a more informed remaining useful life, and proxy condition score, as it is now derived from actual pipe performance data across the District. To verify the assigned asset life and condition score, and to take into account any local variability from expected lives, some individual pipe condition assessments are done on specific samples of AC pipe.

With this recent analysis, confidence in the Council's water supply reticulation condition assessment data has been increased from a 'C' to a 'B', or 'reliable'. At this level data set accuracy is considered to be +/- 10%.

Confidence assessment of facility assets remains at a 'C' or 'uncertain'. At this level the data set accuracy is considered to be +/- 25%. The planned 2021 Facilities Asset Inventory Survey is expected to significantly improve the level of confidence in this data.

Capacity and performance of water supply schemes is monitored and managed through the use of hydraulic water models. These models are also used to establish what capital works may be needed to accommodate growth and meet levels of service, and are updated approximately quarterly. In updating the Activity Management Plans, water source, treatment, storage, headworks and reticulation requirements were also reviewed to determine any additional upgrades required to meet both existing level of service deficiencies and growth related demand. Recent implementation of an asset management information system (AMIS), will more easily enable additional performance monitoring of the network via pipe burst monitoring.

The sewerage pipe network is primarily assessed for condition via the 20 year cycle, rolling wastewater CCTV programme started in 2008. Assessment priority is based on criticality and operational issues, and is also integrated with the road reconstruction programme. The CCTV condition information is complemented with maintenance activity records from the field recording wastewater mains blockage and overflow records.

Confidence in the data for the pipe network is a grade 'B' or 'reliable'. At this level data set accuracy is considered to be +/- 10%.

Confidence in the data for facility assets has been assessed as a grade 'C' or 'uncertain' as a condition assessment of all assets at headworks has not yet been carried out. At this level the data set accuracy is considered to be +/- 25%. As with the water supply assets, the planned 2021 Facilities Asset Inventory Survey is expected to significantly improve level of confidence in this data.

The existing capacity and performance of the wastewater schemes throughout the District are monitored using hydraulic models constructed and maintained by the Council for each scheme. Where a scheme has been identified as performing below the required levels of service, either currently or with the inclusion of future growth, upgrades have been subsequently modelled and budgets to carry out the upgrades included in the Long Term Plan.

A significant wastewater upgrade is currently under construction in Rangiora and two others are planned in Rangiora and Kaiapoi within the next ten years. Further out in 2029/2031, an extension to the treatment pond in Woodend will provide additional capacity. Once completed, these works will enable levels of service to be met, particularly with respect to overflow frequency in wet weather events, and ensuring there is sufficient capacity for growth.

The Oxford treatment plant has limited capacity to deal with wet weather flows. An investigative programme is planned to determine if I&I can be cost-effectively reduced.

A programme of CCTV inspections for the stormwater network has been recently implemented. The early results from this programme will indicate whether the rate of CCTV inspection should be increased, and also start to fill in the information gaps about these assets. Confidence in the pipe network data has been assessed as a grade 'D' or 'very uncertain'. At this level data set accuracy is considered to be +/- 40%.

A condition assessment of all assets at headworks has not yet been carried out, so confidence in asset condition is low. Data confidence for facility assets has been assessed as a grade 'C' or 'uncertain'. At this level the data set accuracy is considered to be +/- 25%. It is proposed that these assets will be physically assessed for condition in the next three years, following a comprehensive asset inventory review at all of the facility sites. This is expected to significantly improve the level of confidence in this data.

The 2014 floods within the District highlighted a number of capacity problems with the stormwater systems. The subsequent programme of works to resolve the issues is under way with completion planned for 2028.

The programme now incorporates additional work identified from the 2017 wet winter, when areas different to those affected by the 2014 storm experienced heavy localised rainfall. Recent government 'shovel ready' funding has permitted the works planned for the Kaiapoi catchments to be brought forward, with expected completion of the works in 2023.

Design standards for stormwater works are based on preventing flooding above floor levels in a 50 year flood event and to prevent nuisance flooding in events up to a 1 in 5 year storm. Stormwater modelling incorporates 1 metre of sea level rise and a 16% increase in rainfall intensity from climate change. Where relevant, all new stormwater systems are sized to manage these increased flows and higher outlet levels.

Council has recently applied for consents to discharge stormwater from its urban networks, and the outcome is pending. Under these consents Council will be required to improve the quality of the water it discharges into streams and rivers and there will be challenges around the best way to comply with the conditions. Consent applications propose that by 2025 Council will have developed and costed a strategy for meeting water quality standards that will then be implemented in the 2025 to 2036/37 period. Provisional budgets to meet the expected consent conditions have been included in the relevant scheme AMP's.

Overall the roading asset is in good condition. The levels of service generally meet customer demand, where the major areas of user interest, quality of ride, and footpath condition, both exceed Council targets.

Bridges are one of the major risk areas in a network, due both to the high replacement cost, and a higher risk to life in event of failure. While the majority of the District's bridges are classed as being in average condition or better, the ability to keep up with repair work, identified through formal inspections, has declined due to reactive works taking priority. Extra funding has been sought to meet this demand and agreed to in principle.

Challenges include those where development of the District puts greater demand on roading infrastructure in general, but in particular where construction traffic requires extra intervention over and above day-to-day

maintenance. Funding levels will need to keep up with this growth to ensure the roading network continues to perform well. The increased traffic on the network also means a higher likelihood of crashes which is necessitating a step change in infrastructure standards on some key routes, such as West Rangiora.

The solid waste assets are revalued on a three yearly valuation cycle. No specific condition assessment of the original transfer station assets has been undertaken, but the condition of more recently installed individual components at these sites, and the individual components relating to closed landfills and cleanfill pits, have been estimated based on the component age in relation to the typical design life. Overall 88% of solid waste assets are in good condition as the major assets (transfer stations) have a remaining life of over 50%, with 12% (assets at closed landfills and cleanfills) being adequate or poor. Council proposes to undertake a full condition assessment and validation of all solid waste assets over the next three years.

The renewal cycle for solid waste facilities is currently based on asset age. Once the planned programme of asset capture has been completed a more sophisticated replacement schedule will be developed.

A full condition assessment and validation of all Green Space recreation assets was undertaken in 2013. The implementation of an asset validation programme utilising mobile tablet technology has allowed all assets, except for community facilities, to be reassessed every 18 to 24 months. Staff are currently undertaking a programme of asset capture for all community facilities and these will be included in the asset validation process in the future. The asset information currently available suggests that, on average, the condition of parks related assets is moderate to good.

A full revaluation of Green Space assets was undertaken in 2019 and is completed every three years to ensure that the information on replacement cost and useful lives remains relevant.

Renewal programmes are based on the condition and age of park assets and realistic replacement budgets are set to ensure the overall condition of these assets is maintained or improved over time.

The condition of community facilities is generally very good, due in part to the considerable investment the Council has made to improve these assets since the Canterbury Earthquakes. The Earthquake Strengthening Programme has brought almost all community buildings up to, and in many cases above, 67 percent of National Building Standards. A number of other building improvements have also been made in conjunction with this work.

The asset capture process is identifying some facilities that require work to remain compliant. This is generally in the facilities that did not require strengthening work following the Canterbury earthquakes.

Generally Green Space assets are performing well and meeting the identified levels of service, however, it is anticipated that the expected population growth throughout the District over the coming years will put pressure on existing community facilities and parks and reserves.

The Aquatic Facilities have been impacted by Covid-19 restrictions and user numbers have not yet recovered to pre-Covid-19 levels. A District Aquatics Strategy has recently been completed to provide direction for future provision, including the best utilisation of existing assets. It identified that while pool facilities are still in relatively good condition and some capacity remains, Council needs to start planning for the future upgrade and development of these and additional sites to ensure services offered continue to meet the needs of a growing community.

The renewal cycle for aquatic facilities is currently based on asset age. Once the programme of asset capture has been completed a more sophisticated replacement schedule will be developed.

An independent condition assessment was conducted in 2015 and since then most ‘Fair’ and ‘Poor’ elements have been remediated or replaced including elements or spaces such as roofs, sewer, driveways, kitchens, bathrooms, internal fit-out, linings, carpets and fences. All units have also been independently assessed for insulation and asbestos.

The sites and units are inspected at least twice a year. A formal condition assessment is planned for 2021/22 for some critical assets such as roofs. An energy audit is also planned in early 2021 for some representative units.

The table below compares the 2015 overall condition of the portfolio relative to an internal estimate in 2020.

Year	As New	Excellent	Good	Fair	Poor
2015	25%	16%	36%	16%	9%
2020	20%	20%	44%	8%	3%

From an asset performance perspective, all the units are weather-tight and capable of being kept relatively warm, dry and compliant. A 10 year programme of mid-life unit refurbishments has been budgeted for to address interior condition, functional obsolescence and unit configuration, with units being upgraded as they become vacant.

Rentals have been increased significantly but are still below market rates and meeting their performance criteria for affordability.

The new leased Farmers building of approximately 850 m^2 is in excellent condition, performing well and fit-for-purpose in terms of design and functionality and thermal performance. A recent energy audit showed it was relatively cost effective.

The Ashley building was built in the 1980's, repurposed as office space in 2008/10 and strengthened in 2016, with both floors partially refurbished and asbestos encapsulated. Overall, the building is in good condition but some aspects such lighting, heating, ventilation and the main stairwell need attention. A recent energy audit showed the building was 50% more expensive to operate per person per year. Works to address these elements are proposed in 2021/22.

The Rangiora Service Centre was built in the early 1980's, undergoing alterations in 2018/19 and a substantial refurbishment in 2020/21. The latest upgrade has significantly improved the functional performance of the building, increasing capacity and providing a better work environment. The refurbishment is anticipated to generate a significant operational cost saving through reduced energy consumption.

The austerity brought about by the Covid-19 economic environment saw the budget halved and a number of performance enhancements were not able to be delivered. This will also impact on the lifecycle of some elements via wear and tear, as well as functional obsolescence. In particular significant additional capacity was not delivered by the refurbishment as had been planned. In the interim additional space has been leased in Durham House and the Portacoms have been retained. These are in good condition but struggle to maintain appropriate environmental conditions and should only be viewed as a temporary solution to space shortages.

The four separate Rangiora administration buildings duplicate administrative functions and secondary facilities such as toilets and staff rooms. The economies of scale that could be achieved are not taken advantage of in relation to effective spatial and facilities management. The separate buildings also compromise, to some extent, the way the organisation operates, including the delivery of customer services. In the longer term an office extension is proposed in 2028/30 to cater for further growth and to centralise office functions. This project is closely aligned with the proposed extension of the Rangiora Library and potential upgrades to the public car park and landscaped areas associated with this site. Further consideration and design is under way with a master plan for the site currently being progressed.

The rebuild of the Ruataniwha-Kaiapoi Civic Centre after the Canterbury Earthquakes was completed in 2015. The Oxford Library rebuild was completed in 2017. Both of these buildings are in excellent condition, generally performing well and fit-for-purpose in terms of general design and functionality.

In the 1990's the Rangiora Library was mostly rebuilt, with the extension joining onto an existing building which is now used as an art gallery and meeting room. The exterior is generally in good condition and overall the interior is in good to fair condition. The heating and ventilation system that was previously performing poorly was replaced in 2020, however some other building elements are in only fair condition. Examples are the roof which leaks in heavy rains and the staff office/toilet areas which are well below standard.

The main performance issues with the building relate to capacity constraints but there are also some issues of functional obsolescence and spatial design. The 2017 Toilet Strategy categorised the public toilets within the Rangiora Library as 'high use' toilets, being very well used by members of the public either visiting the library or visiting the town centre, and recommended that provision be made for additional toilet cubicles when the building was redeveloped. There is also increased demand for the library service to provide support programmes for people with physical and cognitive challenges and this could increase as the population ages. There is little ability to adapt the cramped existing spaces to accommodate this.

The Rangiora Library extension has been deferred from 2023/24 to 2027/29 to run in tandem with a proposed redevelopment of the civic precinct site. This is subject to the master planning work for the site as a whole.

5.2 Identifying and managing risk by activity

A range of different types of risk assessments have been carried out for the District's water supply schemes. The operational risk assessment has previously generated a programme of work focussed primarily on improving security of supply and meeting the Drinking Water Standards. This work is now largely complete, with the final upgrade due for completion in 2021, subject to any further regulatory requirements from Taumata Arowai.

The vulnerability assessment and criticality assessments provide input data to the renewals programme. The effect of the vulnerability assessment, which only applies to underground pipes, is to accelerate the renewal of old brittle pipework, in areas of high risk of liquefaction and it is expected that all pipes at risk from earthquake in liquefiable ground will have been replaced by 2030.

The publication of the Havelock North Water Supply Inquiry Stage 2 report has prompted the inclusion of provisional budgets for installing UV treatment on all deep bore water supplies, where this is not already in place. Also included is provision for chlorination equipment for all supplies not currently chlorinated, to enable treatment of all supplies for bacteria and protozoa, and the provision for a residual disinfectant throughout all pipe networks.

This approach is precautionary as it is still uncertain what treatment future legislation and standards will require, and what the process may be to gain exemptions from some of these requirements. Updated standards and legislation are expected to be in place from 2021, so a greater degree of certainty is expected from this time.

Climate change poses some risks to Council's water supplies. This includes potential effects near the coast from sea level rise, and away from the coast from potential changes to groundwater recharge patterns arising from changing rainfall patterns. Environment Canterbury advises that the District's deep well water sources are less likely to be significantly impacted by climate change in the short to medium term, but this will continue to be monitored.

The risk of rising groundwater on the pipe networks in the eastern parts of the District will need to be understood and managed. Preliminary studies have been conducted to review the likely level of sea level rise near the coast, and further studies are planned to be undertaken within the first three years of the LTP to investigate the implications of this sea level rise on Council's assets.

A Water Safety Plan is required to be written by the water supplier for each supply as part of complying with the *Health (Drinking-water) Amendment Act*, and in the future under the *Water Services Act* (assuming the *Water Services Bill* is passed and enacted). Part of the process of preparing these plans is to undertake a risk assessment for all components of the supply, and where there are risks evaluated as unacceptable, to include improvement projects to address these risks. These identified improvement projects then feed through to the next Annual Plan or Long Term Plan process, where they cannot be delivered from pre-existing budgets. These documents therefore play an important role in informing both the AMPs, and the Council's corporate planning documents.

A range of different types of risk assessments has also been carried out for the District's wastewater reticulation schemes.

The Council's current level of service for the network is no overflows in a 2 year storm for existing areas developed before

the year 2000 and none in a 5 year storm for new development areas. Part of the central Rangiora upgrade project provides for additional capacity to achieve this level of service. Modelling and investigations are being undertaken for the Kaiapoi network to determine the upgrades required to achieve levels of service. An $18.2m ten year budget is included in the LTP for this upgrade, starting in 2024/31.

The Council's resource consent for effluent discharge from its ocean outfall will expire in 2039. This permits a maximum discharge of 57,000 m^3 per day. Analysis of the Ocean Outfall network completed in 2020 predicts there is sufficient capacity for the next 50 years without requiring significant upgrades. This Infrastructure Strategy assumes that when consent renewal is required it will be renewed without any substantial change to the current treatment and disposal approach. It is also assumed that the consent for the land-based discharge from the Oxford scheme will be renewed with similar conditions when it expires in 2031. The Fernside and Loburn Lea schemes will be connected to the EDSS before the end of 2021.

Climate change poses risks to Council wastewater schemes as it has the potential over the long term to increase pressure on flood protection infrastructure and stormwater systems, and damage coastal infrastructure. Drainage systems near the coast are likely to become problematic. This could lead to an increase in wastewater overflows from more severe wet weather events. Sea level rise, and associated potential groundwater rise, could also significantly increase infiltration into the reticulation network of coastal towns, lowering levels of service.

A range of different types of risk assessments have been carried out for the District's drainage schemes.

The operational risk assessment has previously generated a programme of work to address the flooding issues identified. Funding recently received from the Covid-19 Response and Recovery Fund means that the significant works required to alleviate the long term flooding issues on both sides of the Kaiapoi River have been brought forward and will be completed within the first two years of the 2021-2031 LTP. The Rangiora and Ohoka programme is planned for completion by 2028/29.

The majority of the other high risks identified relate to earthquake risk, for which further assessment remains to be carried out.

The vulnerability assessment and criticality assessments provide input data to the renewals programme. The effect of the vulnerability assessment, which only applies to underground pipes, is to accelerate the renewal of old brittle pipework, in areas of high risk of liquefaction.

The Disaster Resilience Assessment considers the risk to above ground assets from a broad range of potential natural disasters, and overlaps with the operational risk assessment in identifying earthquake risk issues at facility sites.

The risk of poor performance of the District's open drain network, arising from blockages, is managed via the Drainage Maintenance Contract. This includes both a regular programme of drain cleaning, and a prompt response to calls from landowners advising that drains on their land need cleaning.

Risk from new developments increasing runoff and adding to pollutant load, is managed through the requirement for developers to include stormwater attenuation and treatment facilities within development proposals, which meet the requirements of the Land and Water Regional Plan. Flood risk for new homes is dealt with by setting minimum floor levels based on 50 year flood levels.

There is some financial risk from the requirement to obtain urban stormwater discharge consents from the Regional Council. Consents have been applied for with the outcome pending. The application proposes that by 2025 Council will have costed and developed a strategy for meeting water quality standards. There is uncertainty about whether this timeframe will be accepted, and also regarding the most cost-effective way of meeting water quality standards.

Climate change mitigation is the most significant long term challenge for stormwater drainage. Research to date has indicated that while low-lying coastal areas will remain protected by the dune system, increasing ground water levels will become problematic, and various combinations of storm tide, fluvial events and a rising mean sea level will cause over-topping of stop banks and natural river banks. Further assessment work is needed, and consideration given to the types of solutions that may be practical. The issues need to start being discussed with stakeholders, most notably the Regional Council and

affected communities. Major decisions will need to be made and an adaptive strategy developed that is acceptable to both the affected communities and the wider District, within the 10 year period of the LTP.

The most significant potential risks to the roading network are likely to be as a result of a major natural disaster, such as an earthquake or major flooding event. Other risks include political, economic, management and environmental. By maintaining a resilient network, short-term adverse changes can be managed. Adding robust monitoring processes, and auditing these and their implementation regularly, helps to provide maximum information on the state of the network in real time, and the ability to respond appropriately, and in a timely manner.

Risk to the operation of the roading network is managed through the development and ongoing review of the roading risk register, as well as through emergency response planning, seismic screening of bridges, lifeline disaster resilience assessment, and detailed assessments of critical assets.

In general, the short term effect of emergency events on the road network can be mitigated by:

- Ensuring robust emergency management systems are in place
- Ensuring the network has alternative routes available wherever possible, particularly for arterial roads.

Council will continue to place emphasis on drainage maintenance and improvements to minimise impacts of major flooding events, while day to day management of bridge maintenance ensures flood events will cause no significant damage to infrastructure.

In the longer term, sea level rise resulting from climate change will affect all asset areas, not only Roading. Decisions will be need to be made at a political level, both local and national, about issues such as controlling development in coastal areas, potential relocation of affected residents, or aggressive water level rise containment. Sea level rise affects not only coastal surges, but also ground water levels, and capacity of culverts and bridges. The next three years will need to be spent investigating and carrying out analysis to allow best practice decision making and possible network management changes

The primary risks to the solid waste activity are changing acceptance criteria and decreasing commodity values in recyclables markets, loss of or inability to access disposal sites, inability to access collection areas, insufficient containers to transport waste, extended power outages, fire, spillage of hazardous waste, limitations on facilities to manage waste from severe events, and lack of land to expand waste handling and transfer sites. The local and on-site risks are being managed through operational planning and proposed capital works.

More stringent acceptance criteria and further drops in commodity values will result in more changes to kerbside collection services, increased costs to ensure compliance with acceptance standards, and higher processing costs, and may impact on the economic viability of providing commingled recycling kerbside collection services.

An inability to access Kate Valley landfill, for example, if the access road became impassable in the event of an earthquake or large snow event, would result in rubbish and recycling building up in the pit and insufficient empty containers in which to store these materials on-site.

Climate change will not directly impact solid waste assets. Rising groundwater levels could increase the generation and spread of leachate from the Kaiapoi closed landfill. This would have to be mitigated to reduce the impact on groundwater quality.

The Rangiora closed landfill is adjacent to the Ashley-Rakahuri River and has stop banks on two of its three boundaries. An increase in severity and occurrence of flood events due to climate change increases the risk of floods undermining or washing out the stop banks and landfill site. The Council will need to work with Environment Canterbury to ensure the stop banks are maintained and adequate for use in the future.

Sufficient capacity exists in the cleanfill sites for 15 to 20 years with normal use. In the event of an emergency, such as an earthquake, the sites could reach capacity sooner than estimated. The Council does not own any additional land that would be suitable for this purpose and will need to

develop an alternative strategy to deal with hard fill and clean fill. This could potentially include processing concrete for sale as hard fill to save air space.

The Council will continue to work with neighbouring Councils and organisations to develop a strategy to manage waste arising from severe events such as earthquakes and flooding.

The four most significant risks to asset performance in the Recreation, Green Space and Community Facilities portfolios are earthquakes, climate change, population growth and demographic changes. These are identified as follows:

- The functionality of community facilities is more likely to be impaired by another significant earthquake, although the earthquake strengthening programme has mitigated this to a certain degree. The extent of any damage will ultimately depend on the size and nature of the earthquake event.
- Climate change has the potential to affect both the flora and fauna within parks, natural areas and streetscapes. Increased costs could arise from implementing strategies to mitigate the effects of climate change, in particular drought and storm events. Climate change is most likely to impact on open space areas over summer periods when dry conditions will affect the quality of grass cover, and more irrigation is required to maintain it. Sea level rise will eventually impact on coastal reserve areas. Consideration is being given to the use of more drought tolerant tree and shrub species, and grass cultivars.
- Demand for open space and aquatic facilities has increased because of the significant growth in the District. In response to this Green Space has focused on maintaining asset performance to ensure levels of service and resident expectations continue to be met across the existing asset base. Within the next 30 years two additional community facilities and an aquatic facility will be required to cater for the expanding population in the eastern part of the District.
- Population forecasts indicate the number of people aged 65 and over living in the District will increase considerably over the next 30 years. Green Space and Aquatics are aware the needs and expectations of older people must be considered when designing and maintaining assets.

The design of the building structures have over time demonstrated high levels of resilience to earthquakes, high winds and heavy precipitation. Detailed Engineering Evaluations (DEE's) completed after the 2010/11 earthquakes indicate a relatively low level of risk, mainly because most of the Council's buildings are single story and timber framing is used as the primary structural element. Resilience is further enhanced through the application of new design standards when refurbishments occur. The renewal/ refurbishment programme also includes a focus on making the units more energy efficient, and removing health hazards such as asbestos.

5.3 Relevant legislation

Resource Management Act 1991 Reform

The Government is currently undertaking a reform of the *Resource Management Act 1991* (RMA) to cut complexity and costs and better protect the environment. It proposes to replace the RMA with three new Acts called the *Strategic Planning Act* (SPA), the *Natural and Built Environments Act* (NABEA) and the *Managed Retreat and Climate Change Adaptation Act.*

The *Strategic Planning Act* is intended to promote community wellbeing through the integration of environmental management and land use infrastructure and will set the policy direction for the *Natural and Built Environments Act.* The purpose of the NABEA is to enhance the quality of natural and built environments both now and into the future.

Both of these Acts are expected to be in place by the end of 2022, with the more complex SPA being completed after the NABEA, and could impact on the regulation and consenting for infrastructure.

Proposed Managed Retreat and Climate Change Adaption Act

This Act includes powers to change established land uses, and provide for compensation/funding mechanisms to address adaptation and reduction of risks from natural hazards.

Climate Change Response (Zero Carbon) Amendment Act 2019

This Act sets up an independent commission responsible for setting emissions budgets and developing emissions reduction plans. These are likely to have some relevance to local government.

The Waste Minimisation Act 2008

The *Waste Minimisation Act 2008* (the Act) requires councils to promote effective and efficient waste management and minimisation within their districts and to adopt, implement and fund Waste Management and Minimisation Plans (WMMP). The Act also gives powers to the Governor General to direct councils to alter provisions in their WMMPs, and to the Minister for the Environment to set performance standards for councils. The Act allocates a proportion of the Waste Disposal Levy collected at municipal landfills to councils and requires councils to only spend their share of the levy monies on *'matters to promote or achieve waste minimisation; and in accordance with their WMMPs'*. There are provisions in the Act for a Council's levy to be withheld in specific circumstances. Any of these provisions could impact on the solid waste activity and the services provided.

The Act is being reviewed in 2021 to update the legislation and to expand and increase the waste minimisation levy, and the reviewed legislation is expected to be gazetted in 2023.

Regulations can be made under the Act to prohibit the sale and manufacture of products that contain a specified material, for example, plastic. New Regulations were gazetted in order to reduce environmental harm from microbeads (2017) and from single-use plastic shopping bags (2018). In late 2020 consultation was undertaken on proposals to phase out hard to recycle plastics by 2025 and take action on another seven single-use plastic items. Once the draft regulations have been prepared there will be further consultation undertaken before the final regulations around these plastic packaging types and plastic items are gazetted.

The Government declared six priority products for regulated product stewardship under the Waste Minimisation Act, in late 2020. Once each regulated product stewardship scheme is co-designed and accredited, regulations will be prepared and consulted on. The regulations for each of the six priority products will be progressively gazetted during 2021 and 2022. All of these regulations will impact on the Solid Waste activity and the services provided.

In preparing their WMMP's councils must have regard to the New Zealand Waste Strategy (NZWS), or any government policy on waste management and minimisation that replaces the Strategy. The current NZWS has two goals: reducing the harmful effects of waste and improving the efficiency of resource use. The NZWS is being reviewed in 2021, and any changes, for example, the introduction of waste minimisation targets for specific materials, will require councils to give effect to those changes in their WMMPs at the next review deadline.

The *Climate Change Response Act 2002*, the *Climate Change (Waste) Regulations 2010* and Amendments to the *Climate Change (Unique Emissions Factors) Regulations* are implemented through the Emissions Trading Scheme. The purpose of the Emissions Trading Scheme is to reduce the amount of greenhouse gases emitted in New Zealand. As a shareholder in the Kate Valley Landfill, the Council participates in the scheme, reports on, and pays for landfill gas emissions. The Climate Change Commission will be undertaking consultation around the first package of advice to Government on the actions it must take to reach net-zero by 2050, and the outcomes of this may result in changes to the NZWS e.g. a target to reduce organic waste being sent to landfill, which could impact on Council services.

National Policy Statement for Urban Development

This NPS came into effect in August 2020 and provides direction to councils about when and how cities should plan for growth. It aims to remove unnecessary restrictions on development, to allow for growth 'up' and 'out' in locations that have good access to existing services and infrastructure.

Government Policy Statement on Land Transport

The Government Policy Statement (GPS) sets the framework for government transport directions. This policy is revised every three years and in recent years there has been a substantial shift towards reducing transport emissions and improving transport safety; with the Government signalling a desire to reduce both emissions and road fatalities to zero.

Te Mana o te Taiao, the Aotearoa NZ Biodiversity Strategy 2020

This strategy sets out a strategic framework for the protection, restoration and sustainable use of biodiversity, particularly indigenous biodiversity, in Aotearoa New Zealand, from 2020 to 2050. An implementation plan is to be developed in 2021 which will focus on establishing the systems and processes needed to support the effective delivery of the strategy. Partnership is identified as a core approach for delivering the strategy and so it is likely the Council will be involved in some way in the refresh of the Canterbury Biodiversity Strategy and implementing additional local biodiversity action.

NZ Biodiversity National Policy Statement (NPS)

In 2020 the Government released a draft National Policy Statement for Indigenous Biodiversity for consultation which sets out the objectives and policies to identify, protect, manage and restore indigenous biodiversity under the *Resource Management Act 1991*. This set out additional responsibilities for Council to identify and protect indigenous biodiversity on private and public land which could incur significant additional costs. The final NPS is expected to be released in April 2021. Ultimately, Council's response to biodiversity will not be able to be inconsistent with the NZ Biodiversity Strategy or the NPS.

Mahaanui Iwi Management Plan

The Mahaanui Iwi Management Plan includes a number of objectives and policies for the 3 Waters activities, summarised as:

- Wastewater (seeking improved effluent treatment and aspiring to avoid discharging into the ocean)
- Stormwater (improved treatment of discharges to improve water quality, and aspiring to avoid contaminated stormwater entering natural waterways)
- Water supplies (management of abstraction quantities reflecting a desire to reduce unnecessary urban water consumption).

These aspirations are required to be considered in various planning activities under the *Resource Management Act 1991*. As such they could impact on Council's costs and the nature of the 3 Water services delivered.

5.4 Community outcomes

Community Outcomes describe how Waimakariri District Council aims to achieve meeting the current and future needs of our communities with good quality local infrastructure, providing local public services and performance of regulatory functions.

Community outcomes set the direction for our Long Term Plan (LTP) and all activities included in the LTP that the Council undertakes contribute towards achieving these outcomes. The key groups of activities that contribute to each outcome are displayed.

The Local Government Act 2002 requires Council to promote the following four Wellbeings in the present and for the future. Each Community Outcome is associated with one or more Wellbeing.

Social Wellbeing

Economic Wellbeing

Cultural Wellbeing

Environmental Wellbeing

UN Sustainable Development Goals

There is a safe environment for all

- Harm to people from natural and man-made hazards is minimised
- Our District has the capacity and resilience to quickly recover from natural disasters and adapt to the effects of climate change
- Crime, injury and harm from road crashes, gambling, and alcohol abuse are minimised
- Climate change challenges are addressed in an appropriate, timely, cost-effective and equitable manner
- Our District is well served by emergency services and volunteers are encouraged.

UN SDG 3, 13.

Transport is accessible, convenient, reliable and sustainable

- The standard of our District's transportation system is keeping pace with increasing traffic numbers
- Communities in our District are well linked with each other and Christchurch is readily accessible by a range of transport modes
- Public transport serves our District effectively
- Opportunities to increase the occupancy of commuter vehicles is actively encouraged.

UN SDG 9, 11, 12

Indigenous flora and fauna, and their habitats, especially Significant Natural Areas are protected and enhanced

- Conservation, restoration and development of significant areas of indigenous vegetation and/or habitats is actively promoted.

UN SDG 15

There is a strong sense of community within our District

- There are wide-ranging opportunities for people of different ages, abilities and cultures to participate in community life, and recreational and cultural activities.

UN SDG 3, 16

Core utility services are sustainable, resilient, affordable; and provided in a timely manner

- Harm to the environment from sewage and stormwater discharges is minimised
- Council sewerage and water supply schemes, and drainage and waste collection services are provided to a high standard
- Waste recycling and re-use of solid waste is encouraged and residues are managed so that they minimise harm to the environment
- Renewable energy technologies and their efficient use is encouraged
- High-speed telecommunications services are readily available across the District
- Climate change considerations are incorporated into all infrastructure decision-making processes
- Good procurement practice and effective long-term planning ensures services are sustainable, affordable and value for money for the community
- Infrastructure services are managed in a way that reduces emissions over time.

UN SDG 6, 7, 9, 11, 12, 13, 15

The community's cultures, arts and heritage are conserved, developed and celebrated

- Mana whenua are acknowledged and respected
- All cultures are acknowledged, respected and welcomed in the District
- Heritage buildings and sites are protected and the cultural heritage links with our past are preserved
- There are wide-ranging opportunities to participate in arts and cultural activities
- Public places and spaces provide opportunities for cultural expression and integrated arts.

UN SDG 3, 11, 16

Businesses in the District are diverse, adaptable and growing

- There are growing numbers of businesses and employment opportunities in our District
- There are sufficient and appropriate places where businesses are able to set up in our District.

UN SDG 8

Effect is given to the principles of the Treaty of Waitangi

- The Council in partnership with Te Ngāi Tūāhuriri Rūnanga, continue to build our relationship through mutual understanding and shared responsibilities
- Maori cultural identity, values and aspirations are reflected in built and natural environments.

UN SDG 10, 11, 16

There is a healthy and sustainable environment for all

- Harm to the environment from the impacts of land use, use of water resources and air emissions is minimised
- Cultural values relating to water are acknowledged and respected
- The demand for water is kept to a sustainable level
- Harm to the environment from the spread of contaminants into ground water and surface water is minimised
- The impacts from land use activities are usually only short term and/or seasonal
- Soils are protected from erosion and unsustainable land use practices
- Low carbon, climate-resilient development in the district is promoted to be compatible with a 1.5 ° Celsius national and global carbon budget
- People are actively encouraged to participate in improving the health and sustainability of our environment
- People are connected to the natural world within the built environment.

UN SDG 3, 6, 11, 12, 13, 15

People have wide ranging opportunities for learning and being informed

- Our educational facilities, libraries and cultural centres are well resourced and have the capacity to manage and respond to changing demographics
- Our people are easily able to get the information they need.

UN SDG 3, 4

The distinctive character of our takiwā - towns, villages and rural areas is maintained, developed and celebrated

- The centres of our towns are safe, convenient and attractive places to visit and do business
- Our rural areas retain their amenity and character
- Public spaces reflect the distinct narratives, character and cultural identity of our takiwā.

UN SDG 11

Public spaces and facilities are plentiful, accessible and high quality, and reflect cultural identity

- People enjoy clean water at our beaches, rivers and lakes
- There is a wide variety of public places and spaces to meet people's needs
- There are wide-ranging opportunities for people to enjoy the outdoors
- The accessibility of community and recreation facilities meets the changing needs of our community
- Public spaces express the unique visual identity of our District.

UN SDG 3, 11

People's needs for mental and physical health and social services are met

- Our people are supported by a wide range of health services that are available and accessible in our District
- Participation in community-based support and services is acknowledged and encouraged
- Housing is available to match the changing needs and aspirations of our community
- There are wide ranging opportunities to support people's physical health, social and cultural wellbeing.

UN SDG 3, 16

There are wide ranging opportunities for people to contribute to the decision making that affects our District

- The Council makes information about its plans and activities readily available
- The Council takes account of the views across the community including mana whenua
- The Council makes known its views on significant proposals by others affecting the District's wellbeing
- Opportunities for collaboration and partnerships are actively pursued.

UN SDG 16

SUSTAINABLE DEVELOPMENT GOALS

The UN Sustainable Development Goals are the blueprint to achieve a better and more sustainable future for all by 2030. They address the global challenges including those related to poverty, inequality, climate change, environmental degradation, peace and justice. The community outcomes broadly align with these goals.

Learn more about each UN goal at:
un.org/sustainabledevelopment/sustainable-development-goals/

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