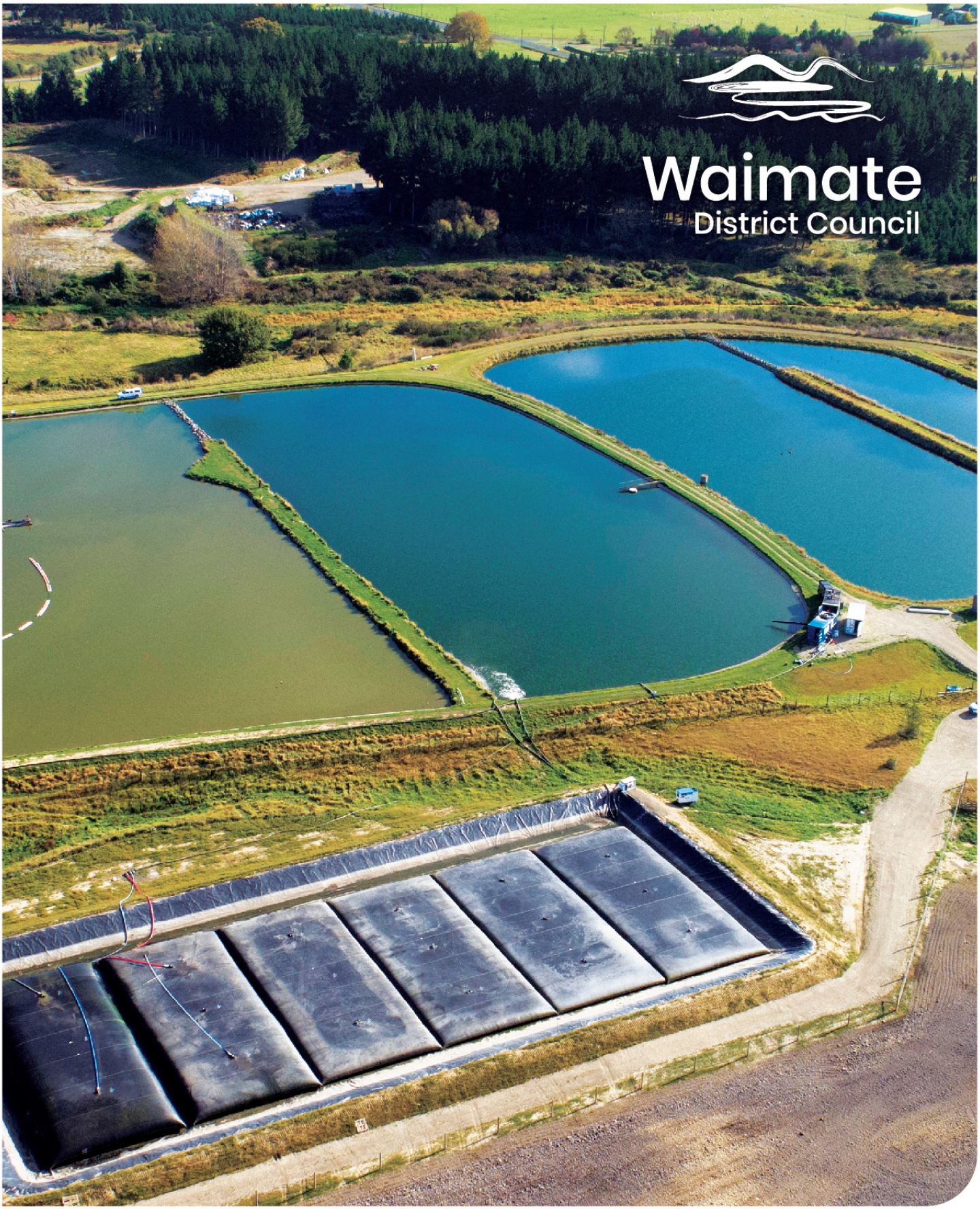

27 August 2021

30 Year Infrastructure Strategy 2021 – 2051

Quality Record Sheet

Waimate District Council
30 Year Infrastructure Strategy
2021 - 2051

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1.0 EXECUTIVE SUMMARY

Waimate District Council's Infrastructure Strategy forms part of the framework of strategy and planning documents that are used to guide Council's sustainable management of assets, while also allowing Council to achieve identified infrastructure objectives over the next 30 years. This is the third infrastructure strategy produced as a requirement of amendments to the Local Government Act 2002 in 2014. It provides discussion into the range of scenario and responses Council could make in providing services to the community in a sustainable way.

The Infrastructure Strategy has direct linkage to Council's Roading, Water, Sewerage and Stormwater Asset Management Plans, and is used to inform the 2021-2031 Long Term Plan.

The Infrastructure Strategy covers the Council's core infrastructure activities of Roading and Footpaths, Water Supply, Sewerage and Stormwater. The core infrastructure is the most critical area of investment for the Council with infrastructure delivering essential services to residents and visitors.

Purpose: The purpose of the Infrastructure Strategy is to:
Provide residents of the Waimate District with a clear view of the state of Council's core infrastructure, and priorities for investment over the next 30 years.
Provide robustness around long term budgets for the Core Infrastructure Assets activities
Discuss significant issues for the Core Infrastructure Assets across a 30-year time frame, and provide a strategic direction that reflects the current legislative environment and the Councils priorities across the district

Core Infrastructure Assets: A summary of the Council's Core Infrastructure Assets that are considered in this Infrastructure Strategy are presented below:

Asset	Description	Optimised Replacement Values (2020 $M) Value	% of Total
Roads and footpaths	Roads (arterial, collectors, local; curbs and gutters), bridges, footpaths	496	88%
Water Supply	Water extraction, treatment and distribution	40	7%
Sewerage	Sewerage collection, treatment and discharge	25	4%
Stormwater	Stormwater collection and discharge	6	1%
TOTAL		$ 567M	

Council's Priorities: At a high level, Council's priorities in respect to the Water, Sewerage, Stormwater and Roading and Footpaths are

Maintain the District's roads to a safe standard and fit-for-purpose for the long term
using efficient and effective asset management practices to maximise roads and footpaths asset life to provide a resilient network.
Demonstrate to customers that Council is managing the assets responsibly.
Ensure that the level of service required by customers is provided at the lowest long-term cost to the community.

Customers will be regularly consulted over the price/quality trade-offs resulting from alternative levels of service
Provide a continuous supply of potable water to meet agreed demands.
Maintain sewage disposal and treatment facilities to protect public health through ensuring good sanitary standards and freshwater management.
Manage the impacts of land use change and growth.

There are several **key decisions** ahead for Council and the community.

Roading and Footpaths

Continually consider increased investment in Roading and Footpaths to provide a satisfactory level of service and provide for the effects of heavier vehicles. Historic Land use change continues to result in greater truck numbers associated with dairying and fodder crops, as opposed to dry stock farming. Trucks on the network are larger (including 50MAX and HPMV), as are agricultural vehicles. Historically the level of investment required to keep roads to a 'fit for purpose' level in Waimate District has been among the lowest in the country. However, with land use change the demands on components of the network increase so does the amount of work to keep them to the required standard. A comprehensive planning and maintenance approach to ensure the delivery of this level of service will require more investment. Given the large proportion of pavements that were constructed in the same periods Council is aware of the potential 'bow-wave' of rehabilitation and resealing works. While there is an acknowledgement of this, small increases in funding are proposed initially as monitoring and modelling is undertaken to gain a more robust understanding of this issue, and where this investment should occur.

Council also needs to consider if the current Aoraki (South-Mid Canterbury) Roading Collaboration Group arrangements are delivering the outcomes sought by Waimate customers. Since 2014, a strong collaboration has developed across Waimate, Mackenzie, Timaru and Ashburton District Councils. The development of a common maintenance contract document meant that the Councils had to work together and resolve differences. This has formed an excellent platform for combined work, as well as procuring physical works and professional services.

Water Supplies

The renewal programme is considerable and will extend well out into the future. Council will need to continue its commitment to this in order to maintain satisfactory levels of service and to provide increased levels of service required for compliance with the Drinking Water Standards for New Zealand, improved regulation and associated compliance monitoring.

Sewerage

The renewal programme is considerable and will extend well out into the future. Council will need to continue its commitment to this in order to maintain satisfactory levels of service, and compliance with both current and future consents.

Stormwater

The forward works programme is adequate. If a greater level of service is desired then higher levels of investment will be required. Short term investment is currently targeting known locations where agreed levels of service cannot be achieved. There is ongoing work required to identify, protect and improve overland flow paths through both the stormwater activity and the District Plan review.

Council's Response

Aging assets, addressing changing (heavy) transport demands, improving road safety and improving water supplies are all challenges for Waimate District Council. Over the next ten years investments to improve levels of service will be the priority, and renewal programmes will ramp up for water services and pavement rehabilitation works. Some shorter-term investment is also required to meet additional demand associated with growth.

Council will continue to engage with government around the water reform programme.

Roading investment levels are reviewed every three years in line with the government priorities for financial assistance.

Strategic Direction

Councils' strategic direction to ensure that its decisions address both the priorities and long and short-term issues are documented in Section 7 of this 30-year infrastructure strategy. Analysis of available options for the key issues has resulted in the following strategies:

Water Supply:

- The application of a prioritised approach to the replacement of aged water mains to ensure impacts on customer level of service is limited. Priority is given to those assets displaying poor condition, high failure rates, high criticality and that have potential to affect a high number of consumers. Comprehensive asset management planning is required to maintain a satisfactory level of service.
- Council will continue its programme of water scheme treatment plant upgrades in order to achieve compliance with the current Drinking Water Standards for New Zealand. Where the proposed water reform programme indicates that legislative change is likely and alternative compliance pathways become available, Council will review the programmed upgrades to ensure that cost-effective compliance is achieved. For example, completion of enabling works early, followed later by alternative compliance methodology. Council remains committed to achieving compliance concurrently with the Three Waters Reform process.
- Progressively renew and upgrade our rural townships to address leakage and access to water services for growth.

Sewerage:

- The application of a prioritised approach to the replacement of aged and poor condition sewer mains to ensure impacts on customer level of service is limited. Priority is given to those assets displaying poor condition, high failure rates, high criticality and that have potential to affect a high number of consumers. Comprehensive asset management planning is required to maintain a satisfactory level of service.
- A combined approach to replacing aged and poor condition pipes alongside a detailed inflow investigation to provide capacity and resilience in the waste water network.

Stormwater:

- Implementation of the Stormwater Management Plan once the global consent is issued. The global consent application is currently being processed by Environment Canterbury Regional Council with affected parties currently being consulted. Some risks exist if approvals are not provided, or National Policy is amended during the process.

3 Water Reforms:

- Towards the end of 2021 Council will need to establish its strategic direction (opt-in or opt-out). Until further information is available this is difficult to determine.

Roading:

- Increased traffic numbers and size require a programme of increased resurfacing, pavement rehabilitation, unsealed road metalling and drainage renewals.
- Failures due to poor ground conditions and drainage require a programme of increased resurfacing, pavement rehabilitation, unsealed road re-metaling and associated drainage renewals. Future increased investment needs to be underpinned by additional data collection.
- Unsuitable bridges to be addressed using the ONRC hierarchy and addressing key routes for both freight connections and network resilience. Priority determined using a replacement / upgrade strategy.
- Road Safety is a critical outcome and applying the ONRC a Low-Cost-Low Risk Minor Safety Improvements programme is developed. This covers the higher priority road, walking and cycling safety aspects.

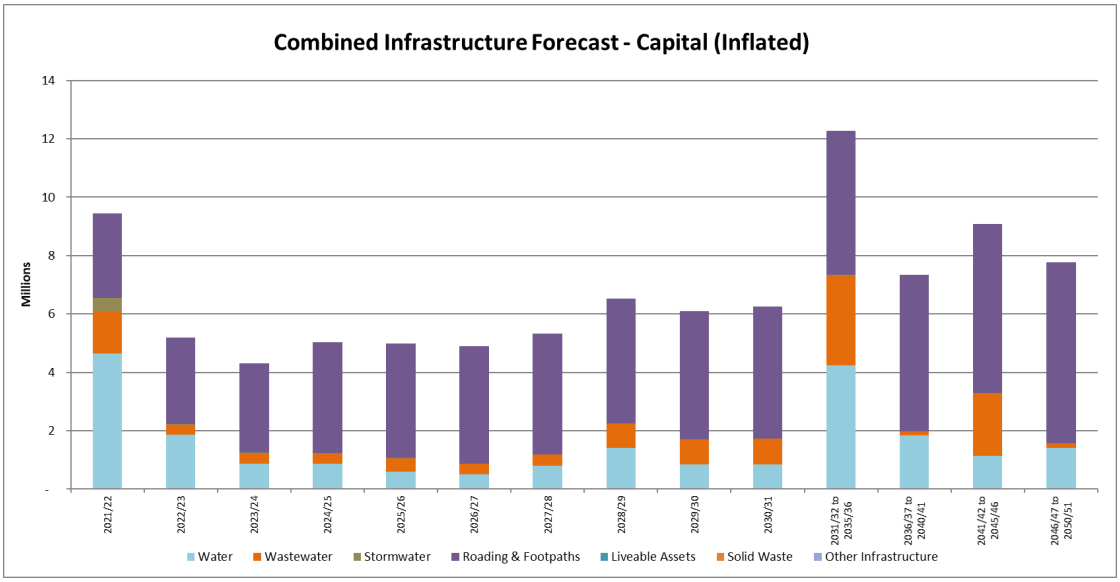
The following chart illustrates the key issues and responses.

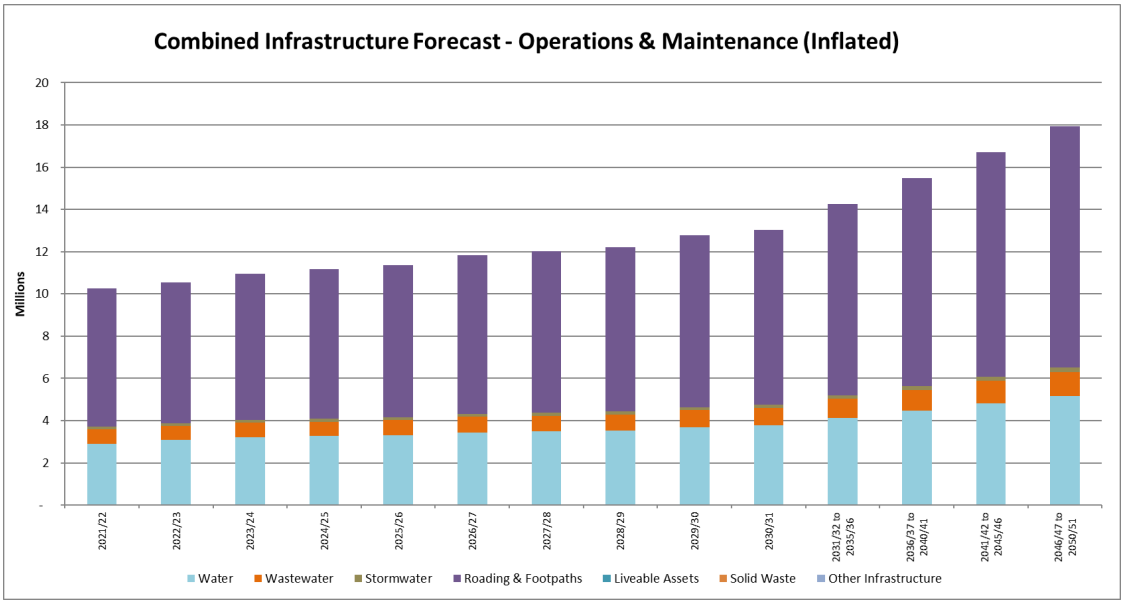
	Years 1-3	Years 4-10	Years 11-20	Years 21-30
Roading and Footpaths	Improved drainage Flood resilience Infrastructure safety improvements and speed management Reseals Some Pavement Rehabilitation	Road strengthening to respond to drainage/pavement condition Reseals More Pavement Rehabilitation (1.3km / year) Safety improvements	Reseals Pavement Rehabilitation	Reseals Pavement Rehabilitation
Water Supplies	Treatment upgrades Pipe renewals Govt. water reform Provision of growth infrastructure	Pipe renewals Provision of growth infrastructure	Pipe renewals	Pipe renewals
Sewerage	Investigate inflow Pipe renewals Govt. water reform Provision of growth infrastructure	Reduce inflow Pipe renewals Provision of growth infrastructure	Pipe renewals	Pipe renewals

	Years 1-3	Years 4-10	Years 11-20	Years 21-30
Stormwater	Urban improvements Global consent Identification, protection and improvement of overland flow paths Govt. water reform	Urban improvements		

Much of the Roading and Footpaths network is located on difficult soils which are poorly drained. The network is impacted by storm-related flooding, that is predicted to gradually increase as a result of climate change. This has the potential to affect the fit for purpose performance of the network - resulting in pavement defects where drainage and ground conditions are poor - and a backlog of maintenance and renewals work. New designs and renewals take the effects of climate change in to consideration.

Road safety initiatives contribute to the national 'Road to Zero' road safety strategy. Critical and urgent changes are required at a local, regional and national scale as part of the strategy.





Waimate District Council continues to face the challenge of aging pipe assets that are both due, or are overdue, for replacement and a roading network that is under pressure. This infrastructure is vital to the economy of the district and beyond, along with the wellbeing of the community.

The combined forecast for operations and maintenance as well as capital identified is considerable. Core infrastructure costs exceeding $20 million per year (Year 1, capex and opex) is a challenge for a small community and smart planning is vital.

On the infrastructure side, a focus on criticality and prioritisation is key to investing where it will provide the greatest benefit. This will need to be communicated well as with a prioritised approach there could be differing views on what should be done and what should be delayed. Council are currently considering additional analysis of the reticulated networks through fault records which will also assist with prioritisation. Balancing age, criticality, risk appetite and overall performance with affordability is also a challenge over the 30-year timeframe.

Alongside this infrastructure strategy, the financial strategy outlines the options for funding these infrastructural challenges. Council is focussed on continuing to support the district and its residents, and this means providing a fair balance of revenue methods, and providing fit for purpose services.

2.0 INTRODUCTION

This is Waimate District Council's third Infrastructure Strategy. It has been prepared from Council's 2021 suite of Activity Management Plans and the Long Term Plan of which it forms part.

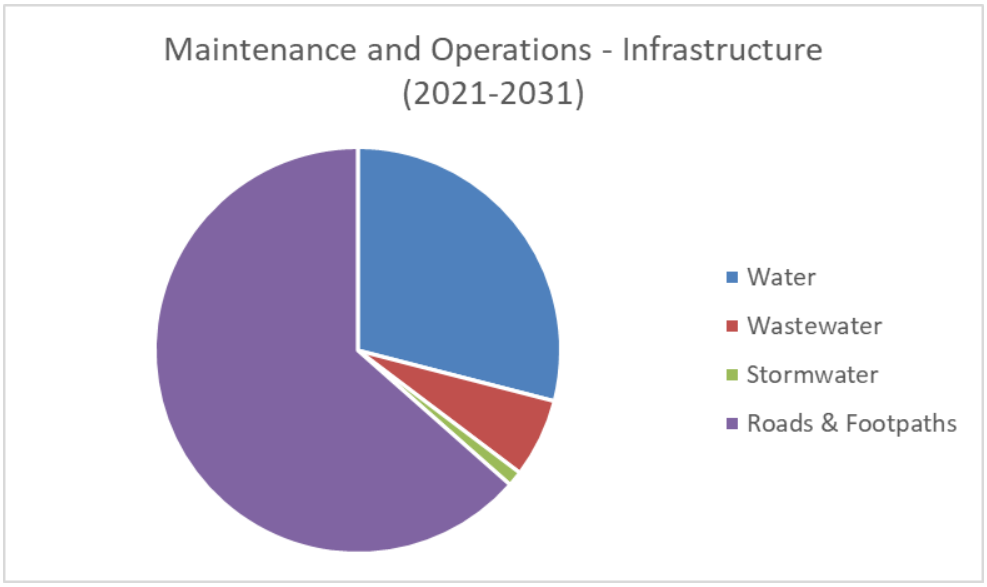
This Infrastructure Strategy should be read in-conjunction with other relevant Council documents that include the LTP, Financial Strategy and the current AMPs.

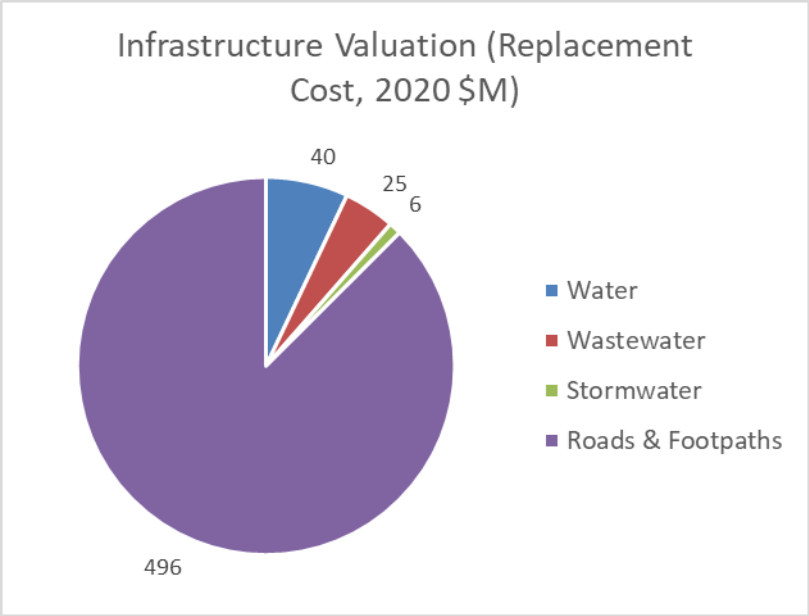
The issues discussed reflect the current legislative environment and the communities' priorities across the district.

The financial forecasts are estimates and the reliability of the forecasts decreases beyond ten years and towards the thirty-year planning horizon.

This Infrastructure Strategy covers the Waimate District Council's core infrastructure (Roads and Footpaths, Water, Sewerage and Stormwater). The core infrastructure is the most critical area of investment for the Council, representing around half of the annual expenditure and close to 90% of all the value of all Council's assets.

Figure 2.1: Infrastructure Annual Expenditure and Asset Valuation (Replacement Cost)





2.1 Strategy Layout

The Strategy document sections and corresponding LGA Act sections are tabled below:

Table 2.1: Strategy Layout

Strategy Section		LGA 2002 (Section 101B)
1	Executive Summary	
2	Identifies the purpose of the Infrastructure Strategy and the core infrastructure included in this strategy	2(a) and 6
3	Describe the district/city and illustrate the linkage between strategic documents	2(a)
4	Describe the core infrastructure, its condition and performance while recording the significant assumptions, risks and mitigation	2, 3(e), 4 (c) & (d)
5	Discuss the emerging issues that will impact on the core infrastructure assets	3 (b) to 3(e)
6	Discuss Council's response to the emerging issues and the significant decisions to be made during the term of this strategy	2(b), 4(b)
7	Identifies the response options for the significant issues and documents the benefits, cost, when and funding source	2(b); 3(a) to (e) & 4(a) to (c)
8	Identifies the costs associated with the actions proposed	4(a)

2.2 Purpose

2.2.1 Purpose of Infrastructure Strategy

The purpose of the Infrastructure Strategy is to:

- Provide residents of the Waimate District with a clear view of the state of Council's core infrastructure, priorities for investment over the next 30 years
- Provide robustness around long term budgets for the core Infrastructure Assets.
- Discuss significant issues for the Core Infrastructure Assets across a 30 year time frame, and provide a strategic direction that reflects the current legislative environment and the communities' priorities across the district.

Section 101B – Infrastructure Strategy states:

(1) A local authority must, as part of its long-term plan, prepare and adopt an infrastructure strategy for a period of at least 30 consecutive financial years.

The stated purpose of the Infrastructure Strategy is to;

a) Identify significant infrastructure issues for the local authority over the period covered by the strategy; and
b) Identify the principal options for managing those issues and the implications of those options.

Section (6) defines infrastructure assets as including:

a) existing or proposed assets to be used to provide services by or on behalf of the local authority in relation to the following groups of activities:
    i. water supply:
    ii. sewerage and the treatment and disposal of sewage:
    iii. stormwater drainage:
    iv. flood protection and control works:
    v. the provision of roads and footpaths; and
b) any other assets that the local authority, in its discretion, wishes to include in the strategy.

2.2.2 Infrastructure Drivers

Changing land Use

Expansion of reliable irrigation has underpinned historic changes to land use within the district. This is mainly in dairy, dairy support and high value crops. This in turn has and will continue to support local service industries and value added manufacturing. The expansion of reliable irrigation has and is expected to result in a stable but small population increase and ongoing demand of the Council's supporting infrastructure (Roading, Water, Sewerage and Stormwater).

As the demands on the networks increase and the remaining land-use changes occur, it is clear that levels of service will be challenged. It is timely to acquire knowledge and invest to protect the existing asset and ensure that levels of service remain satisfactory.

The report 'Economic Impact of Freshwater Management Policies on the Waimate District' April 2021 (Rationale, Benje Patterson) notes small but important potential changes in land use and farming practices as a result of national freshwater management changes and requirements. These changes may also have a small on-going detrimental effect on district employment. Council will work closely with various stake holders to quantify these effects over the coming years.

Population Growth

Introduction

Population growth (or decline), age structure and distribution (spread), and the number and type of households and families in our district affects:

- Demand for local services
- The willingness and ability of ratepayers to pay for them
- Representation and participation in local democracy
- Interactions between human activity and the environment.

It is therefore an essential for asset management planning that sound information is used regarding population, demographic and geographic change.

In the past Waimate District Council have used the growth projections prepared by Stats NZ. The Council is now looking for a more in-depth understanding of what their district might look like over the next 30 years. This, coupled with the delayed release of the Stats NZ projections following the 2018 Census, has led the Council to commission these growth projections from an external specialist. The 'Waimate District Council Growth Projections, August 2020' reporting prepared by Rationale enables the organisation to understand the future growth in their district and provide a single source of the truth for the Council.

This is discussed in section 5.1 along with other challenges.

2.2.3 Infrastructure Capacity

Capacity assessments by the Council in relation to the land use and population growth drivers indicate that:

- Hydraulic rearrangement and pressure management for the urban water supply both assists in extending the useful life of the network assets, and will provide additional capacity to cater for growth.
- National freshwater reforms may cause future land use change that results in different farming practices, water use requirements and transport network use.
- The urban sewerage network and treatment plant have adequate capacity to cater for the increased population (additional 2,900 persons available) provided stormwater inflow and groundwater infiltration can be reduced.

2.3 Waimate District Core Infrastructure Assets

The core Waimate District Infrastructure Assets are tabled with 2020 replacement values below:

Table 2.2: Waimate District Infrastructure Assets

Asset	Description	Replacement Value (2020 $M)	% of total
Water	Water extraction, treatment and distribution	40	7%
Sewerage	Sewage collection, treatment and discharge	25	4%
Stormwater	Stormwater collection and discharge	6	1%
Roads and footpaths	Roads (arterial, collectors, local; curbs and gutters), bridges, footpaths	496	88%
TOTAL		**$ 567M**	

There are some very minor infrastructure assets associated with flood protection and control works including the Elephant Hill drainage channel. Council considers that there will be no increased demand for this service over the next thirty years.

2.3.1 Infrastructure Performance

General comments on the condition and performance of the district's infrastructure in terms of the services required at a network level is presented in Table 2 3.

Table 2.3: Core Infrastructure Condition and Performance

Asset	Condition	Performance
Roads and Footpaths	Condition records and current assessments are thorough, being detailed and collected over many years. Improvements are planned to collect more complete age and remaining life data for all assets. The network is generally sound, but is beginning to show signs of deterioration as demands increase.	Increasing traffic volumes and heavy vehicle axle weights are expected to increasingly impact on the district's core road network, particularly where ground conditions are weak and drainage is poor.

Asset	Condition	Performance
Water	Council considers that the majority of the network (source, treatment and distribution) is in good condition but there are portions of the reticulation that are coming to their end the useful life.	Council considers that the networks operates effectively and efficiently. Some performance issues are noted due to undersized pipework which cannot meet fire flow requirements.
Sewerage	There are areas of the network (collection, treatment and disposal) that are showing signs that they are coming to their end of useful life. This is particularly evident with original pipework in Waimate town where there is inflow occurring.	Council considers that the majority of the network operates effectively and efficiently but there are sections of the network that have a lower level of performance during heavy rain or unusually high groundwater conditions.
Stormwater	The network is relatively new (with extensive useful lives) and in good condition.	There is only limited stormwater piping, there is some surface flooding of streets in parts of Waimate town which are being progressively addressed. Some

2.2.4 Risks to Core Infrastructure Asset Performance

Roads and Footpaths:

The assets are well understood and there is now better information on bridge structures. Risks have been considered at a South Canterbury level with neighbouring authorities to understand wider network resilience.

Work is underway to collect further detailed information on the ground conditions across the network and develop work programmes which manage the impact of weak ground and poor drainage on pavements.

Water, Sewerage and Stormwater:

The main risks that would affect the performance of the Infrastructure Assets have been identified using a Risk Summary Table initially developed in 2011. This indicates that there are a small number of high or significant risks, but these have appropriate mitigation. Critical reticulation assets were identified in 2017 to ensure they are prioritised appropriately.

Council is involved with the Government on the NZ water reform initiatives that are in progress in 2021 onwards. Final decisions regarding NZ water reform have yet to be made at the time of this Infrastructure Strategy. Council will continue to engage with the Government with regards to water reform proposals.

2.3.2 Other Activities

Council undertakes other activities beyond the core infrastructure described in this Infrastructure Strategy

In time the Parks and Recreation assets and Community Buildings may be added to the above list of core infrastructure as Council's plans for those activities matures.

2.3.3 Infrastructure Achievements

Over the last three/six years we have:

- maintained, replaced, constructed our infrastructure
- identified and investigated issues,
- undertaken strategic actions – including the adoption of Waimate District Council's Consolidated Bylaw (2018) and the Council's Procurement Strategy (2019)

The following details improvements achieved over the last number of years with our core infrastructure:

2.3.4 Water

Council has completed water treatment plant upgrades within the urban area and has partially completed upgrades of Cannington-Motukaika and Waihaorunga Rural Water Supplies.. Pipe renewals, particularly in the Waimate Urban scheme, are ongoing. The data capture and condition assessment programme is ongoing.

2.3.5 Sewerage

Pipe and manhole renewals, particularly in the Waimate Urban scheme, are ongoing. The data capture and condition assessment programme is ongoing.

2.3.6 Stormwater

Pipe and manhole renewals are ongoing. The data capture and condition assessment programme is ongoing.

2.3.7 Roads & Footpaths

Waimate District Council's service delivery as part of the Aoraki (South-Mid Canterbury) Roading Collaboration has ensured cost-effective service delivery in-line with industry best practice.

A Bridge Replacement and Upgrade Strategy has been developed.

Council has assessed condition of all culverts on the roading network, verifying RAMM data and estimating construction dates and condition of culvert itself. This information is being used to form a replacement programme.

Council has continued to manage a modest and affordable programme of "Low Cost-Low Risk" Minor Safety Improvements as part of Capital Programmes, which include targeted seal widening, geometric improvements, enhanced delineation on horizontal curves and footpath extensions.

3.0 WAIMATE DISTRICT

3.1 District Overview

Situated around 180 kilometres south of Christchurch, Waimate District is in the central South Island. The district is bounded by the Pacific Ocean in the east, west of the shores of Lake Benmore and the Pareora and Waitaki Rivers at the north and south respectively. The district covers around 3,582 square kilometres and has a population of approximately 7,800 persons.

The district is characterised by a variety of farming and forestry activities. Crop and livestock farming are the main activities on the fertile plains and easy hills with more extensive grazing on less fertile or steeper country. Dairying has expanded significantly with dairying now occupying the majority of the areas served by irrigation schemes.

Waimate town is the largest population centre, with the balance located in smaller communities and the rural area. Waimate town is the only community served with comprehensive water and sewerage schemes.

A summary of the Infrastructure Assets owned and operated by Council within the Water, Sewerage, Stormwater and Roads and Footpaths activities is provided below:

Roads and Footpaths: The Council operates and maintains 646 kilometres of sealed roads, 693 kilometres of unsealed roads, 48.5 kilometres of kerb and channel, 62.7 kilometres of footpaths, just under 3,500 culverts, and 182 bridges (plus an additional 85 concrete fords).

The total replacement cost of our Roads and Footpaths assets (as at June 2020) is $496 million.

Water: Council operates and manages one on-demand water scheme (Waimate) and six rural water supplies. Water is obtained from a range of surface and groundwater sources through the means of river intakes, infiltration galleries and bores. Water treatment plants, storage reservoirs, tanks and pump stations are operated to distribute the water to approximately 6,000 consumers via 914 km of pipe. The Cattle Creek (essentially a very small and private scheme) and Hakataramea water supply (managed and operated by an incorporated society)are not considered in this Infrastructure Strategy.

The combination of assets was valued in 2020 at $40M (Replacement cost)

Sewerage: Only Waimate town is served by a community sewerage scheme with a total of 1,730 connections. Sewage is collected through 67 km of gravity pipe and rising mains, including two pump stations, and conveyed to a Waste Water Treatment Plant (WWTP) and disposal system. Treated effluent is discharged on to land.

The scheme was valued in 2020 at $25M (Replacement cost)

Stormwater: In the Waimate District, there is presently only one significant piped stormwater system, serving Waimate town. There is 13.5 km of stormwater pipes, open drains and a number of sumps and soakholes. Stormwater is conveyed to disposal points (natural waterways, soakpits and streams).

The limited nature of the system is reflected in the 2020 value of $6M (Replacement cost)

3.2 Strategic Context

The Strategy aims to give effect to Council's strategic direction as set out in the Community Outcomes. Linkages to each activity are shown below.

Table 3.1: Community Outcome Linkages to Activity

Community Outcomes		Transportation	Water, Sewerage and Stormwater
Thriving Community	A district that provides infrastructure for economic activity A District that encourages development A District that actively promote itself and its businesses	Efficient and safe roading networks are part of the essential infrastructure for economic growth and development	Fault response Timely provision of utility services essential to supporting growth
Safe and Healthy People	A place where people are safe in their homes, work and public spaces Our services, infrastructure and environment enhance quality of life	Safe and well maintained roads, footpaths and road verges promote safety of all road users, including pedestrians	Safe Drinking Water Protect public health by ensuring a safe and viable sewerage disposal system. Flooding is adequately managed in urban areas. We have reliable, efficient and well-planned water, sewerage and stormwater infrastructure that meets the needs of residents. Customer Satisfaction
Sustainable District and Environment	A district that is enhanced through sustainable and diverse development We value the natural environment, biodiversity and landscapes Our heritage is valued and protected	A well-managed roading network minimises the adverse effects on the environment	Ensuring the quality and quantity of discharges to the environment. Maintenance of the reticulation
Active, Diverse and Supportive Community	District assets provide recreation and leisure choice We celebrate and support the good things in our community	Roads and footpaths are an important element in both the residential and rural environment for physical exercise, leisure activities and social contact	

3.2.1 Financial Strategy

The Infrastructure Strategy and Financial Strategy form the pillars that support the Consultation document, and each document has been developed in close cooperation with each other.

3.2.2 Infrastructure Strategy & AMPs

Waimate District Council has a well-developed suite of Asset Management Plans that are formally updated on a three yearly cycle. The Transportation AMP is audited by NZTA, and also integrates the business cases required to support transportation investments.

This Infrastructure Strategy integrates with the AMP's and is developed following the AMP update cycle. This Infrastructure Strategy draws on the detailed analysis contained in the AMPs to set out the high level issues and investment projections.

3.2.3 Significance and Engagement Policy

Waimate District Council developed a Significance and Engagement Policy to determine the significance of issues within the District, and how to align Council engagement with the public based on the degree of significance of the issue.

The Significance and Engagement Policy identifies the assets covered by this Infrastructure Strategy as Strategic Assets:

- Roading Networks and connected infrastructure
- Sewerage Networks and Treatment Plants
- Stormwater Networks
- Water Treatment, Storage and Supply Networks

3.3 Linkage With Other Documents

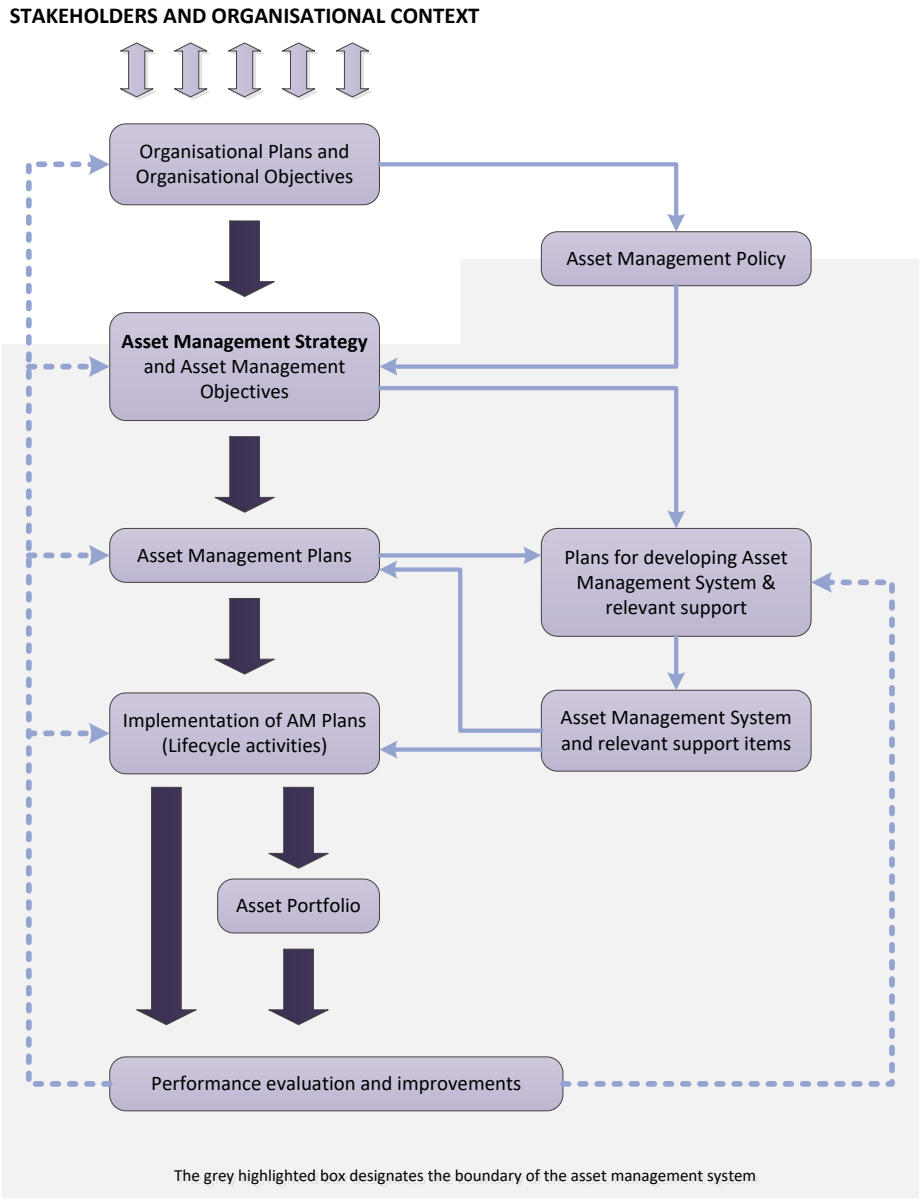
The Infrastructure Strategy and Financial Strategy underpin the Long Term Plan.

The Infrastructure Strategy and the Financial Strategy are key strategic documents for the future of Waimate District. The infrastructure strategy outlines the issues that are expected to arise and how Council proposes to respond to them, while the financial strategy discusses the financial implications and the funding options. In concert, the two are refined to produce the community consultation document. The manner of consultation is defined by the Significance and Engagement policy (and legislation). The Significance and Engagement policy also defines strategic assets that are discussed in the infrastructure Strategy.

Figure 3.1: Infrastructure Strategy – Supporting Long Term Plan 2021-2031

The following diagram illustrates the planning regime form an ISO55000 perspective, showing the Asset Management 'system'

Figure 3.2: Infrastructure Strategy- Linkages with other Documents



3.4 Waimate District Council

The Waimate District Council consists of a Mayor, eight Councillors and 53.08 FTE staff (as at 30 June 2020). The Mayor and Councillor positions are subject to election every three years. The elected representatives are drawn from four wards. Waimate Urban, Lower Waihao, Hakataramea-Waihaorunga, and Pareora-Otaio-Makikihi.

Ultimate responsibility for all of the District Council's activities rests with the Council. The Council decides the range of services and activities to be provided, sets the policy for these services and activities, delegates the implementation of these to the staff and monitors their performance. While the Council has at times considerable freedom and opportunity to exercise its initiative in deciding its aim and policies, it must do this within the laws, regulations and requirements set down by central government. A local authority may only undertake those activities which are permitted by central government.

As well as providing services itself, the Council may contract for services to be provided and assist many other organisations through membership, technical services, advice and financial grants.

The District Council is headed by the Chief Executive, who is responsible to the elected Council for ensuring the effective, efficient and economic management of all the Council's activities.

To carry out its function the Council is divided into the following departments.

- Roading
- Utilities
- Parks and Reserves
- Regulatory and Compliance
- Corporate Services
- Community & Strategy

Figure 3.1 – Waimate District Council Boundary

4.0 CORE INFRASTRUCTURE

The core infrastructure included in this strategy is:

- Water Supply – urban and rural
- Sewerage (Waimate urban)
- Stormwater (Waimate urban)
- Roads and Footpaths.

Figure 4.1 – Map of Waimate District

4.1 Asset Description

4.1.1 Water Supply

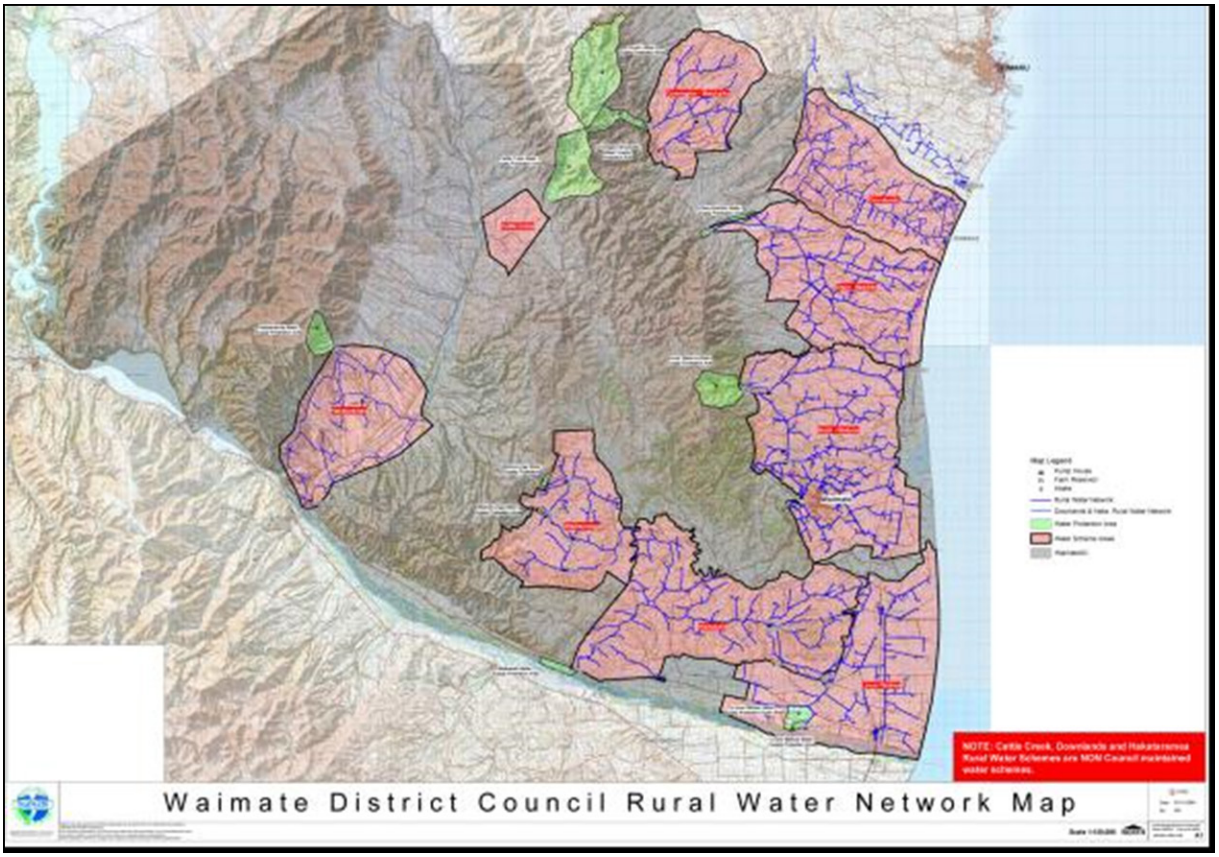
There are seven water schemes owned and operated by Council. This consists of one urban scheme, Waimate, and the remaining six are rural restricted schemes of Cannington Motukaika, Hook Waituna, Lower Waihao, Otaio Makikihi, Waihaorunga and Waikakahi.

The Hakataramea Rural Water Scheme is currently managed by the scheme users. This scheme may revert to revised management arrangements following the completion of government water reforms. This scheme is not included in the Infrastructure Strategy at this revision.

The Downlands water scheme is operated by Timaru District Council and provides water to properties within the Waimate District including St Andrews. The Council has a 14% stake holding in the scheme but has no direct involvement in the scheme apart from the collection of water rates on those properties. Timaru and Mackenzie District Councils have an 82% and 4% stake holding respectively. (The Downlands water scheme has not been included in this dataset).

A summary of the water scheme assets, owned by Council is given in the table below:

Scheme	Treatment Plants	Supply Bores	Pumping Stations	Storage Reservoirs	Dams	Water mains (kms)
Waimate Urban	2	2	0	1	0	65.9
Cannington Motukaika	1	0	1	-	1	56.8
Hook Waituna	1	0	4	-	1	252.1
Lower Waihao	1	2	3	1	0	125.1
Otaio Makikihi	1	0	1	1	0	155.1
Waihaorunga	2	0	4	1	0	67.1
Waikakahi	1	0	1	1	0	176.0
Total	**9**	**4**	**14**	**5**	**2**	**898.1**



4.1.2 Sewerage

The Council collects sewage from approximately 1729 connected properties through the Waimate urban sewerage system. Customers include residential, community and industrial/commercial.

A summary of the Sewerage assets, owned by the Council is presented below.

Asset Description	Units	Quantity
Reticulation:		
Gravity pipes	m	34,391
Rising mains	m	4,789
Laterals (mapped)	No.	1,041
Inspection Pits / Poo Pits	No.	18
Cleaning Eyes	No.	46
Valves	No.	13
Capped Ends	No.	32
Manholes	No.	308
Plant:		
Sewerage Treatment Plant	No.	1
Pump Stations	No.	2

4.1.3 Stormwater

Council owns and operates one significant stormwater system, the system servicing the Waimate Town with an estimated population of 3,000 people. Council owns and operates other systems in St Andrews, Makikihi and Morven townships, but these are considered very minor consisting of some kerb and channel.

With continued changes in weather patterns and rainfall event intensity as a result of climate change Council continues to monitor, model and develop an understanding of the effectiveness of the stormwater system to provide required levels of service. Overland flow paths require investigation, with this being modelled in conjunction with Environment Canterbury.

A summary of the Stormwater assets, owned by Waimate District Council is shown below:

Asset Description	Units	Quantity
Sump	No	27
Pit	No	19
Manhole	No	65
Headwalls	No	7
Open drains	m	5,133
Pipes	m	10,446

4.1.4 Roads & Footpaths

The transport asset includes all Council owned road reserve, roads, streets, bridges, footpaths and related infrastructure (road drainage, signs and streetlights) within the District as shown below.

There is also 120km of state highways through the district, where Council has limited involvement

Asset Description	Units	Quantity
Roads Total	km	1,339
Urban Roads - Sealed	km	48
Urban - Unsealed	km	4
Rural - Sealed	km	598
Rural - Unsealed	km	689
Bridges	No m	182 3,352
Footpaths	km	62.7
Traffic Services		
Signs	No	4064
Posts	No	1,826
Street Lighting	No	495
Drainage		
Culverts	No m	3,482 36,485
Concrete Fords	No m	85 1,696
Kerb and Channel & Dish Channel	km	48.5

4.1.5 Other Infrastructure

Council has considered the inclusion of other asset groups in this strategy, particularly parks and reserves, and solid waste. A large portion of the parks and reserve portfolio is operations focussed, and there are few assets involved in the solid waste activity. Both of these activities have sufficient planning within their respective activity management plans. Maintaining the overall liveability of the district remains a core service delivery function of Council.

4.2 Assumptions and Risk

Council has developed and adopted a set of assumptions to assist with the strategic planning process. Where there is some uncertainty about the issues that affect planning and what response Council chooses, an assumption with qualifications on likelihood and impact are made.

There are also many risks that are associated with long term delivery of services to the community through infrastructural assets. There is a high level of uncertainty about these risks and the impact that could be expected. These are also discussed under assumptions..

Assumptions

Table 4.1 summarises the significant assumptions that have been applied for the purpose of producing forecasts for the Roading and Footpaths, Water, Sewerage and Stormwater activities. An indication of the risk, impact and level of uncertainty associated with each assumption has been provided. Where the level of uncertainty associated with an assumption has been assessed as 'Medium' or 'High', Council's proposed action to reduce uncertainty and mitigate the level of risk has been presented.

Table 4.1: Significant Forecasting Assumptions

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Population Change						
The Waimate District population will observe a gradual increase by 4.38% between 2020-2030. It is assumed that this increase will generate a relative impact on population-related metrics, such as the quantity of rateable properties.	Rationale	Population growth either significantly exceeds that of the projected percentage, or is significantly below the projected percentage.	Low	If population accelerates significantly above the given assumption, existing infrastructure may not be suitable to cope with the extra demand.	Council will monitor population measures provided for the district, and will respond to significant variations to assumptions, where possible.	All activity groups
Demographic Changes						
Between 2020-2030, the district's population retains its comparatively high mean age, while observing a gradual and mild reduction in the mean age level, with the age group of 45-49 years likely to be the most frequent by 2030.	Rationale	The demographic make-up of the Waimate District changes significantly.	Low	If the district's demographic changes significantly from the predicted range, the existing infrastructure may not meet the needs of the relevant demographic classes.	Council will monitor demographic measures provided for the district and respond to significant variations to assumptions, where possible.	All activity groups

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Climate Change						
The effects of climate change are expected to manifest in three categories. These are: a) gradual change in meteorological conditions (for example, change in temperature, more severe weather conditions and events, rising of sea level, coastal and inland erosion, among others), and b) b) general socio-economic consequences of such changes, and c) c) socio-economic consequences of policies/measures designed to curb the adverse effects of climate change.	Waimate District Council	Environmental changes may accelerate at a rate higher than predicted, and/or the socio-economic consequences of adaptation measures may exceed the anticipated range.	Moderate	If environmental changes were to accelerate, Council's infrastructure assets would be significantly impacted. This would result in further modifications or more regular repairs to relevant assets.	Council will monitor the operational and socio-economic effects of environmental changes and adapt its response where required, if possible.	All activity groups
The Emissions Trading Scheme (ETS) became law in September 2008, resulting in minor cost increases. As the ETS grows, Council anticipates that the introduction of new areas will continue to have increases and that those increases are recognised in Council's inflation figures.	Ministry for the Environment	There is a risk of legislative change, which could result in costs being higher or lower than assumed.	Moderate	Should the impact of the scheme exceed significantly from the given assumption, budget for additional cost may need to be considered.	Council will monitor the development of relevant legislation and review the impact of any significant changes in the Annual Plan.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Oil Price						
Due to the instability of the international petroleum market (as caused by the effects of the COVID-19 pandemic), fuel prices are likely to fluctuate for a period of time. However, it is assumed the time period will be relatively short, as the petroleum market has historically demonstrated a tendency to stabilise rapidly, where possible.	Waimate District Council	There is a risk that fuel demand will be different to that assumed, and that significant changes in market price occur with greater frequency and/or greater severity.	Moderate	Increased fuel costs would have a particular impact on the costs of road maintenance, renewal, and improvement. This may affect Council's ability to carry out planned work without additional funding. It may also increase demand for alternative methods of transport.	Council will monitor the impact of fuel price on spending and aim to optimise spending.	All activity groups
Waka Kotahi New Zealand Transport Agency Revenue						
Roading expenditure comprises a significant portion of Waimate District Council's total expenditure, therefore using a significant portion of Council's overall rate take. The majority of Council's expenditure on the district's roads is eligible to attract an assistance rate from the Waka Kotahi New Zealand Transport Agency (NZTA). It is further assumed that the funding assistance rate received by Council for qualifying roading expenditure for maintenance and improvement projects is set at 64% for 2020/21 onwards.	NZTA	The subsidy rate may be subject to change, along with any variation in criteria for inclusion in subsidised works programmes.	Moderate	Changes to the funding priorities of NZTA remain outside Council control. Minor variations would impact significantly on forecasted financials.	Any impact of changes to the NZTA funding assistance rate will be applied to the relevant Annual Plan.	Roading and Footpaths

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Grants and Subsidies						
It is assumed that all projects funded, or partially funded, from grants and subsidies will be available in the year the expenditure is planned. If the funding is not received, it is most likely that the project will not proceed in that year. Examples of projects where funding is assumed are roading maintenance and improvements, and bridge renewals.	Waimate District Council	Subsidies are not received and projects do not go ahead.	Moderate	Some projects have a more significant impact than others if they do not proceed in the planned year. The roading projects where Council rely on NZTA funding may result in reduced level of service.	Build robust business cases and regular liaison with the relevant funding bodies to ensure projects (with a high likelihood of receiving funding) are included in the Long Term Plan.	Roading and Footpaths, Property
New Zealand Drinking Water Standards & Service Delivery						
While it is assumed that that there will be change to the ownership and delivery of Three Waters in the next ten years, Council is not able to predict with absolute certainty what those changes will be. It is unlikely that details will be known earlier than mid-to-late 2021. This LTP has been developed on a business-as-usual basis for the delivery of Three Waters; but the change is very likely to occur over the mid-term (3-5 years).	Central Government Waimate District Council	Legislation changes under urgency in Parliament that must be implemented immediately	Moderate	Changes are required to be implemented more quickly than anticipated, and/or changes are mandatory rather than voluntary.	Council closely monitors any and all developments, and responds accordingly.	Rural Water Supply, Urban Water Supply
Resource Consents						
The conditions of resource consents held by Council may be changed, and that Council will obtain the necessary resource consents for planned projects.	Waimate District Council	There is a risk that resource consent conditions are altered significantly.	Moderate	Advanced warning of likely changes is expected. The financial effect of any change to resource consent requirements would depend on the change.	Council will monitor the development of relevant standards and review the impact of any significant changes.	Roading and Footpaths, Sewerage, Stormwater, Waste Management, Urban Water Supply, Rural Water Supply

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Emergency Event						
Disruptive or destructive emergency events such as earthquakes, extreme weather events, and pandemics may occur to damage, disable, or destroy community infrastructure (for example, district roads, bridges, water supplies, among others), or community activities. It is further assumed that the cost of correcting such damage is met either by Council or its insurance providers, or by possible special government grants.	Waimate District Council	Inability to recover or continue business following a major event.	Moderate	If a major emergency event did occur, Council have some insurance for its infrastructure, and assistance would be offered from Central Government. To pay for additional emergency work not covered by the above, Council would increase internal/external borrowings.	Council undertakes business continuity plans for its own operation, and coordinates Civil Defence planning for the district. In doing so, Council attempts to prepare itself and the district for such events.	All activity groups
Development Contributions						
With the Resource Management Act 1991 able to revoke Council's ability to levy financial contributions (effective 18 April 2022), it is expected that Council will still be able to recover development contributions from that date onwards. It is further assumed that the level of funding recoverable under each system will be broadly similar.	Waimate District Council	There is a risk this change will result in significantly different funding levels.	Low	If the available funding levels change, this will have an impact on the rates required to address any shortfall/surplus.	Council will review its funding requirements prior to 18 April 2022 and ensure funding requirements match to demand.	All activity groups

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Water Irrigation Schemes						
Council does not expect major irrigation schemes to be introduced into the district over the period of the Long Term Plan.	Waimate District Council	New major schemes are introduced.	Low	The introduction of a major irrigation scheme is likely to produce minimal impact on Council, but a more considerable impact on the district's agricultural sector.	Council will monitor the environment in regard to any potential development, and seeks to remain involved in discussions/proposals.	Roading and Footpaths, Rural Water Supply, Sewerage
District Economy						
Despite the major impact of the COVID-19 crisis on the national economy, the Waimate District's economy is comparatively less negatively impacted, due to its specific characteristics as an area reliant on essential services and production.	Waimate District Council	Any significant reduction in income stream for any sector poses a risk.	Moderate	Drop in commodity prices - disposable spending cut back, loss of employment, closure of business. Increase in commodity prices - the reverse of the above occurs.	Council will consider the state of the district's economy when reviewing its Annual Plan and how this compares to the position assumed in the Long Term Plan.	All activity groups

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Useful Lives of Significant Assets and Depreciation						
It is assumed reassessments of the useful lives of significant assets during the ten year period covered by this Long Term Plan will continue every three years. The detail of useful lives for each asset category is covered in the Statement of Accounting Policies.	New Zealand Asset Management Support Waimate District Council asset revaluations	There is a risk that assets will wear out more quickly than forecasted and require replacement earlier than planned.	Moderate	If assets require replacement earlier than first considered, capital expenditure projects may need to be brought forward.	Regular review of the useful life of each asset category reduces the risk of significant inaccuracies.	Roading and Footpaths, Rural Water Supply, Urban Water Supply
Funds for Future Replacement of Significant Assets						
In general, councils have some flexibility in the policies they may set with regard to sources of funds for the future replacement of significant assets. Council's flexibility centres on whether we should collect depreciation monies from ratepayers during the lifetime of the asset to build up a reserve that can fund the replacement of the asset when it comes to the end of its useful life, or when the asset comes to the end of its useful life which would compel Council to rely on borrowed money to replace it. Council considers that the most sensible approach is to collect depreciation during the life of an asset, therefore having reserve funds on hand at the time replacement is needed. See Council's 'Revenue and Financing Policy' and the 'Financial Strategy'.	Waimate District Council	Sufficient funds may not be available to pay for planned asset replacement.	Low	Funds may need to be borrowed or rated for, which may be a burden to either the Council or ratepayers in the future.	Council develops Asset Management Plans that determine the timing of asset replacements. Council uses these to forecast and prepare for future funding requirements.	Property, Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Revaluation of Non-Current Assets						
Council conducts asset revaluations every three years. The Long Term Plan assumes the following percentage increases to book value, for each of the following class of assets: Land: +10% Buildings: +10% Utilities (Water Schemes, wastewater, stormwater, Sanitation): +8% Roading: +6%	Waimate District Council	Revaluations will somewhat differ from those projected carrying values of the assets and depreciation expense.	Moderate	Variation in values is expected to be low unless the valuation methodology changes.	Regular revaluation of non-current assets reduces the risk of significant valuation shifts.	Roading and Footpaths, Rural Water Supply, Urban Water Supply, Sewerage, Property
Forestry Asset Values						
It is assumed that the forestry asset values will increase annually over a rotation cycle of 30 years.	Waimate District Council	The value of forestry assets may sharply increase or decrease.	Low	A change in the value of the forestry asset will change Council's financial performance in the year of change occurring. However, it will not have a direct impact on the level of rates or expenditure.	Annual revaluation of forestry reduces the risk of significant valuation shifts.	Investments and Finance

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Return on Investments - Alpine Energy						
Alpine Energy returns will be in line with the company's FY2022-2024 Statement of Corporate Intent which includes a Dividend Policy of 6c per share, through to 31 March 2024. Thereafter it is assumed the dividend will remain at 6c.	Waimate District Council (in conjunction with its respective advisors)	There is a risk that returns on investments will be higher or lower than forecasted.	Low	Council is aware of the factors contributing to the changing nature of Alpine Energy's overall profit. If revenues are depressed for a sustained period, the company will be unlikely to maintain dividends at the proposed level.	Council plans to reduce its reliance on any dividend income that presently supports core operational activity.	Investments and Finance
Capital Delivery						
Council plan to deliver 100% of all capital projects over the life of the Long Term Plan. The financial model was developed based on this assumption.	Waimate District Council	There is a risk that improved levels of service in the Water Supply area will be delayed. There is a risk that the capital projects will not be completed in any given year, and carried over to subsequent years.	Moderate	Variation to planned improved levels of service for the Water Supply area, where any delay in projects relating to Drinking Water Standards New Zealand compliance will result in maintaining current levels of service. If projects are not completed on time, or are	Additional resourcing (1.5 FTE) has been engaged to ensure the timely delivery of proposed LTP and Stimulus Fund projects. All capital works have been scheduled for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Council is aware of material sourcing and has addressed this issue by sourcing materials early and maintaining stock levels. Procurement is now	Water Supply & all other activities

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
				deferred, there may be reduced operational costs and depreciation expense impacts. There could also be an increase in required budget to complete the project if delayed.	completed through the Government Electronic Tenders System (GETS), notifying the wider contracting / consulting market of upcoming projects. In anticipation of a large capital programme in Year 1 (2022), a portion of these projects are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. Due to the nature of the rates smoothing profile for the Water Supply activity, any delay in project completion will have no effect on the funding and rates required as planned.	

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Return on Investments - other						
It is assumed that Council's cash investments will generate a 1% return based on the current economic climate. It is further assumed that the returns from Council's forestry investments for the duration of the Long Term Plan will be reflective of market conditions present at the time of preparation of this document.	Waimate District Council (in conjunction with its advisors)	Returns on investments will be higher or lower than forecasted.	Moderate	Higher interest rates received on cash investments or increased investment income could result in positive cash-flow enabling consideration of higher levels of service or reduced expenditure. Council does not heavily rely on interest revenue for running its operations, therefore the impact of lower investment returns on delivery of Council services would be minimal. Similarly, Council does not use its forestry investment returns to fund other Council operations or activities.	Council sets and maintains its internal interest to provide certainty to internal capital reserves. Council will manage its external investments to optimise returns (as described in the Council's Investment Policy). Council will monitor the forestry market's conditions and review the impact of any significant change in forecasted returns through each subsequent Annual Plan process.	Investments and Finance

<table>
<tr><th>ASSUMPTIONS</th><th>SOURCE</th><th>RISK</th><th>LEVEL OF UNCERTAINTY</th><th>IMPACT OF VARIATION TO ASSUMPTION</th><th>MANAGEMENT OF RISKS</th><th>ACTIVITY</th></tr>
<tr><td colspan="7">Inflation</td></tr>
<tr><td>Council, along with many other New Zealand Councils, calculates and applies inflation factors to its 10-year budget forecast, using predictions of future inflation levels from New Zealand [economic research company] Business and Economic Research Ltd (BERL).
Increase Percentage by Type:
<table>
<tr><th>Year</th><th>Roading %</th><th>Property and Parks %</th><th>Water %</th><th>Staff %</th><th>Other %</th><th>Wastewater %</th><th>Capital Expenditu %</th></tr>
<tr><td>June 2022</td><td>3.3</td><td>1.7</td><td>7.2</td><td>4.8</td><td>1.7</td><td>7.2</td><td>4.0</td></tr>
<tr><td>June 2023</td><td>3.1</td><td>2.0</td><td>3.4</td><td>2.4</td><td>2.0</td><td>3.4</td><td>3.0</td></tr>
<tr><td>June 2024</td><td>3.0</td><td>2.0</td><td>2.1</td><td>1.5</td><td>2.0</td><td>2.1</td><td>2.6</td></tr>
<tr><td>June 2025</td><td>2.9</td><td>1.9</td><td>2.3</td><td>1.7</td><td>1.9</td><td>2.3</td><td>2.6</td></tr>
<tr><td>June 2026</td><td>2.9</td><td>1.8</td><td>2.6</td><td>2.0</td><td>1.8</td><td>2.6</td><td>2.7</td></tr>
<tr><td>June 2027</td><td>2.9</td><td>1.8</td><td>2.3</td><td>2.2</td><td>1.8</td><td>2.3</td><td>2.6</td></tr>
<tr><td>June 2028</td><td>2.9</td><td>1.7</td><td>3.0</td><td>2.3</td><td>1.7</td><td>3.0</td><td>2.8</td></tr>
<tr><td>June 2029</td><td>2.9</td><td>1.7</td><td>3.3</td><td>2.4</td><td>1.7</td><td>3.3</td><td>2.8</td></tr>
<tr><td>June 2030</td><td>2.9</td><td>1.7</td><td>3.3</td><td>2.6</td><td>1.7</td><td>3.3</td><td>2.9</td></tr>
<tr><td>June 2031</td><td>2.9</td><td>1.6</td><td>2.7</td><td>2.7</td><td>1.6</td><td>2.7</td><td>2.7</td></tr>
</table></td><td>Business and Economic Research Ltd.</td><td>Inflation will be higher or lower than anticipated.</td><td>Moderate</td><td>A difference between the inflation rates experienced and those assumed will change the cost base of Council, and therefore impact funding requirements.</td><td>Council has endorsed the rates produced by BERL as the most appropriate basis for accounting for the impact of inflation and preparing the Long Term Plan.
In the event of significant changes to the underlying costs supporting work in the activity areas, mitigation planning will feature in the Annual Plan.</td><td>All activity groups</td></tr>
<tr><td colspan="7">Borrowing Costs</td></tr>
<tr><td>Interest costs are estimated to be 3%. This refers to the internal cost of borrowing, along with the expected external cost of debt facilities (for example, Waimate Event Centre public debt) where costs are not known, and are required to be projected.</td><td>Waimate District Council (in conjunction with its financial advisors)</td><td>Interest rates will differ significantly from those estimated.</td><td>Low</td><td>If borrowing costs are greater than those assumed, Council may need to increase its rates or reduce its expenditure. Conversely, lower costs may mean rates are lower than they would otherwise have been.</td><td>Council will monitor its applicable rate and adjust it through the Annual Plan process to reflect a level best aligned to its external borrowing rate and ability to generate returns on internal debt.</td><td>Investment and Finance</td></tr>
</table>

ASSUMPTIONS	SOURCE	RISK	LEVEL OF UNCERTAINTY	IMPACT OF VARIATION TO ASSUMPTION	MANAGEMENT OF RISKS	ACTIVITY
Unidentified Liabilities						
It is assumed that Council does not have any unidentified liabilities.	Waimate District Council	There is a risk of an unexpected liability occurring. For example, a claim against Council.	Low	If an unidentified liability arises it may increase Council's expenditure. This risk is mitigated by the Council's Risk Management and Insurance Policies.	Regular review of liabilities reduces against the risk of items being unidentified.	N/A

Remaining useful lives are discussed in greater detail within the associated asset management plans where the financial impacts associated with the predictive modelling of asset renewal are indicated. Deviation from the predictive model is discussed in terms of asset performance, criticality, renewal, smoothing, and risk. (see Lifecycle Management Plans, Water, Sewerage, Stormwater, and Roading AMP's).

4.3 Performance and Condition

Performance is tracked against a suite of levels of service which are developed through the Long Term Plan process and reported through the Annual Plan. The Mandatory Performance Measures are central to these.

The Long Term Plan should be referenced for these levels of service, and activity management plans for further detail.

Detailed discission on asset performance and condition is included in the respective Activity Management Plans. The following comments are high level and general only.

- Water reticulation condition and performance is good, but can be expected to be challenged as pipes near their expected life.
- The condition and performance of asset components at the treatment plants and pump stations are all considered by Council's engineers as good to excellent.
- Wastewater reticulation condition and performance is adequate, and is more frequently challenged as pipes near their expected life.
- Most of the Wastewater Treatment Plants is relatively new, Council engineers consider the condition of the WWTP assets to be excellent. The performance of the WWTP is considered to be very good
- There are no pipe condition ratings for the stormwater pipe assets but the Council engineers consider the condition of the stormwater reticulation in general to be in good order. The stormwater network is relatively limited and proven to be inadequate for some locations during times of heavy rainfall.
- The roading network is in good order, and levels or service are structured around the One Network Road Classification approach.

There is some backlog for roading renewals which are being addressed through works programmes. Backlog is less defined for water assets, but addressed adequately through criticality and condition assessments driving works programmes.

4.4 Data Quality

Council has been progressively improving data to underpin robust decision making. Each activity management plan contains an assessment of data suitability and a programme for improvement.

Roading data quality is considered through the REG data quality programme.

An overview of data quality is provided in the infrastructure valuations below and is further discussed in Section 6.6

Assessment of Confidence Levels

Asset	Valuation year	Quantity	Replacement Cost	Life Expectancy	Condition
Water assets	2017	B	B	B	C
Wastewater assets	2020	B	B	B	C
Stormwater assets	2020	B	B	B	C
Roading Assets	2020	A/B	A/B	B	B

5.0 MANAGING CHALLENGES AND EMERGING TRENDS

The task of building, operating and maintaining these infrastructure assets in an **affordable** and **sustainable** manner is becoming increasingly difficult in view of:

- Demographic changes
- New technologies
- Continually changing legislative environment (Central & Regional Government)
- Environmental impacts
- Infrastructure resilience
- Aging of infrastructure
- Economic Activity
- Affordability
- Skill Shortage (potentially worsening due to industry structure uncertainty)

5.1 Demographic Changes

Population growth (or decline), age structure and distribution (spread), and the number and type of households and families in our district affects:

- Demand for local services
- The willingness and ability of ratepayers to pay for them
- Representation and participation in local democracy
- Interactions between human activity and the environment.

In the past Waimate District Council have used the growth projections prepared by Stats NZ. The Council are now looking for a more in-depth understanding of what their district might look like over the next 30 years. This, coupled with the delayed release of the Stats NZ projections following the 2018 Census, has led the Council to commission these growth projections from an external specialist. The 2020 projections have been developed using a bottom up approach. Individual growth drivers for each Statistical Area 2 (SA2) have been developed using migration for employment and lifestyle as the basis of the modelling. The 'Waimate District Council Growth Projections, August 2020' reporting prepared by Rationale enables the organisation to understand the future growth in their district and provide a single source of the truth for the Council.

A 'Medium' growth scenario has been recommended as the expected level for growth in the next 30 years. This information is used to inform key projects, plans and strategies. The scenario incorporates short term effects in population changes due to COVID-19. However, it is not yet known what, if any, long term effects there will be. Due to this uncertainty it is recommend that annual "check-ins" are completed with the most up-to-date data to monitor the impact of COVID-19 and the progress of recovery. At this time growth can be re-projected, if necessary.

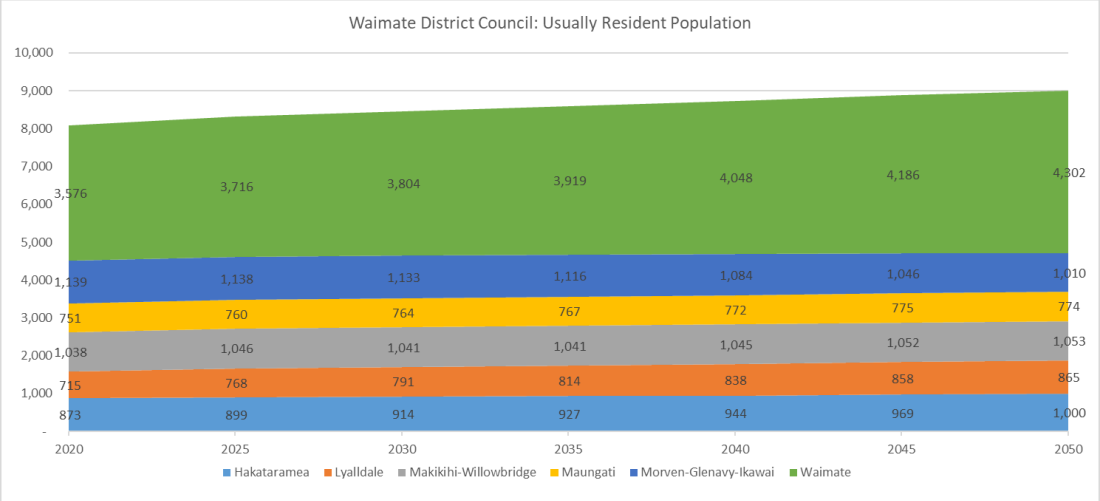
Population Projections (Usually Resident Population)

Over the next 30 years, the usually resident population of Waimate District is predicted to increase slightly.

The average age of Waimate District's population is older than the national average of 37.3 years (Stats NZ). Looking across the district, Waimate town has a significantly older average age of 48.6 years in 2020 when compared to the outlying rural areas. This makes sense as people are living and working on farms then moving into Waimate for retirement later in life.

The recommended medium growth scenario projects the District's population to increase to 9,000 by 2050. Based on the medium projection, the population of the Waimate District is projected to grow by, on average, 0.4% a year between 2017 and 2050. This is less than the projected 1.0% a year growth rate of the Canterbury region and New Zealand's total population.

Figure 5.1: Waimate District Population Projections 2020-2050



With a low base population, significant industrial projects are capable of having an impact of the District's population. Further expansions of both Oceania and Fonterra Dairy Factories in the next ten years could increase job opportunities in the District. Whilst not predicted, future irrigation schemes have potential to see an increase in on-farm jobs in the District and the creation of secondary jobs as a result of increased agricultural production in wider South Canterbury. Should all of these projects proceed the District may see population growth trending more towards the high projection. While this may appear conservative, it is important that Council does not overestimate population growth and the associated infrastructure provision required. Also reflects that a considerable number of employees from both dairy factories live in either the Waitaki or Timaru Districts. Given the close proximity of both Timaru and Oamaru to these sites, increased job opportunities may not necessarily equate to comparable population increase in the Waimate District. Growth over the next 30 years of between 1,000 and 2,000 people is likely

Natural Decrease

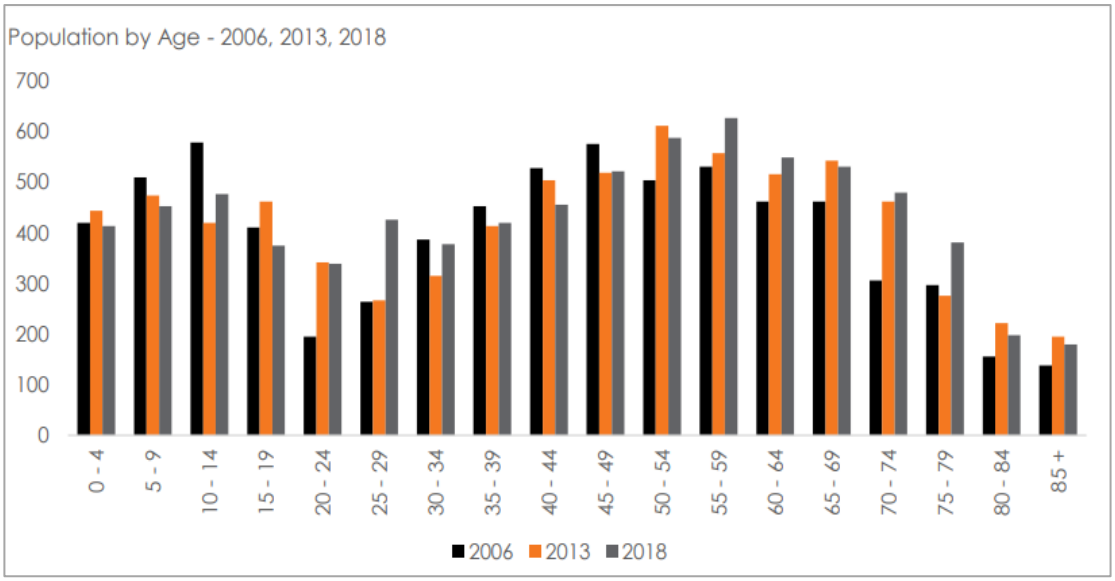
As New Zealand's population continues to age, more and more areas will consistently experience a natural decrease, i.e. more deaths than births (3 territorial authorities experienced this between 2010-2014). For areas that have traditionally relied on a natural increase for population growth (including Waimate), a natural decrease will mean a shrinking population unless offset by net migration gains. Within the Waimate District, natural decrease is projected to occur by 2038. Without net migration gains, the population will probably decrease.

Larger proportion of older people

Under the medium projection series, Waimate District is projected to have a higher proportion of older people (aged 65 and over) in 2050 compared with 2020.

In 2013 19.5% of the Waimate District population was aged 65 and older.

Figure 5.2: Waimate District's population by Age – 2006, 2013, 2018. Source: NZ Stats

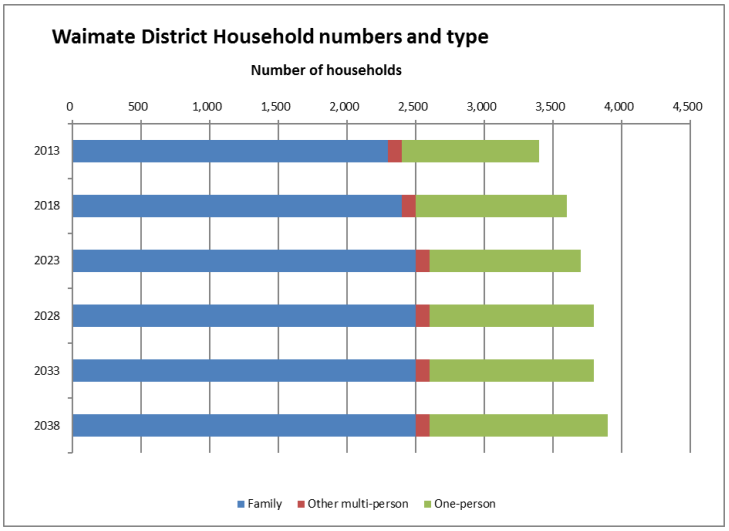


Households

Based on 2013 analysis the number of households in the District is projected to increase by an average of 0.7% a year, lower than the national and Canterbury regional increase of 1.1%.

The average household size in the Waimate District is set to decline from 2.3 people in 2013 to 2.1 people by 2038.

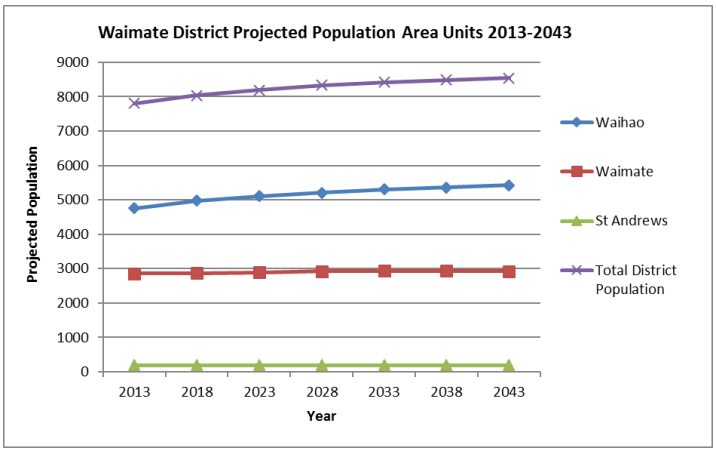
The number of one person households is the fastest growing household type in the Waimate District, increasing by an average of 1.2% per year.



By 2038 33% of Waimate households will be one-person households and over 15% of Waimate residents will be living alone.

Population Location

Based on 2013 analysis the projections show that the majority of the growth in the Waimate District will occur in the rural areas with a 14.1% growth in the Waihao area unit over the 30 year period 2013-2043 (an average of 0.46% a year). Rural growth, in keeping with the District-wide trends, is projected to be decrease over the 30 year period. In comparison, the Waimate area unit (which is urban) will grow by 2.1% (.06% on average per year). This urban growth will also slow over the 30 year period, and between 2033 and 2043 the population of the Waimate area unit is projected to decline.



5.2 New Technologies

From a strategic point of view the Council seeks to remain aware of technological advances primarily through staff involvement in industry developments via training, seminar attendance and directly from suppliers. Internal development of new technologies is advanced through collaboration between staff and with other councils. Staff maintain strong relationships with professional staff from neighbouring councils.

The greatest change expected to be observed in the district is intensification of farming, balanced by changes in farming practices driven by national fresh-water reforms, zero emissions targets and environmental sustainability objectives.

Should large scale irrigation projects proceed in the future, the construction period will impact local roads and possibly the demand for rural water supplies. However, observations from other areas indicate the establishment of irrigation schemes have not reduced the demand for reticulated stock water.

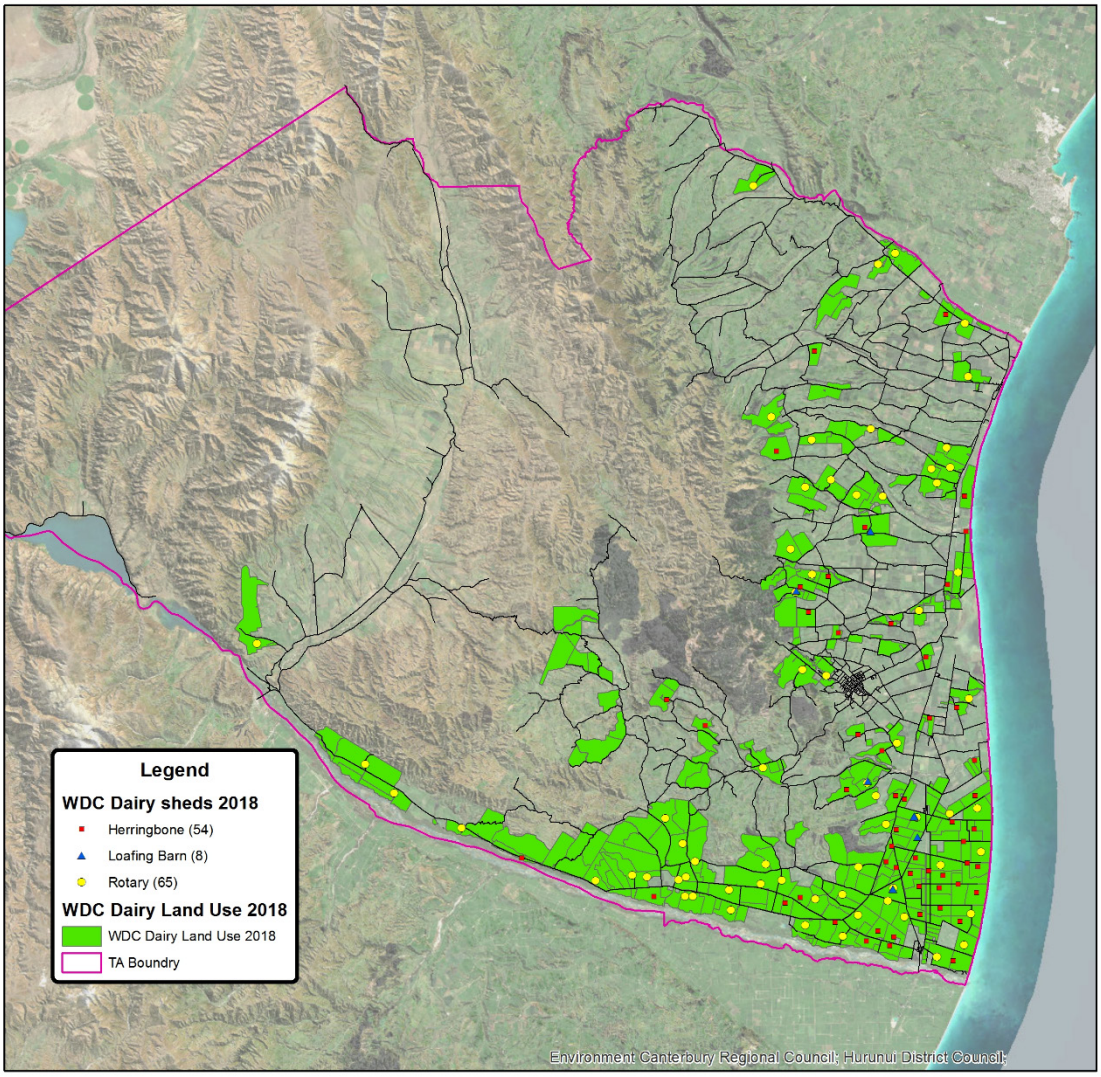
Agricultural intensification is usually associated with a step change in transportation demand on the existing roading network. Carting in stock foods and pasture supplies as well as carting product out will usually involve more truck movements using larger trucks.

This (potential) irrigation related intensification change may be offset by national freshwater management, zero emissions and environmental sustainability objectives. In total these changes could result in a decline in farm profitability, farm expenditure and lower farm related employment. Farming practices and land use would adapt, with perhaps a resurgence of sheep and beef farming and less dairy conversion. This could lead to less traffic movements on rural roads. The potential adaption is not currently known. Council will continue to monitor trends and adapt infrastructure investment as required.

Harvesting machinery is very large and some roads in the District are unsuitable for the dimensions or mass of such vehicles.

Dairy Farmland in the Waimate District 2018

Total Dairy 46,189.01 Hectares (2018) (41,531,00ha, 2014)



The vehicle fleet is expected to change in the next 30 years. In 20-30 years, electric vehicles are expected to be common, as well as some autonomous vehicles. Changes to freight movement is likely, but the technology is still developing.

5.3 Changing Government Priorities and Legislative Environment

National Policy Statement for Freshwater Management

The National Policy Statement for Freshwater Management provides direction on how local authorities should carry out their responsibilities under the Resource Management Act 1991 for managing fresh water.

This policy was replaced on 3 September 2020 and requires regional councils to improve water quality and meet targets, giving effect to Te Mana o Te Wai. There are new requirements for regional councils to follow when managing the level of nutrients – such as nitrogen and phosphorus – which can get into waterways. This requires the consideration of cumulative effects.

The National Policy Statement on Fresh Water, which has influenced the Canterbury Land and Water Regional Plan, will require increased standards for stormwater discharges over the life of this Infrastructure Strategy. Council is progressing a Global Consent for stormwater activities.

National Policy Statement on Urban Development 2020

WDC sits as a Tier 3 urban environment.

"Tier 3 local authorities are strongly encouraged to do the things that tier 1 or 2 local authorities are obliged to do under Parts 2 and 3 of this National Policy Statement, adopting whatever modifications to the National Policy Statement are necessary or helpful to enable them to do so"

Consideration and implementation through the upcoming District Plan review.

Taumata Arowhai, and the Water Services Bill

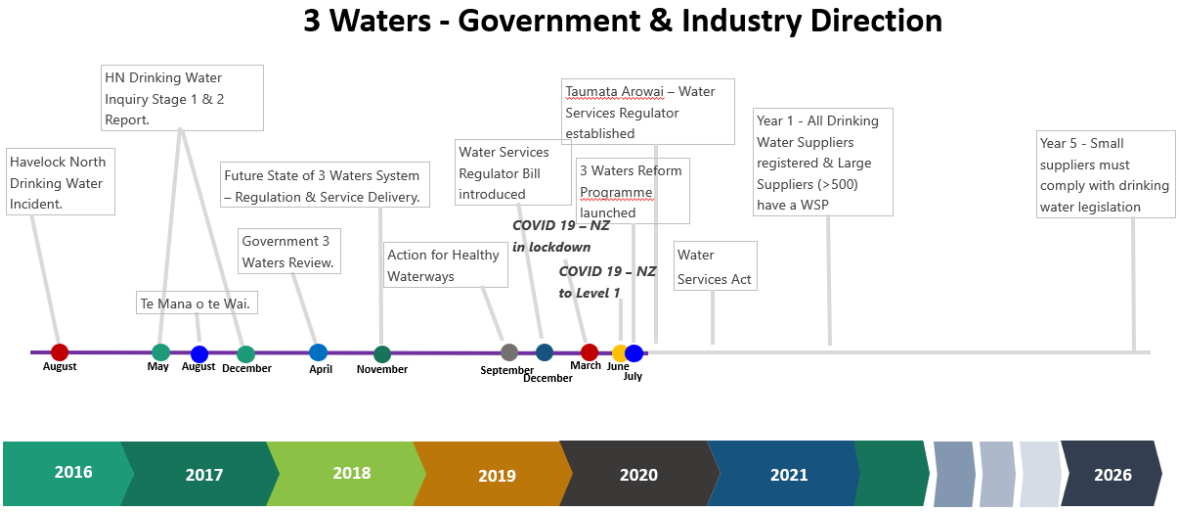
Taumata Arowai – the Water Services Regulator Act received Royal Assent on 6 August 2020. The Act establishes Taumata Arowai–the Water Services Regulator and provides for its objectives, functions, and governance arrangements.

Taumata Arowai will oversee, administer and enforce a new and strengthened drinking water regulatory system. It will also have a national oversight role to improve the environmental performance of storm water and wastewater networks. The requirements of Taumata Arowai for the strengthened drinking water regulatory system are still under development at the writing of this Infrastructure Strategy. The implementation of the new requirements is expected to take 3-5 years. Council has made allowance for meeting anticipated new compliance requirements in the operational costs of the water and sewerage activities.

A separate Bill, the Water Services Bill, has been introduced in 2020, will give effect to decisions to implement system-wide reforms to the regulation of drinking water and source water, and targeted reforms to improve the regulation and performance of wastewater and stormwater networks. The Regulator's detailed functions and powers are located in that Bill. The Water Services Bill is currently before Select Committee and public submissions. The Bill is expected to be enacted in the second half of 2021.

Water Industry Reform

In providing the 3 Waters Services the Waimate District Council keeps a weather eye on the Central Government and Industry direction for the national infrastructure assets and public service provision. This is done through attending conferences and seminars, studying reports released by Central Government agencies and membership of industry organisations e.g. IPWEA, Water NZ, etc.



The August 2016 Havelock North Water incident and subsequent Inquiry has renewed the focus on the very high standard of care and diligence required to supply drinking water.

During 2017 the Minister for Local Government initiated the Government 3Waters Review to assess whether current local government practices and the system oversight are 'fit for purpose'. This review ran in parallel to the latter stages of the Havelock North Inquiry and raised a range of questions around the effectiveness, capability and sustainability of the current New Zealand water service delivery model.

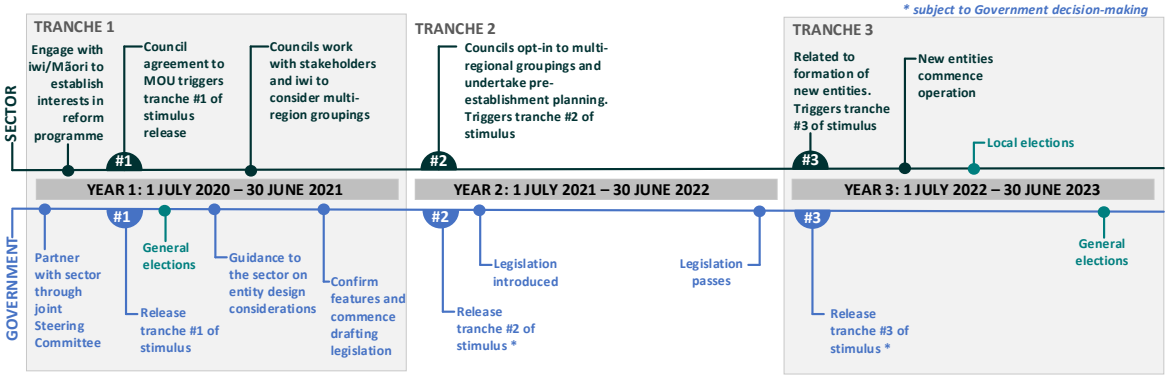
During 2017 the Government announced changes to the National Policy Statement for Freshwater Management – Te Mana o te Wai. Te Mana o te Wai is a concept for fresh water, which when given effect, the water body will sustain the full range of environmental, social, cultural and economic values held by iwi and the community. This requires councils to involve iwi/hapū in the management of freshwater, work with them to identify their values and interests, and reflect those values and interests in decision-making.

The MfE discussion document 'Action for Healthy Waterways' released September 2019 signals the direction for urban development, rural land and water management including Risk Management Plans for wastewater systems and stormwater systems.

Towards the end of 2019, the Government agreed to establish a new drinking water regulator as an independent Crown entity. Associated legislation is expected to be passed by the end of 2021 and the establishment and roll out of the new Regulator - Taumata Arowai will follow and is expected to take a number of years.

In July 2020 the Government announced the 3 Waters Reform Programme consisting of a $761m funding package over the next three years to provide immediate post COVID 19 stimulus to local authorities to maintain and improve three waters infrastructure. Initial funding was only made available to councils that signed up to the Memorandum of Understanding. Waimate District Council signed up to the Memorandum of Understanding and has received Tranche One funding.

Below is an indicative timetable for the full reform programme. While this is subject to change as the reform progresses, this provides an overview of the longer-term reform pathway.



Waimate District Council will continue to communicate and engage with Government over the proposed 3 Waters Reform Programme, the impacts on district three waters service delivery, with the objective of continuing to continue to sustainability deliver agreed Community Outcomes for the districts varied communities.

National Infrastructure Plan

The government's objective is that, by 2045, New Zealand's infrastructure should be resilient and coordinated and contribute to growth and increased quality of life. This will be achieved

through better use of existing assets and better allocation of new investment, as set out in the New Zealand Infrastructure Plan 2015.

The National Infrastructure Plan 2015 (NIP 2015) is the third National Infrastructure Plan to be released by the Government. The NIP 2015 is currently being revised as the National Infrastructure Strategy 2021, which will be delivered to government in the second half of 2021.

The NIP provides a Vision for New Zealand's Infrastructure that:

"By 2045 New Zealand's infrastructure is resilient and coordinated and contributes to a strong economy and high living standards."

This identifies the following challenges:

- We have a number of aging infrastructure networks that will need renewing
- Some of our regions will grow and others will shrink
- Our population is also aging, whilst maintaining a good base working age population
- At the same time, our lifestyles are changing
- Technology is driving change everywhere.
- We also face economic challenges
- On top of these challenges, our climate is changing, and our natural resources are under pressure
- These challenges need to be met at a time when central and local government face financial constraints.

There are three main elements to the response outlined in the National Infrastructure Plan.

- a better understanding of the levels of service we want to deliver
- more mature asset management practices
- more effective decision-making that considers non-asset solutions

The plan is currently under review through the NZ Infrastructure Commission and the 30-year infrastructure strategy is currently being consulted on.

Each of the supporting Asset Management Plans (3 Waters, Roading and Footpaths) contains detailed discussion on infrastructure resilience. Resilience is acknowledged in relation to adverse events, natural disasters and climate change. More importantly, resilience is now a key feature of all asset management planning, particularly in relation to climate change as many of the assets that are constructed (or renewed) have serviceable lives that will ultimately witness the effects associated with our changing climate behaviours.

Government Policy Statement on Land Transport Funding (GPS) – September 2020

GPS 2021/22-2030/31 directs funding for the New Zealand land transport networks. The GPS 2021/22-2030/31 has considered priorities across New Zealand's diverse communities acknowledging that urban, regional, and remote communities have very different needs. GPS 2021/22-2030/31 has four strategic priorities, which are to direct land transport investment into activity that:

- safety (Road to Zero)
- better travel options
- climate change
- improving freight connections

Climate Change Response (Zero Carbon) Amendment Act 2019

The Climate Change Response (Zero Carbon) Amendment Act 2019 provides a framework by which New Zealand can develop and implement clear and stable climate change policies that:

- contribute to the global effort under the Paris Agreement to limit the global average temperature increase to 1.5° Celsius above pre-industrial levels
- allow New Zealand to prepare for, and adapt to, the effects of climate change.

The amendments establish four key items.

1. set a new domestic greenhouse gas emissions reduction target for New Zealand to:
    a. **reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050**
    b. reduce emissions of biogenic methane to 24–47 per cent below 2017 levels by 2050, including to 10 per cent below 2017 levels by 2030
2. establish a system of emissions budgets to act as stepping stones towards the long-term target
3. require the Government to develop and implement policies for climate change adaptation and mitigation
4. establish a new, independent Climate Change Commission to provide expert advice and monitoring to help keep successive governments on track to meeting long-term goals. See the Climate Change Commission website.

Council continues to develop it responses to the Act and is working on the development of relevant internal policies and procurement, as well as facilitating discussions with the Waimate communities regarding the wider impacts and changes signalled by the Zero Carbon Act

5.4 Climate Change

Climate change is considered as a moderate consideration in the Council's long term planning. This Council uses guidance from the New Zealand government, based upon the best available climate science, to support the planning.

Waimate District is expected to experience two of the main impacts of climate change – sea level rise and more extreme weather patterns.

Sea level rise is considered the lesser of the influences as much of our coastline is elevated above MSL. Modelling of associated inundation, as a result of tsunami, is known to affect very few council controlled assets.

What is understood is that climate change associated risks will increase in time.

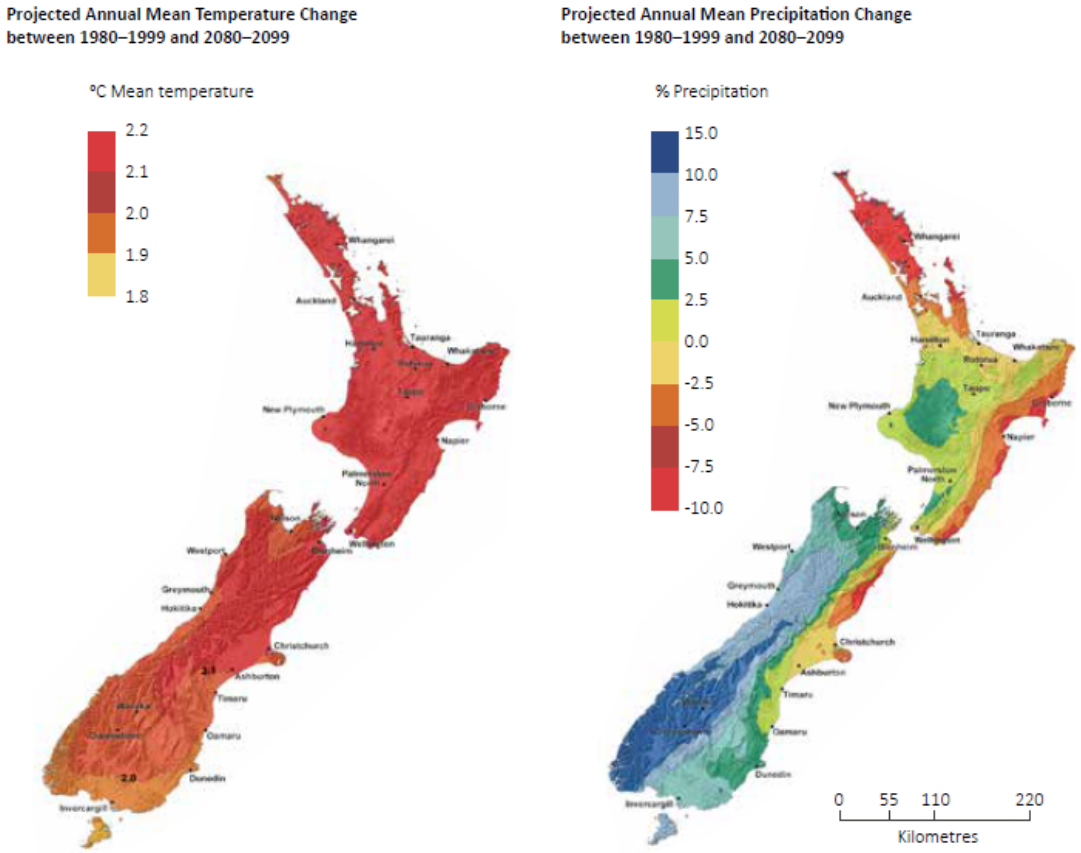
Waimate mayor Craig Rowley said climate change was a priority.

"As far as doing the work on something, we always take it into account looking at the of risk of climate change."

Rowley said it was a hectic time of the year with budgeting and planning, but climate change was something we certainly do recognise" (Timaru Herald 13/9/2017)

Council recognised the roles of Local Government, NZ, the Ministry of Primary Industries, and the Ministry for the Environment and the Royal; Society of NZ in researching and guiding a pragmatic response.

Figure 7: Average changes in annual mean temperature (left, degrees Celsius) and precipitation (right, percent) during 2080–2099 compared to 1980–1999, for a climate change scenario midway between low- and high-carbon futures.



Source: Climate change: implications for New Zealand (Royal Society of New Zealand, April 2016)

The local government position statement on climate change (2017) states

Climate change actions have three components:

1. actions to reduce emissions (mitigation);

2. planning and actions at the national and local level to support public safety and effective adaptation; and

3. limiting or removing pressure on systems affected by climate change.

All local authorities (city, regional, district and unitary) are at the frontline of climate change adaptation and have a role to play in mitigation.

The role of Council is key in delivering the outcomes sought by the community. Key drivers to support and manage the challenges are the National Climate Risk Assessment for New Zealand (Ministry for the Environment, 2020) and the Climate Change Projections for the Canterbury Region (NIWA, 2020).

Projections for Canterbury

Climate Change Projections for the Canterbury Region have considered the following scenarios, which take into account either cutting greenhouse gas emissions over time from 2019 levels – or not curbing emissions during the life of this Infrastructure Strategy.

Average Temperatures

- Increase with time and greenhouse gas concentrations.
- By 2040, annual mean temperature up 0.5 to 1.5°C.

- By 2090, up 0.5 to 2°C (if we cut emissions) or up 1.5 to 3.5°C (if we don't).

Maximum Daytime Temperatures

- By 2040, annual mean maximum temperature up 0.5 to 2°C.
- By 2090, up 1 to 3°C (if we cut emissions) and up 2 to 5°C (if we don't).
- By 2090, western Canterbury's alpine and sub-alpine areas could be 5 to 6°C warmer in spring and summer (if we don't).

Maximum Night-time Temperatures

- By 2040, annual mean minimum temperature up zero to 1°C.
- By 2090, up 0.5 to 1.5°C (if we cut emissions) and up 1 to 2.5°C (if we don't).
- The difference between a day's high and low increases with time and greenhouse gas concentrations.

Hot Days (25°C or more)

- By 2090, expect 20 to 60 more hot days in most of Canterbury (if we don't cut emissions).
- Inland areas feel it the most, particularly the southern Mackenzie Basin, which could have 60 to 85 more hot days.
- Most of these hot days would happen in summer.
- Our warmer season could get longer in relatively low-elevation areas, with 5 to 10 more hot days in autumn and spring.
- Increased fire risks.

Cold Days (Frosts)

- Expect fewer frost days throughout the region.
- Inland areas and higher elevations warm the most, with 10 to 30 fewer annual frost days by 2040, and 20 to 50 fewer by 2090.
- The frost season (the time between a year's first and last frost) will likely get shorter.

Rainfall

There is likely to be increased rainfall depth and intensity associated with climate change. In addition, the heat that comes from the condensation of this increased moisture will make storms more intense. These extreme events may exacerbate flooding risks for Waimate District.

- Most of the region can expect small changes in annual rainfall, up or down 5%.
- By 2040, autumn might be dryer in the Mackenzie Basin, with up to 10% less rain.
- By 2090, winters could be wetter in many eastern, western and southern parts of the region, with 15 to 40% more rain.
- By 2090, Banks Peninsula and many inland areas might get 5 to 15% less rain (if we don't cut emissions).

Snow

- Expect fewer snow days everywhere, especially in the mountains.

Drought
The modelling indicates that by the 2080s, there will be a significant increase in the average water deficit across Canterbury, with increases of between 2 weeks and over 6 weeks of pasture deficit as an average climate condition. By the 2030s, current drought events that are so severe that they only occur in 1 out of 20 years are projected to occur more frequently. Increased fire risks.

Windspeed

- Annual mean wind speeds up slightly, by nil to 5%.
- By 2090, winter and spring could be windier (up 5 to15%, if we don't cut emissions).
- That seasonal change might be more keenly felt in inland areas north and west of Rangiora (up 15 to 25%).
- Increased fire risks.

Sea Level Rise

Climate Change Projections for the Canterbury Region have identified worsening impacts over time at a regional and national level:

- Sea level rise projections for Canterbury are the same as for New Zealand.
- Up by 0.4m in the next 50 years and up 0.6 to 0.7m in 100 years (if we cut emissions).
- Up 0.5m in 50 years and up 1.2 metres in 100 years (if we don't).
- High tides get higher. At 0.65 metres of sea level rise, every high tide is above the spring tide mark (compared to 10% now).

Source: www.wetlandtrust.org.nz

Source: Stuff 24 July 2017

Climate Change Effects

The major effects that may impact on the Council's Infrastructure activities are set out below, along with potential mitigation options and an analysis of when the effects may occur. It should be noted that further work is required to understand how these effects will impact the Waimate District, but the collection and monitoring of data will be used to inform a more robust climate change response.

Dust from Unsealed Roads: Hotter temperatures and associated drought conditions could have detrimental effects in terms of increased dust from unsealed roads. This may mean that in future areas of unsealed roads need to be sealed, particularly close to residential properties. Council currently allows for $50k to part fund "dust seals" via policy. Road classifications and traffic volumes on our low use roads dictate the overall level of service. Individuals are able, with part funding by Council, to increase the level of service adjacent to their property to mitigate adverse effects associated with dust.

Council will continually monitor demand for this service and provide increased funding as required.

Hotter temperatures potentially have an impact on the timing of both grading and metalling activities which will need to be monitored over time.

In the shorter term this approach is considered appropriate but as the effects of drought conditions become more prevalent, Council may need to consider a revision of the level of service relating to unsealed rural roads which, in turn, will adversely affect funding requirements (increased).

- Likelihood - Possible (25 – 50%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Changes in Demand: An overall decrease in the mean rainfall for the district could impact on land use and in turn change demand on certain areas of the Council's infrastructure networks. More intense rainfall events have the ability to damage crops and this may manifest in changing farming practices. These changes in farming practices could result in changing traffic volumes for particular areas, changes in demand from our water networks, and requirements for higher levels of service to mitigate the risks associated with nuisance flooding, to name the major impacts.

Council will need to monitor and understand these requirements to inform future work programmes. This is achieved through regular traffic counts, up-to-date hydraulic modelling of our water schemes and optimised renewal of drainage assets.

Council is mindful that changes in demand with manifest as changes to LoS, geographic demand and overall demand. In order to cater for this, underlying data is important to plan appropriate renewals in the future.

Council is also installing water metering within the urban water network as a means to manage demand, manage water losses and to increase the availability of potable water.

- Likelihood - Likely (50 – 70%)
- Location - District Wide
- Timeframe - 2030 onwards
- Mitigation - Monitor

Drainage Capacity: Extreme rainfall events in a generally dry region may cause surface flooding affects due to poor capacity of drainage assets. The cost of upgrading drainage assets for these extreme events is likely to be prohibitive for Council. Whilst, as a district, council is unable to build infrastructure to deal with these extreme flows and volumes, it is able to define the levels of service (20% and 2% annual exceedance probability) and therefore the level of protection that ratepayers and users can expect.

Mitigation of events outside of these parameters are dealt with through the protection and definition of overland flow paths, defined areas for detention and improved stormwater management practices. These practices (in an urban sense) are defined in Waimate District Councils draft Stormwater Management Plan which is an underpinning document for the global consent that is currently being sought through Environment Canterbury Regional Council. For example, Council defines on-site management of stormwater as the preferred solution up to a 1 in 50 year event. The defined 1 in 50 year design event takes in to account climate change factors defined by NIWA.

Extreme rainfall events have a detrimental impact on councils wastewater network where inflow of stormwater presents several challenges in terms of conveyance capacity and surcharging of manholes. In 2021, council is undertaking an inflow investigation to identify which areas are affected and formulating appropriate responses to mitigate the effects. Left unchecked, climate change impacts would adversely affect this activity. When addressed, this will lead to increased levels of service, allow for future growth by increasing available capacity and reduced compliance risks.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide

- Timeframe - 2021 onwards
- Mitigation - Design, planning, and policy

Increased Flood Damage Repair Work: Extreme rainfall events in a generally dry region may cause surface flooding affects and in turn increase requirements for flood damage repair works. Consideration will need to be given to design and location aspects for Council's assets to reduce the risk of damage or loss of service due to extreme weather events. There is no provision (currently) to fund these repairs and they are typically funded via existing budgets and often with co-funding from Waka Kotahi.

Council is continually monitoring the financial effects associated with flood events (and the diversion of existing budgets) and has considered (in the past) developing a "flood event" fund. This monitoring will continue with intervention likely if existing programmed work begins to be adversely affected. Potentially this issue will need to be consulted on as increased costs will result in increased rate requirement. Resultantly the community will receive a higher level of service than currently experienced.

Furthermore, storm events can impact on raw water quality from streams and bores used for water supply. This presents challenges associated with the provision of potable water in terms of reliability, treatability and therefore compliance with the Drinking Water Standards for New Zealand

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2021 onwards
- Mitigation - Monitor and adapt funding if required

Water availability for Construction: Increasing demand for water is currently an important issue for Canterbury. This increased demand is likely to become increasingly critical in a future characterised by drier average conditions, and an associated increase in both drought frequency and intensity. This may mean, as an example, that it will be more difficult to obtain the required water to complete construction works.

Updating of hydraulic models for the council water supplies allows for optimised future renewals that address the location of demand within the schemes (up or down). They also allow Council to plan for growth and increased demand as a result of changes to legislation e.g. the Water Services Bill and its potential impact on water suppliers outside of the current reform programme.

- Likelihood - Almost certain (70 – 99%)
- Location - District Wide
- Timeframe - 2025 onwards
- Mitigation - Monitor and adapt future programmes as required (LoS, additional demand, changing demand)

5.5 Infrastructure Resilience

Customers have a high expectation of continuing functionality and service delivery. Resilience is based on a design philosophy which acknowledges that failure will occur. Resilience requires early detection and recovery, but not necessarily through re-establishing the failed system.

Council is considering the performance of its infrastructure and services in terms of:

- Climate change – drought
- Climate change- severe storms
- Climate change – sea level rise
- Natural disasters – earthquake

In each case, some reduction in performance is expected. Managing demand and improving infrastructure to be resilient, where there is no redundancy in service delivery, is key. Resilience of the roading network is being considered at a South Canterbury level with a 'One network' approach in mind. Council needs to consider managing and mitigating the risks to our infrastructure assets from natural disasters, by establishing the requirements for resilient transport and lifeline utilities networks.

Actions to address infrastructure resilience is discussed in more detail in section 6.5.

5.6 Aging infrastructure

The infrastructure is aging and the district is approaching an important period to ensure that its infrastructure assets continue to meet the needs of the community in the future. We need to consider when we are going to apply a 'just in time' philosophy and defer renewals or apply pro-active renewals. These decisions are informed by factors such as criticality, performance, and risk appetite and manifest as differing treatments at a component level.

Management of ageing infrastructure is closely aligned with the discussion of system resilience above. The key aspect is the recognition of failure mechanisms for our assets, and initiation of a suitable response to minimise cost and disruption to the community. Underground pipe networks represent the greatest risk because of their extent and inaccessibility.

The three key aspects for effectively managing ageing infrastructure are:

- to ensure the organisation has sufficient knowledge of asset status
- that funding is available
- that remedial work (maintenance and renewals) is actioned in a timely manner

Council's approach has been to collect data to understand condition and performance, as well as identify critical assets so we are focussing effort where it is needed most.

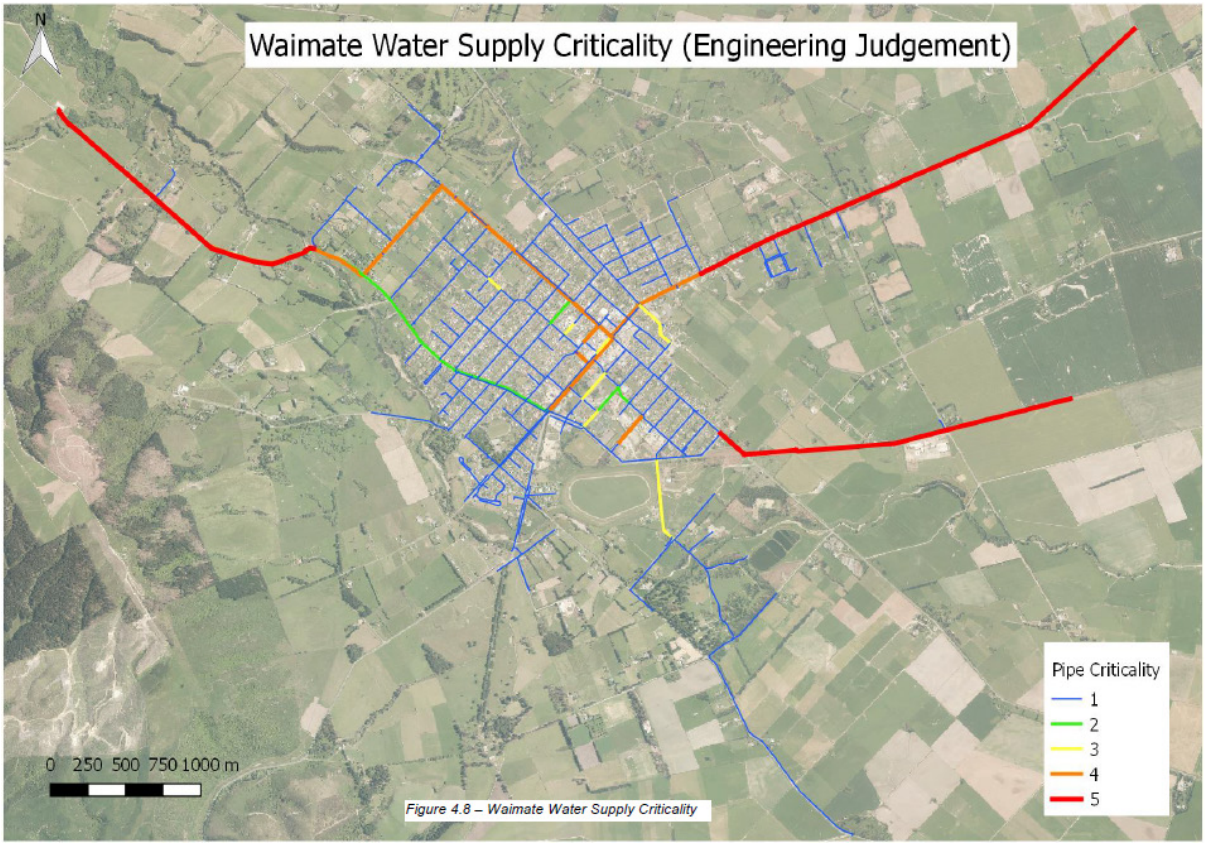


Figure 4.8 – Waimate Water Supply Criticality

The aging of Waimate's urban water and sewerage reticulation continue to be the greatest concern.

The water reticulation pipes are cast iron (dating back to 1908) or asbestos cement (1950s and 1970s). The sewerage pipes are earthenware (1915 and 1950s). The earthenware pipes are particularly susceptible to inflow and infiltration.

A renewal programme has been developed for these assets as discussed in sections 7 and 8 as we move into a phase where the expected life of these assets is reached.

The roading network is also aging, but changes in demand and operating conditions are more pertinent than the age of the asset. Changes in the mass and weight of vehicles has put the network under stress and the life of some assets is being rapidly decreased due to the extra wear and tear.

A more comprehensive data capture programme is now in place to improve knowledge about the roading assets, and how they are expected to perform in the future.

5.7 Economic Activity

Economic activity and changes in economic activity impact on the requirements for infrastructure, and the community ability to fund infrastructure.

COVID19 has impacted activity in Waimate District less than elsewhere. A high proportion of the community are engaged in primary production and other essential services. The ongoing economic impact is expected to be limited, with gains (such as interest in real estate) balancing out constraints (e.g. supply chain issues).

This is highlighted in "COVID-19's effect on industry and regional economic outcomes for NZ Transport Agency (Infometrics, May 2020)"

By 2025, this movement of workers towards primary industries or manufacturing shows through in several provincial areas where employment is projected to be above its pre-COVID trend. Areas such as Kawerau, Rangitīkei, Waimate, and Whanganui regularly appear in the grouping of the best performers in 2025 and 2031.

This is reinforced in "Briefing for Incoming Minister for Economic and Regional Development (MBIE, November 2020)

Canterbury has a strong platform for long-term economic prosperity. The region's strong agricultural base and the diversity of the Christchurch economy creates overall resilience in a post-COVID context.

5.8 Affordability

In view of the infrastructure investment (and associated funding) Council is facing, providing and managing continued affordable service delivery is a significant and complex challenge. Whilst Council puts considerable effort into managing the affordability of services, the districts small and aging population base means this will remain an ongoing challenge.

5.9 Tourism

Tourism has not been a major driver of demand in the district. Initiatives such as the Alps to Ocean Cycleway has seen a small growth in opportunities and tourism numbers before the Covid pandemic. The long-term impact of the Covid pandemic on tourism is not yet known. Council will remain engaged in regional and national tourism planning and monitor the long-term impacts on the district economy.

A Local Waimate based businessman has embarked on a range of commercial building renovation and development projects in the Waimate central business area. These projects have the potential to increase commercial vibrancy in central Waimate, and in time increase local, national and international tourism flows into the town.

5.10 Prudent Management

The purpose of road assets is to provide a sustainable, safe, convenient, comfortable and cost effective road network for the movement of people, goods and vehicles throughout the Waimate District.

Waimate District must carefully manage its investment in infrastructure to ensure it gets value for every dollar and provide infrastructure in a lawful, functional and affordable manner.

The task of building, operating and maintaining - as well as the management of - core Infrastructure Assets in an affordable manner may become increasingly difficult in view of a number of influences (i.e. what is over the horizon) is discussed in Table 5.1.

Table 5.1: Influences on Infrastructure Assets

Influences	Comment
Continually changing legislative and operating environment (Central & Regional Government)	**Roads and Footpaths:** The Government Policy Statement (GPS) changes with the focus of the Government and means there are changes in priority and funding to be addressed These are outlined in the Governments GPS2021 and Road to Zero documents. **Water**: Regulatory trend towards more stringent Drinking Water Standards and associated compliance monitoring and reporting. Taumata Arowai (water regulator commences operation in 2021). Water industry reform proposed 2021-2024. Regulatory trend towards more comprehensive monitoring and reporting of water takes. Progressive upgrades of the rural water supplies have occurred meaning there is compliance with the Health (Drinking Water) Amendment Act 2007 and / or the New Zealand Drinking Water Standards 2005 (revised 2008). This does mean increased operating costs and bore security issues. **Sewerage**: Regulatory trend towards more comprehensive monitoring and reporting of the receiving environment, and treatment process improvements to ensure acceptable effluent quality. **Stormwater**: Compliance with Land and Water Regional Plan is required. This may see increased levels of compliance for discharges (treatment), especially as it relates to industrial discharges. Impacts of climate change legislation. **Service Integration**: Central Government may require additional integration (sharing) of services with neighbouring Councils to effect greater efficiencies.
Change in demand	**Roads and Footpaths:** Changing demand on the roading network is causing more rapid deterioration. This is multiplied where the road structure is constructed in areas where there are poor ground conditions and/or where the ability to drain water away from Roading infrastructure is limited. ***– Significant Issue*** Heavy vehicle laden weight limits have risen from 44 tonnes to 46 tonnes, and to 50 tonnes maximum (for 50Max vehicles). High Productivity Motor Vehicles (HPMV) permit further increasing weights on trucks, subject to specific axle loadings. To improve efficiency of the freight transport fleet it is likely this trend with increasing truck weights may continue. This creates issues of restricted access to some areas of the district due to bridge stock that is not capable of carrying these loads, and further damage to weak pavements ***– Significant Issue*** The irrigation to land that was previously not irrigated can significantly change water tables and therefore the ground conditions the road is founded on (in part offset by changing irrigation methodology from border dyke to pivot irrigation). The latter conversions are still not complete.

Influences	Comment
Aging infrastructure	**Water:** The reticulation networks for parts of the water supplies are at or approaching the end of their expected lives. A large amount of urban pipework was installed from the early 1900s, with rural pipework installed in the 1970s. As a result significant urban water supply renewals are being programmed from 2015-16 to 2024-25, with rural water supply renewals taking precedence from 2025-26 onwards. As renewal work will need to be spread out over a number of years this brings increased maintenance liability and risk of premature failures, although the latter risk can be mitigated through careful planning and consideration of asset condition. **– *Significant Issue*** **Sewerage:** The Waimate reticulation network dates from the early 1920s and 1930s, with an expansion in 1960-1980. Due to aged pipework Inflow and Infiltration in both private and public assets results in significant infiltration and inflow into the sewerage network (related to old earthenware mains installed in 1920-1040s). Reduction in Inflow and Infiltration will free up additional capacity in the sewerage network. Continued renewal programme of the aging pipe network is required. ***Significant Issue*** **Roads and Footpaths:** A significant amount of the sealed road infrastructure was constructed between 60 and 45 years ago (with rapid expansion in the network between 1963 and 1973). Some of this sealed infrastructure is nearing the end of its useful life and historic under-investment has resulted in a backlog in resealing and rehabilitation work. Council is expecting a 'bow-wave' of sealed road and pavement renewal from 2035 onwards. In addition, a number of bridges will require replacement to maintain accessibility, with some bridges approaching end of useful life. **– *Significant Issue***
Consents	**Sewerage:** The discharge consents for the Waimate sewerage treatment plant will required renewal in 2036. Considerations of additional or alternative treated effluence disposal options may be required due to increased environmental requirements. **Stormwater:** Effective implementation of the Urban Stormwater Management Plan (SMP) is imperative as Council will hold the global resource consent. Council will be liable for any non-compliances with the resource consents. Council will need to ensure each and every individual/private developer takes responsibility for stormwater management.

Influences	Comment
Environmental effects	**Water:** The extent of the taking of ground water and surface water may be required to reduce thereby necessitating greater demand management and or levels of service decline. **Sewerage:** Inflow into the sewerage network via the individual properties and Councils sewer mains will continue to present design constraints, require increased pipe sizing and treatment and disposal issues unless this is resolved on a community wide basis i.e. I&I reduction in the private and public assets. **– *Significant Issue*** In some small communities the reduced groundwater quality due to on-going use of conventional septic tanks may necessitate the installation of centralised community sewerage systems with ensuing treatment and disposal system. **Stormwater:** Increased number of intense rainfall events will challenge our current stormwater asset network in terms of capability to meet 20 year return periods. An increased number of intense rainfall events will challenge our aging sewer pipelines through infiltration and resultant surcharge risks, as well as placing a higher burden on our current WWTP capabilities and capacities. **Roads and Footpaths:** Reduced availability of good quality road metals for sustainable road maintenance practices. Traffic on unsealed roads that produces dust which can have adverse effects on the health of people, stock and adjacent crops.
Climate change	Water: The design of the Three Waters infrastructure is required to provide service to three or more generations, but in the short term there is a need to be efficient in the provision of infrastructure. Climate change will have a detrimental impact on water supply, demand and resilience. Stormwater: The predicted increases in extreme weather events involving significant rainfall may lead to increased levels of surface water leading to subsequent flooding, ponding problems and blockages to drains for stormwater run-off. Roads and Footpaths: The potential effects of climate change on the districts roading network are understood in terms of the predicted changes in weather patterns. The predicted increase in extreme rainfall events may cause increased pavement deterioration over time, with scouring at the edges of roads and potentially significant damage through scouring to the abutments of bridges in the district. Weather events which consist of rainfall over extended periods can cause landslips, which can affect the roading network in particular areas within the district.
Infrastructure resilience	Customers have an increasing expectation of continuing functionality and service delivery following significant natural events (snow, wind, extreme rainfall etc.). Council will need to continue to enhance resilience through infrastructural and procedural improvements. **– *Significant Issue***

Influences	Comment
Population and economic growth	In broad terms, the population of Waimate District is forecast to remain relatively steady. Many of the schemes have capacity to provide for some growth, and there are opportunities for more effective management to cater for growth if it is greater than expected. As the population and local economy grows, this may tend to raise expectations around higher levels of service, which will need to be catered for. For example, more intensive use of the transportation network places a greater maintenance burden on Council. **Water** - Hydraulic rearrangement and pressure management for the urban water supply both assists in extending the useful life of the asset and to provide additional capacity to cater for growth (whilst also reducing burst frequency, water loss and extending remaining life of already aged assets). The rural water supplies will be subject to changing demand profiles as a result of reliable irrigation in the future. It is envisaged that existing use will shift from predominantly stock water (potentially sourced from irrigation water) to domestic use as development occurs in the rural area. **Sewerage** - Assessments indicate that the urban waste water network and treatment plant have adequate capacity to cater for the increased population (additional 2,900 persons available) provided stormwater inflow and groundwater infiltration can be reduced. **Stormwater:** Council will need to undertake upgrades to the stormwater network to reduce known surface flooding resulting from increased stormwater run-off from developments. **Roads and Footpaths:** Council will need to continue footpath development and ongoing network improvements in a timely manner to cater for increasing demand on these assets.
Demographic changes	Significant increase in the over 65 age group may result in affordability issues (increased number of fixed income ratepayers). This trend may be offset by the districts stable working age population. Levels of service may need to be reviewed and amended to either a more affordable level, or to suit the dominant demographic in the future. **Roads and Footpaths:** An aging population will potentially require higher levels of service for the provision and quality of footpaths for vulnerable pedestrians and the mobility impaired.
Land use change	Historically, land use change (dryland farming to dairy) has had an impact on the water activity requirements within the district. Changing freshwater management standards may impact current land use practices and trends Changes in farming practices in the next 30 years will continue to have a significant influence on current infrastructure needs particularly with the increase in high productivity (i.e. very large tractors) movements throughout the district. If irrigation is improved throughout the district, more land is being converted for dairy farming. This may be offset or changed by evolving freshwater management standards. Dairy conversions have a large impact on the roading network through the generation of a wide range of additional traffic and increases use of agricultural vehicles on the roading network. Cultural diversity as a result of land use change may influence demand on infrastructure

Influences	Comment
New Technologies	New technologies will assist in the services becoming more efficient and effective. Opportunities will be reviewed with respect to whole-of-life costs. Historically the change in technologies has had a significant effect in the operation and management of infrastructure assets and it is considered that this will continue possibly at a greater pace. For example, the implementation of Asset Management Information Systems (AMIS) across the infrastructure activities and the continued development of the Council SCADA (system control and data acquisition) system to improve operational efficiency for the water supply and sewage treatment plants. During 2021/22 Council will install universal metering in order to better understand and manage water loss within the urban area. This is coupled with improved asset information, and will allow greater efficiency in the operation and management of Council's infrastructure. This will include utilising predictive models for programming and prioritisation of asset renewals. Changes in the scale and types of agricultural activities, including intensification / reduction of dairy and dairy support, in the District will create additional pressures on some of the Council's existing infrastructure networks over time.
Resourcing	An aging workforce and difficulties with the recruitment and retaining of experienced and qualified staff to a rural district may present issues with the future operation and management of the services and infrastructure projects. The continued development of appropriate staff and their skill sets to meet the challenges of infrastructural demands and meeting regulatory changes is essential to ensure prudent and rational outcomes.

6.0 THIRTY YEAR STRATEGY

6.1 The Organisations' Priorities

At high level, Council's priorities in respect to Water, Sewerage and Stormwater and Roads and Footpaths are to:

- Maintain the District's roads to a safe standard and fit-for-purpose for the long term
- Using efficient and effective asset management practices to maximise roads and footpaths asset life to provide a resilient network.
- Demonstrate to customers that Council is managing the assets responsibly.
- Ensure that the level of service required by customers is provided at the lowest long term cost to the community.
- Customers will be regularly consulted over the price/quality trade-offs resulting from alternative levels of service
- Provide a continuous supply of potable water to meet agreed demands.
- Maintain sewage disposal and treatment facilities to protect public health through ensuring good sanitary standards and freshwater management.
- Manage the impacts of land use change and growth.

The rationale for each of the services covered in this Infrastructure Strategy are as follows. These provide a useful 'outcome test' to ensure the services are community/customer focussed:

Table 6.1 – Community Outcomes and Activity Rationale

Community Outcomes		Transportation	Water, Sewerage and Stormwater
Thriving Community	A district that provides infrastructure for economic activity A District that encourages development A District that actively promote itself and its businesses	Efficient and safe roading networks are part of the essential infrastructure for economic growth and development	Fault response Timely provision of utility services essential to supporting growth
Safe and Healthy People	A place where people are safe in their homes, work and public spaces Our services, infrastructure and environment enhance quality of life	Safe and well maintained roads, footpaths and road verges promote safety of all road users, including pedestrians	Safe Drinking Water Protect public health by ensuring a safe and viable sewerage disposal system. Flooding is adequately managed in urban areas. We have reliable, efficient and well-planned water, sewerage and stormwater infrastructure that meets the needs of residents. Customer Satisfaction

Community Outcomes		Transportation	Water, Sewerage and Stormwater
Sustainable District and Environment	A district that is enhanced through sustainable and diverse development We value the natural environment, biodiversity and landscapes Our heritage is valued and protected	A well-managed roading network minimises the adverse effects on the environment	Ensuring the quality and quantity of discharges to the environment. Maintenance of the reticulation
Active, Diverse and Supportive Community	District assets provide recreation and leisure choice We celebrate and support the good things in our community	Roads and footpaths are an important element in both the residential and rural environment for physical exercise, leisure activities and social contact	

6.2 Asset and Service Management Strategy

In providing services to residents and visitors through the use of infrastructural assets, Council's management strategy is…..

> ***To maintain performance measures to ensure that the current strategies do not consume the asset leading to an unexpected increase in maintenance/renewal expenditure in the future.***

Council has established an asset management policy. This defines the appropriate level of asset management planning in line with the discussion contained in the International Infrastructure Management Manual (2015). The policy definitions for the three waters and roading activities is "Core".

Road and Water supply may include more complex asset management practices such as demand and deterioration modelling above this level, but it will be on a fit for purpose basis, rather than a requirement across all asset types.

Responsibility for the asset management of the Water, Sewerage and Stormwater, and Roads and Footpaths services is allocated to the Asset Group Manager. This responsibility includes:

- Ensuring services are constructed, maintained and in compliance with consents.
- Budgeting and long-term forecasting.
- Monitoring Levels of Service for services provided by assets.
- Identifying and managing asset and service related risk.
- Reporting of Level of Service, key performance indicators and risks at corporate level.
- The achievement of Asset Management practices which meet corporate Asset Management development standards and reporting of these in the AMPs.

In providing services to residents and visitors through the use of core Infrastructure, Council's management strategy is to:

- Review planned resource allocations
- Determine the effects these will have on agreed Levels of Service
- Assess how these changes in Levels of Service will be reflected in the end-of–period asset condition and performance
- Adjust the work plan as necessary to achieve the best possible life cycle asset condition and performance within the available budget. This may mean leaving some assets to decline in condition to the stage that they require more expensive remedial action later
- Assess the effects of the revised programs on achievement of the Council's performance targets
- Report the anticipated effects on the targets to senior management and elected members
- Manage the Water, Sewerage, Stormwater and Roads and Footpaths activities at a level in accordance with Council's assessment of appropriate asset management practice and asset management policy.

6.3 Sustainable Service Delivery

Council's assets and services contribute to the social, economic, environmental, and cultural well-being of community in accordance with the agreed community outcomes.

6.3.1 Response to Affordability

The affordability of services in a small, rural, agricultural economy based community is always a challenge. Council continues to meet this challenge by conventional and innovative programmes:

a) Focus on the critical assets and activities.
b) Use of a widely consulted rating system that uses targeted rates where appropriate
c) Grow the rating base - attracting new industries and developments that benefit the district
d) Partnering with community and sponsors to fund major community assets – For example the Whitehorse Development.
e) Partnering with developers to achieve mutual goals to the communities benefit
f) Partnering with government for funding – NZTA and Tranch One three waters funding
g) Engaging and responding to government changes in regulation and policy to optimise associated cost issues for district ratepayers
h) Keep rates affordable and sustainable for the community

6.3.2 Response to Four Wellbeings

The Local Government (Community Well-being) Act moved away from the previous efficient, effective and appropriate service delivery focus by restoring the four community well-beings of:

- Cultural
- Economic
- Environmental
- Social

This acknowledges Councils' broader role in looking after our communities, than simply providing core services.

6.3.3 Response to the Levels of Service

This Infrastructure Strategy provides a guide to Councils long term service provision over a thirty year period based on the current service levels provided by Council, and known and agreed changes in Councils service levels.

This Infrastructure Strategy does not provide commentary on annual service levels or current service level performance measurement of the services that Council currently provides. Councils Long Term Plan provides detail on annual service levels, performance measures and achievements. This Infrastructure Strategy forms part of Councils Long Term Plan document suite that includes the Long Term Plan, Financial Strategy, Infrastructure Strategy and Consultation Document . This Infrastructure Strategy should be read in conjunction with the other documents in the Long Term Plan document suite for full disclosure of required information.

6.3.4 Response to the Legislative Environment

Council continues to remain updated and engaged with changes in the legislative environment. The current and proposed changes are far reaching and will impact most areas of Councils activities.

Additional staff resources, equipment, external consulting support and compliance costs have been budgeted to meet known and anticipated costs associated with the Taumata Arowai (water regulator) requirements and drinking water standard compliance changes.

Costs associated with the governments water industry reform have not been budgeted in this Infrastructure Strategy as these proposals are still being developed by the government, and the shape and scope of the reforms has yet to be finalised.

Council will remain engaged with the proposed water industry reforms to ensure district community outcomes are achieved in a cost effectively and sustainably.

6.4 Cost Effective Delivery of Services

In terms of section 10 (Purpose of local government) there is a clear requirement to meet the current and future needs of communities for good-quality local infrastructure, local public services, in a way that is most cost-effective for households and businesses.

(2) In this Act, good-quality, in relation to local infrastructure, local public services, and performance of regulatory functions, means infrastructure, services, and performance that are—

(a) efficient; and

(b) effective; and

(c) appropriate to present and anticipated future circumstances

In order to demonstrate that the delivery of services are efficient, effective and appropriate; Waimate District Council has reviewed its procurement processes, undertaken service delivery reviews, and has systems and policies in place that include:

Customer Service: Council has determined customer expectations through formal and informal consultation with the community over many years. These surveys are no longer available and Council is currently reviewing the methodology for completing customer surveys. Monitoring of key performance indicators set against achieving Levels of Service puts Council asset management practices into context in terms of effectiveness.

Procurement Policy: The Waimate District Council Procurement Strategy was revised in 2019. The objectives are:

- Supporting the achievement of Council's Community Outcomes and the Waimate District Council Long Term Plan programme, through efficient and realistic procurement processes to meet Waimate District's needs
- Integration of Council's organisational goals into the procurement process
- Delivery of the agreed levels of service to the community that represent value for money
- Encouraging appropriate and equitable levels of competition across suppliers
- Ensuring procurement is fair and transparent with effective accountability measures
- Ensuring procurement is efficient and appropriate to the scale of the activity

Asset Management Practices and Processes: Services are managed in accordance with Council's Asset Management Policy. Practices and processes are reviewed and assessed against guidance and best practice provided in the International Infrastructure Management Manual (IIMM), Edition 2015 and the more recent 2020 Edition.

Asset Management Policy: The objective of this policy is to ensure that service delivery is optimised against agreed community outcomes and Levels of Service, manage related risks, and optimise expenditure over the entire lifecycle of the service delivery. The policy also ensures that the management of the assets is a systematic process, and that service delivery is sustainable in the long term.

Service Delivery

Road maintenance and network operations are procured as part of the Aoraki (mid South Canterbury) Roading Collaboration with Mackenzie and Timaru Districts. The Roading Network Operations and Maintenance Contract was jointly developed and procurement processes established to benefit all parties. The collaboration agreement also allows for sharing of skills and resources. Council staff manage the roading network with some assistance from consultants.

Waimate, Timaru, and Mackenzie District Councils have extended the contract period to 30 June 2021.

Sealed road resurfacing renewals are also let under a collaborative arrangement between Waimate, Timaru, and Mackenzie District Council, with a term of two years.

The result of the collaboration between the Councils has provided a range of benefits. To continue to access these benefits Waimate is working towards having common contract documentation with Mackenzie and Timaru District Councils.

Streetlighting maintenance contract arrangements are by negotiation with NETcon as the preferred contractor within the Waimate District.

Other works such as pavement rehabilitations and large renewal and improvement projects are let as competitively priced contracts on an annual basis.

The Water, Sewerage and Stormwater operations and maintenance services are provided using in-house resources. This has proven to be an appropriate fit for Council and also provided an excellent alignment between management and operations staff. Recently some of the operations staff have moved into management role, strengthening their professional opportunities and building corporate knowledge.

The teams are relatively small and are adaptable enough to undertake minor capital works alongside their planned and unplanned maintenance works.

The recent February 2021 DIA lead WICS review of Councils three waters operations, renewals and capital noted that Waimate District Council was efficient in operational service delivery.

Capital Programme Delivery

Council has an ambitious capital programme driven by a number of factors:

- Continuation of the active renewal programmes;
- Capital works required to meet the current Drinking Water Standards for New Zealand (DWSNZ)under the existing legislative framework;
- Future capital works associated with compliance through the proposed Water Services Act; and
- Capital works associated with the Department of Internal Affairs stimulus funding.

Particular pressure is exerted in year one of the 2021-31 Long Term Plan (Figures 8.1 – 8.4). In order to mitigate risks associated with programme delivery, Council has implemented a number of tactical responses:

i. A Project Manager and support staff (1.5 FTE) have been engaged to ensure that proposed stimulus funded projects (total $3.68M) are completed by 31 March 2022.
ii. The Project Manager is also assisting with timely delivery of proposed LTP projects through procurement assistance.
iii. All capital works have been programmed for 2020/21 and 2021/22 and local contractors have been made aware of the timing. Where possible the programme has been modified to ensure successful and cost effective procurement can be realised.
iv. Council is aware that, given the effects of Covid 19, that material supply was likely to be impacted. Resultantly, Council addressed this issue by sourcing materials early and maintaining stock levels that can be drawn down on when projects commence. Sourcing materials early has also mitigated, to some extent, elevated pricing as raw materials become more scarce.
v. Procurement is now completed through the Government Electronic Tenders System (GETS). This affords the ability to notify the wider contracting / consulting market of upcoming projects and will undoubtedly maximise submissions received once projects are tendered.
vi. Nearly $2.5M of projects budgeted for 2021/22 are likely to be tendered by 30 June 2021, or very early in the 2021/22 financial year. This maximises available construction time to achieve completion of the proposed capital programme.

The Waimate district is fortunate to have significant contracting resource located within the boundaries and at varying scale. In fact, one of the largest contractors in the South Island has its head office located within the Waimate town. Further afield, council is able to draw on further resource located to the North in Timaru and to the South in Oamaru.

As with any capital programme risks will always remain, even if mitigation has been employed. Known risks include:

- Dependent projects – Some proposed capital works are dependent on either technical investigations or other capital works. Delays in the latter could impact deliverability.
- Material Sourcing – Whilst proactive in sourcing materials, the risk associated with slow supply chains remain. There is also a risk associated with elevated pricing that could modify the scope of some projects.
- Compliance risks – A number of water supply compliance projects have been budgeted (2020/21 and 2021/22) to meet compliance requirements as defined in the current DWSNZ. Council is aware that enactment of the Water Services Act is highly likely to offer alternative means of treatment for some of these water schemes and anticipates, under this scenario, that the redefined capital works projects are likely to be more cost effective in the longer term. Timing associated with the “new standards” is restrictive in terms of construction. However, council is confident that these changes will occur and has selected to begin construction of the common requirements (pre and post Water Services Act) as Stage 1 to mitigate the potential loss of time.

- Delay in increased levels of service associated with the upgrade of individual water schemes for compliance with the DWSNZ. Whilst it is unlikely that the level of service will reduce, the current LoS will be extended until upgrades are commissioned.

6.5 Addressing Resilience

Resilience is the ability to cope with and recover from adverse events. It requires active planning to cope with a disaster, restore functionality, and rebuild the societal and economic fabric. Communities that actively plan for resilience are less prone to disaster, recover faster, and endure less hardship than those that do not.

Planning for every disaster scenario is impossible, so the next step is to plan to contain damage. Planning involves understanding the chaos, the pressures and the trauma, then building redundancy, preparing for insurance, training and improving. Bouncing back to recover the social and economic soul of the community is the next component in planning for resilience.

Finally, a culture of improvement and learning develops resilience. This is achieved through commitment, understanding and training.

In order to improve resilience Council's approach will continue to:

- Actively participate in Civil Defence Emergency Management planning and activities, at both regional and local levels.
- Investigate and instigate options for alternative service provision and system redundancy.
- Promote design and construction standards (where cost effective) that ensure infrastructure is able to withstand natural hazards and long term changes in circumstances such as those resulting from climate change.
- Obtain insurance where this is deemed to be the most cost effective approach.
- Invest in business continuity succession planning and training.
- Identify critical assets within Water, Sewerage and Stormwater activities and are development management regimes based around criticality
- Work in closer collaboration with neighbouring authorities
- Look at more joint procurement opportunities and establish staff resource sharing arrangements

6.6 Evidence Base

The asset data held for water supply and sewerage had been a focus for improvement over the last six years. This was reflected in the positive peer reviews undertaken of both the 2017 and 2020 valuations.

Road and footpaths data continues to be sound, based on twenty years of RAMM use. An increase in data analysis as part of the ONRC framework and capture of pavement performance data has improved knowledge of the asset further.

The 2020 asset valuation identified the accuracy of most roading asset data as "B" or "Reliable" (Data based on sound records, procedures, investigations and analysis, documented properly but has minor shortcomings, for example some data is old). Bridge data is of higher accuracy, "A" or "Highly reliable" (Data based on sound records, procedure, investigations and analysis, documented properly and recognised as the best method of assessment. Dataset is complete).

The 2020 valuation has indicated (for three waters):

Confidence Level	Description	Accuracy	Condition	Quantity	Unit Cost	Base Life
A	Highly Reliable and Accurate	100%				
B	Reliable with Minor Inaccuracies	+/- 5%		B	B	B
C	50% estimated	+/- 20%	C			
D	Significant data estimated	+/- 30%				
E	All data estimated	+/- 40%				

From a valuation perspective the data reliability is considered (for all assets covered by the IS) to be "B" or +/- 5%. Council acknowledges that the reduced reliability associated with less accurate condition ratings (+/- 20%) could impact future financial forecasting. However, this is currently mitigated by empirical assessment of assets proposed for renewal. For example, roads identified for resealing are reassessed, alongside mains identified for renewal are investigated in regards to historical leaks, bursts and criticality.

Council acknowledges there are limitations with its data that affect decision-making. A commitment to improving data collection and analysis is indicated below. Additional part-time and full time roles have been added to the Council team to address data limitations and accuracy.

Table 6.2: Data Improvements

Activity	Data to be collected	Data to be analysed	Value this data provides
Roading	Traffic counts of Heavy Vehicles	Classified vehicle counts	Heavy traffic counts will help identify key routes and align these with pavement management. Allows council to assess and report on utilisation of the asset and review whether the asset actually provides sufficient capacity for current and future use.
	Falling Weight Deflectometer/Multi-Speed Deflectometer Testing	Pavement deformation (strength) / SNP	Assists with identifying where there may be pavement risk should there be a change in traffic demand or weakening ground conditions. Testing indicates areas where stronger pavements may be needed (informing renewals programme) or where attention should be given towards drainage provision.
Water supply		Water demands	Universal metering provides a comprehensive data set which is currently not leveraged to understand peak demands
Water supply and sewerage	Pipe condition		Validate renewal programmes Additional staff recruited to assist with pipe asset and condition data improvements

The approach to data collection, management and reliability is discussed in the respective asset management plans and budgets included where appropriate.

6.7 Significant Decisions

Taking a long-term view to the management of infrastructural Assets, Waimate District Council needs to make key decisions in a timely manner. In addressing Community desires and priorities the following key decisions have been identified.

Table 6.3: Significant Infrastructure Decisions

Key Decision	Indicative Timeframe
Roading and Footpaths Review investment in Roading to provide a satisfactory level of service and provide for large and heavier vehicles. Historically, the level of investment required to keep roads to a 'fit for purpose' level in Waimate District has been among the lowest in the country. However, as land use changes the demands on the network increase so does the amount of work to keep them to the required standard. A comprehensive planning and maintenance approach to ensure this delivery of this level of service will require more investment. "For the next three years an increase of $511k over the last 3 year period is approved. This includes significant investment in resurfacing, pavement rehabilitation, drainage renewals and unsealed road metalling. Reduction in the co-investment applied for from Waka Kotahi is, in part, offset by reduced contract rates. Council is expecting increased investment levels in the future. E.g., a further increase of $2.8M between 2025 and 2027 to fund increased pavement rehabilitation.	Review investment level every three years in conjunction with the National Land Transport Programme and any current Government Policy Statement (GPS). Changes to the GPS will inevitably affect where and how much funding will be available for particular Work Categories.
Roading and Footpaths WDC's Bridge Replacement/Upgrade Strategy lists the bridges which have been identified for component replacement, or upgrades, to re-establish appropriate levels of service for vehicles (including heavy vehicles) crossing these structures. Overall risks associated with asset failure have been assessed to be moderate, and are acknowledged to be the determining factor in network resilience. There are some critical routes, bridges and demand issues pending – the Bridge Replacement/Upgrade Strategy has used the ONRC to determine the priority for investment.	Review investment level every three years in conjunction with the National Land Transport Programme The timing for replacement and upgrade works is indicated in the strategy for some bridges, but is generally left to the Council to decide based on the information given and forecast budgets.

Key Decision	Indicative Timeframe
Water Supplies The renewal programme is considerable and will extend well out into the future. Council will need to commit to this to maintain satisfactory levels of service and to provide increased levels of service required for compliance with the Drinking Water Standards for New Zealand 2005 (revised 2008) (DWSNZ) and upcoming Taumata Arowai requirements. The proposed renewal programme is well underway and for the next ten years totals $7.3M and Council has budgeted an additional $4.1M to increase levels of service ($3.3M to meet the DWSNZ and associated improvements) $1.9M is set aside to facilitate growth (AD) projects	Renewal programmes are continually updated as asset knowledge and asset management practices are improved. Programmes are revised to align with Council planning processes (Long Term and Annual Plans) with detailed reviews occurring prior to the production of each respective Long Term Plan.
Sewerage Inflow survey across all properties in Waimate town to identify illegal connections. Property owners will be required to rectify faults. Total budgeted cost for the inflow survey is $145,000 ($89K 2021, $56K 2022) and includes both operational and capital investment.	2018/21 – Policies and Bylaws to be updated prior to embarking on this work.
Sewerage The renewal programme is considerable and will extend well out into the future. Council will need to commit to this to maintain satisfactory levels of service. The proposed renewal programme for the next ten years totals $5.8M with an additional $0.1M million budgeted to increase levels of service. $0.3M is set aside to reticulate the Point Bush Road area	Renewal programmes are continually updated as asset knowledge and asset management practices are improved. Programmes are revised to align with Council planning processes (Long Term and Annual Plans) with detailed reviews occurring prior to the production of each respective Long Term Plan.
Stormwater The forward works programme is adequate. If a greater level of service is required then a higher levels of investment will be required. Short term investment is currently targeting known locations where agreed levels of service cannot be achieved. Total capital investment over the next ten years is $0.5M	Stormwater investment programmes will refined once the global consent is issued

7.0 SIGNIFICANT INFRASTRUCTURE ISSUES

The Local Government Act 2002 Section 101B – Infrastructure Strategy states:

(2) The purpose of the infrastructure strategy is to—

"(a) identify significant infrastructure issues for the local authority over the period covered by the strategy; and

"(b) identify the principal options for managing those issues and the implications of those options.

In developing this 30 Year Strategy Council identified the anticipated significant infrastructure issues over the 30 years and considered each significant action and the benefits of the action. The significant infrastructure issues faced by Waimate District Council with the benefits and costs are tabled below.

As a result of Council's consideration of the combined emerging issues and key decisions required, significant infrastructure issues have been identified for the Core Infrastructure Assets as presented in Table 5-1. Projects that have been identified to respond to specific significant infrastructure issues faced by Council, and associated benefit(s) and costs, are presented in tables 7.3 to 7.6.

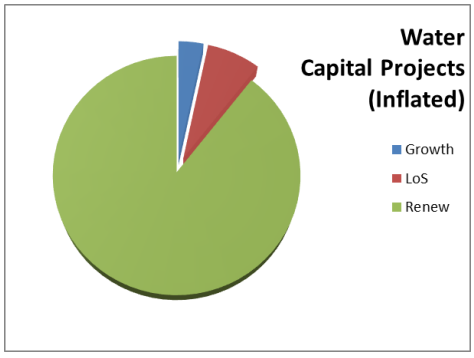
(Note where projects have been identified for level of service, these projects seek to either maintain the existing level of service, or to ensure that level of service targets are obtained in the future.)

In developing this 30 Year Strategy Council identified the anticipated significant infrastructure issues over the 30 years and considered each significant action and the benefits of the action. The significant infrastructure issues faced by Waimate District Council with the benefits and costs are tabled below.

7.1 Water

Strategic Goals for the Water Service are:

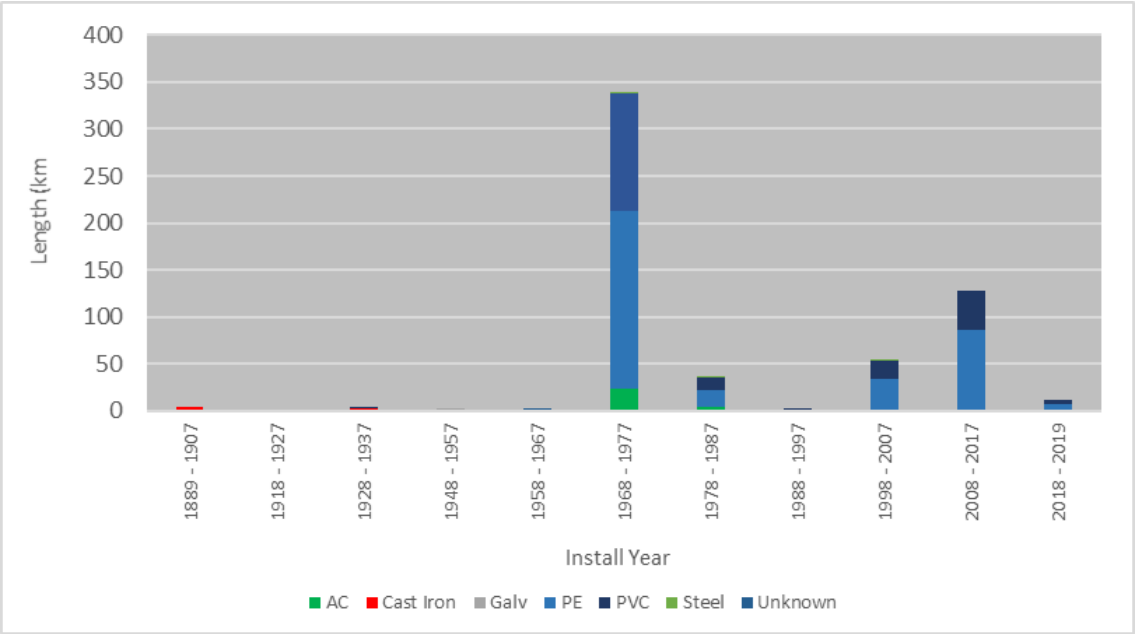
- To ensure that adequate water schemes are provided and maintained for the wellbeing of the public both now and in the reasonable foreseeable future
- To ensure that the long-term operation and maintenance of the water treatment facilities are environmentally sustainable
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Council owned water assets.



Issue - A significant percentage of aged and poor condition water mains (cast iron and asbestos cement within the urban reticulation) will need replacement in the next 20 years.		
Main Options	**Implication of Options**	
Option 1 -Embark on a renewal plan of all original cast iron pipes in Waimate Town	This is a costly option and is likely to have a significant impact on customers during replacement. This could be the most cost effective approach as there would be economies of scale.	
Option 2 - Replace pipes on an as needed approach.	This is likely to have severe impacts on the level of service provided. Outages would become common, and replacing pipes in an 'emergency' situation would be expensive and difficult to coordinate.	
Option 3 - Undertake replacement over a period of time	Apply a prioritised approach ensuring that the impact on customers is limited. Comprehensive planning is required to maintain a satisfactory level of service	
Time period	Ongoing – continually reviewed as information becomes available	
Cost	$ 4.2M (2021 – 10 Years)	$4.8M (inflated – 10 Years)
What is the benefit	LoS/Renewal	
Assumption	-	

The following figure illustrates the age profile of the water supply pipes.

Figure 7.1: Water Pipe Length by Installation Year and Material



Issue – A number of the districts water sources require upgrade to achieve compliance with the Health (Drinking Water) Amendment Act 2007 and to be compliant with the current Drinking Water Standards for New Zealand. This is further developed by the Governments response to the Havelock North Drinking Water Inquiry and the 2021 creation of the water quality regulator Taumata Arowai, with associated legislation	
Main Options	**Implication of Options**
Option 1 -Embark on an accelerated plant upgrade programme in the very short term.	This is a costly option and is likely to have a significant financial impact on both existing and future customers. Whilst cost effective (economies of scale etc.) it will require significant resourcing.
Option 2 – Consider recommendations from the Stage 2 Havelock North Inquiry, Water Services Bill, Revised DWSNZ and implement lowest risk capital programme in LTP year 1 - 3	The continued upgrade of some schemes (lower cost and predictable requirements) which have less financial impact early in the planning period mitigates some risk associated with funding sources that may become available in the future. Affordability can therefore be addressed. Whilst all upgrades can be programmed, further design and investigation into future upgrades can be carried out in terms of quality, quantity and funding.
Time period	2022
Cost	$ 3.3 Million (2022-23)
What is the benefit	LoS/Renewal
Assumption	Funding sources may become available and allow review of proposed treatment plants in terms of both rates levied and also to address both quality and quantity of potable water in tandem.

Work was completed during the period 2018-2021. Currently there are different levels and forms of water treatment across the district schemes as illustrated below.

Table 7.1: Water Quality Issues

Supply	Service Connections	Population served (WINZ)	Source	Existing Treatment						Proposed treatment	
				No treatment/ disinfection	Coagulation	Flocculation	Filtration	Ultra Violet Irradiation	Chlorination	Method	Completed/ Completion Due
Waimate Urban	1,956	3,000	Ground water[1, 2]		-	-	1	2	1 & 2	Filtration & UV upgrade (filtration not required)	2019/20 Manchester Completed 2019/20 Timaru in process
Cannington Motukaika	51	120	Surface water		-	-	sc			Filtration, UV & Chlorination upgrade. Potential for Acceptable Solutions	2018/20 On agreed hold for legislation changes
Hook Waituna	533	1,350	Surface water		-	-	sc	*	*	Filtration upgrade	2018/21
Lower Waihao	246	600	Ground water		-	-				Filtration, UV & Chlorination upgrade (TBC)	2020/21
Otaio Makikihi	220	430	Surface water[3] & Ground water[4]		-	-		4	4		
Waihaorunga	44	141	Surface water		-	-				Filtration & UV. Potential for Acceptable Solutions	2020/21 On agreed hold for legislation changes
Waikakahi	172	360	Surface water		-	-				UV & Chlorination upgrade. Potential for Acceptable Solutions	2020/21 On agreed hold for legislation changes

1 = Timaru road only / 2 = Manchester Bore / 3 = Gorge Rd (not in use) / 4 = Tavistock Bore / sc=screen / TBC = to be confirmed / * = Treatment issues

Issue – The rural townships are experiencing water loss, increased demand and associated pipework capacity deficiencies		
Main Options	**Implication of Options**	
Option 1 - Repair leaks	Repairing leaks as they occur will be required where assets are not being replaced and capacity is required. However, this will become more difficult as the state of the pipes deteriorates.	
Option 2 – Do not repair leaks	This is likely to have severe impacts on the level of service provided. Outages would become common. Additional, new connections would be impossible	
Option 3 – Renew existing pipes, optimise renewals to facilitate growth, allow for online compliance monitoring, relocate difficult to access pipework.	Given the age, condition and location of the pipes, a renewal programme is required to address difficult to detect leakage, provide future access to water services for growth and enhanced management of the schemes.	
Time period	2022 - 2029	
Cost	$ 431k	$ 494k (Inflated)
What is the benefit	LoS/Renewal	
Assumption	Water loss in the rural schemes is well managed	

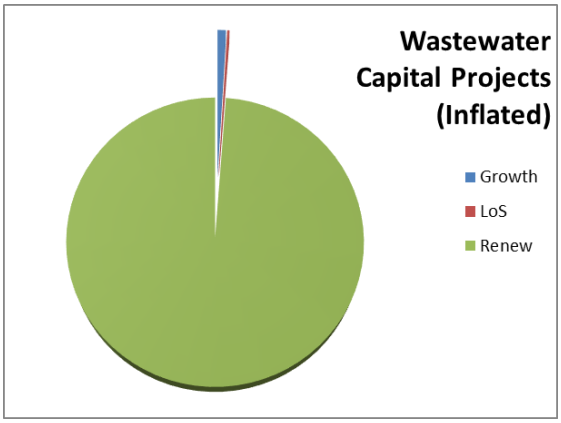
Issue - The government water reform programme is ongoing in 2021. The proposed industry restructuring has large public entities managing water services delivery		
Main Options	**Implication of Options**	
Option 1 -Engage with government structural reform process	Council continues to engage with the government reform process, with the water assets and service provision transferring to a new large public entity within the next 4 years	
Option 2 – Opt out of government structural reform process	Council opts out of the government reform process and continues to own water assets and provide water services. Additional costs associated with regulatory compliance and higher national water quality standards	
Time period	2021-2035	
Cost	To be determined	To be determined
What is the benefit	Yet to be determined	

Issue - The government water reform programme is ongoing in 2021. The proposed industry restructuring has large public entities managing water services delivery	
Main Options	**Implication of Options**
Assumption	Government will allow Council to consider different options

7.2 Sewerage

Strategic Goals for the Sewerage Activity are:

- To ensure that adequate Sewerage Services are provided and maintained for the wellbeing of the public both now and in the reasonable foreseeable future.
- To ensure that the long-term operation and maintenance of the sewage treatment plant is environmentally sustainable.
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Waimate District Council owned assets.

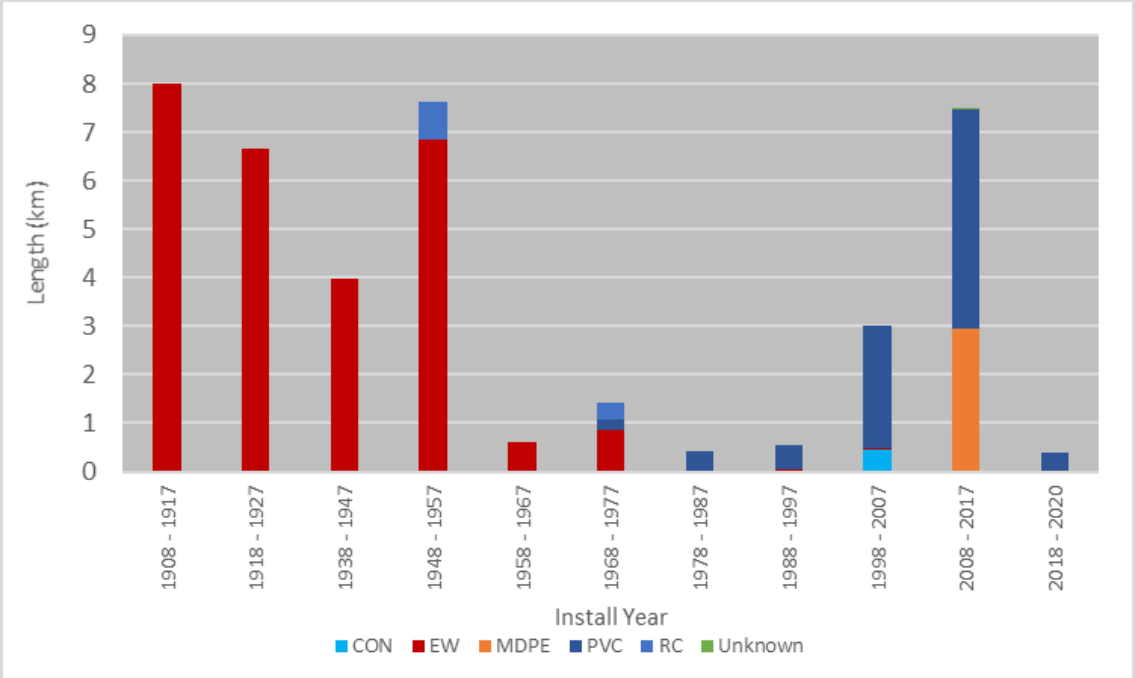


Significant infrastructure issues are tabled below. The highlighted option is the preferred approach for addressing the identified issue.

Issue - A significant percentage of aged and poor condition sewerage mains will need replacement in the next 20 years		
Main Options	**Implication of Options**	
Option 1 -Embark on a renewal plan of all original earthenware in Waimate Town	This is a costly option and is likely to have a significant impact on customers during replacement. This could be the cost effective approach as there would be economies of scale.	
Option 2 - Replace pipes on an as needed approach.	This is likely to have severe impacts on the level of service provided. Blockages would become common and replacing pipes in an 'emergency' situation would be expensive and difficult to coordinate.	
Option 3 - Undertake replacement over a period of time	Apply a prioritised approach ensuring that the impact on customers is limited.	
Time period	Ongoing – continually reviewed as information becomes available	
Cost	$ 4.2M (2021 – 10 Years)	$ 4.9M (inflated – 10 Years)
What is the benefit	LoS/Renewal	
Assumption	-	

The following figure illustrates the age profile of the sewerage pipes.

Figure 7.2: Sewerage Pipe Length by Installation Year and Material



Issue – There is a high level of inflow into the sewerage network	
Main Options	**Implication of Options**
Option 1 Replace all pipes	Not all pipes in the network are subject to infiltration. Even if all infiltration was eliminated, inflow would continue to be a source of peak wet weather flows.
Option 2 Identify the worst pipes and replace them	The age and condition of reticulation pipes suggest some replacement is required. The impact of the worst pipes on levels of service, infiltration and potential leakage into the environment needs to be addressed.
Option 3 Implement property surveys to identify inflows use bylaw to seek rectification	This is required to reduce illegal discharges and bring wet weather flows under control. As part of its sewerage resource consent Council is required to improve its management of the scheme and reduce the amount of treated waste that required disposal. The cost of rectification would lie with the party with illegal drainage
Option 4 – Combination of replacement (option 2) and addressing inflow (option 3)	The issue to be addressed is a combination of inflow and pipe condition. To be a responsible operator all factors need to be addressed
Time period	2021-24, renewals ongoing

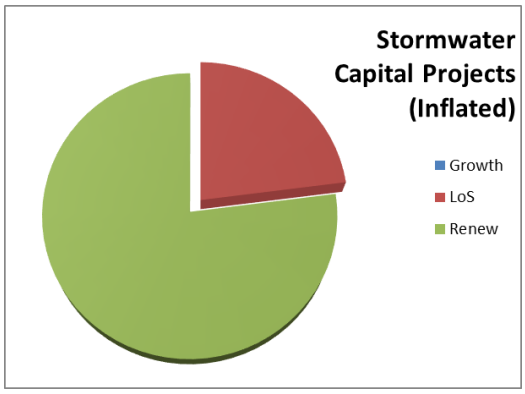
Issue – There is a high level of inflow into the sewerage network		
Main Options	**Implication of Options**	
Cost	$ 145,000 Inflow investigation $89k 2021, $56k 2022	
What is the benefit	LoS/Renewal	
Assumption	-	

Issue - The government water reform programme is ongoing in 2021. The proposed industry restructuring has large public entities managing water services delivery		
Main Options	**Implication of Options**	
Option 1 -Engage with government structural reform process	Council continues to engage with the government reform process, with the sewerage assets and service provision transferring to a new large public entity within the next 4 years	
Option 2 – Opt out of government structural reform process	Council opts out of the government reform process and continues to own sewerage assets and provide sewerage services. Additional costs associated with regulatory compliance and higher national water quality standards	
Time period	2021-2035	
Cost	To be determined	To be determined
What is the benefit	Yet to be determined	
Assumption	Government will allow Council to consider different options	

7.3 Stormwater

Strategic Goals for the Stormwater Activity are:

- To ensure that adequate Stormwater drainage is provided and maintained for the wellbeing of the public
- To demonstrate responsible management in the operation, maintenance, renewal and disposal of Council owned Stormwater assets.



There are no significant Stormwater issues. Isolated flooding occurs from time to time and this can be addressed with small 'fit for purpose' solutions. These include works to identify, protect and improve overland flow paths.

Compliance with the Land and Water Regional Plan is required. This may see increased levels of compliance for discharges (treatment), especially as it relates to industrial discharges. Currently these are very few in the district.

Effective implementation of the Urban Stormwater Management Plan (SMP) is required as Council works towards a global consent for Stormwater management.

Stormwater programme development will be further refined once the global consent is issued.

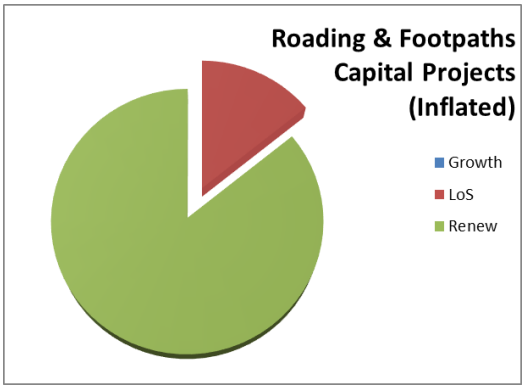
Stormwater may be included in the governments water industry reform, although this has yet to be clarified at the time of this Infrastructure Strategy.

$450k (2022) budgeted for the upgrade of storm water infrastructure in the Waimate CBD

7.4 Roads and Footpaths

Council's goal for the roads and footpaths activity is stated in the Transportation Policy.

The purpose of road assets is to provide a sustainable, safe, convenient, comfortable and cost effective road network for the movement of people, goods and vehicles throughout the Waimate District.



Issue - Some of the roads are failing due to the increased use (traffic numbers and size)	
Main Options	**Implication of Options**
Option 1 -Limit vehicle size	Some roads are not suitable for large or oversized vehicles. While Council has the authority to restrict the types of vehicles on the network this would be inconsistent with the district's economic objectives.
Option 2 – Progressively upgrade all roads across the district	It is acknowledged that there are portions of the network that are no longer fit for purpose. This is an expensive option that could not be justified on the less trafficked routes. Upgrading roads progressively across the district could mean some are providing a very poor level of service while other areas need work urgently.
Option 3 – Identify key routes and undertake surveys and analysis to identify what works will be required in future	Applying the ONRC hierarchy and looking at key routes for improving freight connections and building network resilience, the maintenance and renewals programmes can be developed to undertake works in a timely manner. This may not mean 'worst first' but intervening to prevent increased deterioration.
Time period	Programme for increased resurfacing, pavement rehabilitation, unsealed road re-metalling and associated drainage renewals implemented from 2021.
Cost	$ 2,275,587 (2022)
What is the benefit	LoS/Renewal
Assumption	-

Issue - Some of the roads are failing due to poor ground conditions and drainage	
Main Options	**Implication of Options**
Option 1 -Repair failures and limit spending	The network can be kept in use by undertaking repairs, Where there is insufficient structural strength under sealed roads or metal on unsealed roads this will only provide a temporary solution. Levels of service will reduce.
Option 2 – Progressively upgrade all roads across the district	It is acknowledged that there are portions of the network that are no longer fit for purpose. This is an expensive option that could not be justified on the less trafficked routes. Upgrading roads progressively across the district could mean some are providing a very poor level of service while other areas need work urgently.
Option 3 – Identify key routes and undertake surveys and analysis to identify what works will be required in future	Applying the ONRC hierarchy, and looking at key routes for improving freight connections and building network resilience, the maintenance and renewals programmes can be developed to undertake works in a timely manner. This may not mean 'worst first' but intervening to prevent increased deterioration.
Time period	Programme for increased resurfacing, pavement rehabilitation, unsealed road re-metalling and associated drainage renewals implemented from 2021. Investment in additional data collection (MSD/FWD) and analysis to support increased investment in larger quantities of drainage renewals and pavement rehabilitation from 2024.
Cost	$ 3,100,239 (2024)
What is the benefit	Growth/LoS/Renewal
Assumption	-

Issue – Some bridges are no longer suitable for the demands on the network	
Main Options	**Implication of Options**
Option 1 - No replacements or upgrading	There are very few portions of the network that cannot be accessed by Class 1, 50MAX or HPMV vehicles. Some long routes are required to achieve access
Option 2 – Upgrade all bridges to 50MAX/HPMV	This is a costly option, and while it would provide an excellent level of service it would be likely to take considerable time to implement.
Option 3 – Upgrade key bridges to provide cost effective travel options and some network resilience	Applying the ONRC hierarchy and looking at key routes for improving freight connections and building network resilience, the prioritised Replacement/Upgrade Strategy has been developed for the next two NLTP periods (2021-24, and 2024-27). These are regarded as the priority and can be improved under NZTA's 'structural component replacement' Work Category.
Time period	Ongoing
Cost	$ 2,007,511 (over 10 Years, inflated)
What is the benefit	LoS/Renewal
Assumption	-

Issue – Road safety is critical and urgent as outlined in 'Road to Zero'	
Main Options	**Implication of Options**
Option 1 - No improvements to deliver safety outcomes	Improvements to road safety outcomes within the District would not include upgrades or improvements at high-risk intersections, high-risk rural road sites, walking and cycling projects or planned speed management implementation.
Option 2 – Carry-out an enhanced programme of safety improvements across maintenance, operations, renewals and improvements investment	This is a costly option, and while it would provide an excellent level of service it would be likely to take considerable time to implement.
Option 3 – Upgrade key sites to provide cost-effective improvements delivering safety benefits for customers	Applying the ONRC hierarchy, and looking at key sites for improving network safety, a Low Cost-Low Risk Minor Safety Improvements programme has been developed for the next NLTP period (2021-24). These are regarded as high priority to deliver road safety and walking and cycling benefits.
Time period	Ongoing
Cost	$ 990,000 (over 3 Years, inflated)
What is the benefit	LoS/Safety
Assumption	-

Consideration of Public Transport & Active Transport will continue to be developed in conjunction with Environment Canterbury and NZTA. Further programme revisions may be included as appropriate in future versions of the Infrastructure Strategy

7.5 Summary of Significant Infrastructure Issues

Aging assets, addressing changing transport demands and improving water supplies are all challenges for Waimate District Council. Over the next ten years investments to improve levels of service will be the priority, and renewal programmes will ramp up for Water and Sewerage activities.

Roading investment levels are reviewed every three years in lines with the government priorities for financial assistance.

The following chart illustrates the key issues and responses.

	Years 1-3	Years 4-10	Years 11-20	Years 21-30
Roading and Footpaths	Improved drainage Flood resilience Infrastructure safety improvements and speed management Reseals Some Pavement Rehabilitation	Road strengthening to respond to drainage/pavement condition Reseals More Pavement Rehabilitation Safety improvements	Reseals Pavement Rehabilitation	Reseals Pavement Rehabilitation
Water Supplies	Treatment upgrades Pipe renewals Govt. water reform	Pipe renewals	Pipe renewals	Pipe renewals
Sewerage	Investigate inflow Pipe renewals Govt. water reform	Reduce inflow Pipe renewals	Pipe renewals	Pipe renewals
Stormwater	Urban improvements Global consent Govt. water reform	Urban improvements		

7.5.1 Water

Table 7.3: Significant Water Projects

Scheme	Issue	Issue ID	What are We Doing?	What is the Benefit?	Cost Type (Inflated)	Total Cost (30 years)	First Year Group	Last Year Group
Cannington Motukaika	Aged Infrastructure - Renewals		10 years	Reduced failure rates / management of risks / Protect LoS	164,906			
Hook Waituna	Drinking Water compliance upgrade		2021/22	Compliance with DWSNZ	673,333			
Lower Waihao	Drinking Water compliance upgrade		2021/22	Compliance with DWSNZ	797,000			
Lower Waihao	Glenavy Reticulation Upgrade		2024 to 2029	Reduced leakage / increased capacity for growth	290,388			
Otaio Makikihi	New Bore Redundancy		2022/23	Redundancy in supply / resilience	127,182			
Otaio Makikihi	Makikihi Reticulation Upgrade		2025 to 2029	Reduced leakage / increased capacity for growth	203,874			
Waihaorunga	Drinking Water compliance upgrade		2022/23	Compliance with DWSNZ	470,470			
Waihaorunga	Renewals		10 years	Reduced failure rates / management of risks	126,136			
Waikakahi	Drinking Water compliance upgrade		2021/22	Compliance with DWSNZ	1,439,000			
Waimate Urban	Lateral renewals		10 years	Reduced failure rates / management of risks / Protect LoS	886,279			
Waimate Urban	AC Main Pipe renewals		10 years	Reduced failure rates / management of risks / Protect LoS	1,525,747			
Waimate Urban	CI Main Pipe renewals		10 years	Reduced failure rates / management of risks / Protect LoS	2,412,690			
Waimate Urban	Te Kiteroa Main, Booster and Reservoir		2022 to 2024	Promote growth / increased LoS	799,699			
Waimate Urban	Booster & Extension Bakers/Court/Hunts/Fitzmaurice Roads		2022 to 2029	Promote growth / increased LoS	980,232			

7.5.2 Sewerage

Table 7.4: Significant Sewerage Projects

Scheme	Issue	Issue ID	What are We Doing?	What is the Benefit?	Cost Type (Inflated)	Total Cost (30 years)	First Year Group	Last Year Group
Waimate Urban	Te Kiteroa Main,		2021/22	Promote growth / increased LoS	312,100			
Waimate Urban	Edward Street Upgrade		2021/22	Alleviate capacity issues	616,193			
Waimate Urban	Reticulation Renewals		10 years	Reduced failure rates / management of risks / Protect LoS / Environmental outcomes	4,891,786			

7.5.3 Stormwater

Table 7.5: Significant Stormwater Projects

Issue	Issue	Issue ID	What are We Doing?	What is the Benefit?	Cost Type	Total Cost (Inflated)	First Year Group	Last Year Group
Stormwater			Queen Street – upgrade	Reduce nuisance flooding / reduce failure rates / increase LoS	2021/22	450,454		

7.5.4 Roads and Footpaths

Table 7.6: Significant Roading Projects

Issue	Issue	Issue ID	What are We Doing?	Benefit	Project Type	Total Cost (inflated)	First Year Group	Last Year Group
Roading		10 years	Sealed Road Resurfacing	LoS / Safety	Renewal	12,778,959	2021-22	2030-31
Roading		10 years	Pavement Rehabilitation	LoS / Demand	Replacement	6,560,640	2021-22	2030-31
Roading		10 years	Drainage Renewals	LoS	Renewal	7,821,185	2021-22	2030-31
Roading		10 years	Unsealed Road Remetalling	LoS	Renewal	4,331,484	2021-22	2030-31
Roading		3 years	Low Cost – Low Risk Safety Improvements (excludes specific projects below)	Safety	Improvement	395,000	2021-22	2023-24
Roading		3 years	Footpath Extensions	Walking and Cycling	Improvement	235,000	2021-22	2023-24
Roading		2022-23	Talbots Road Widening	LoS / Safety	Improvement	200,000	2022-23	
Roading		2021-22	Holme Station Intersection Realignment	LoS / Safety	Improvement	160,000	2021-22	

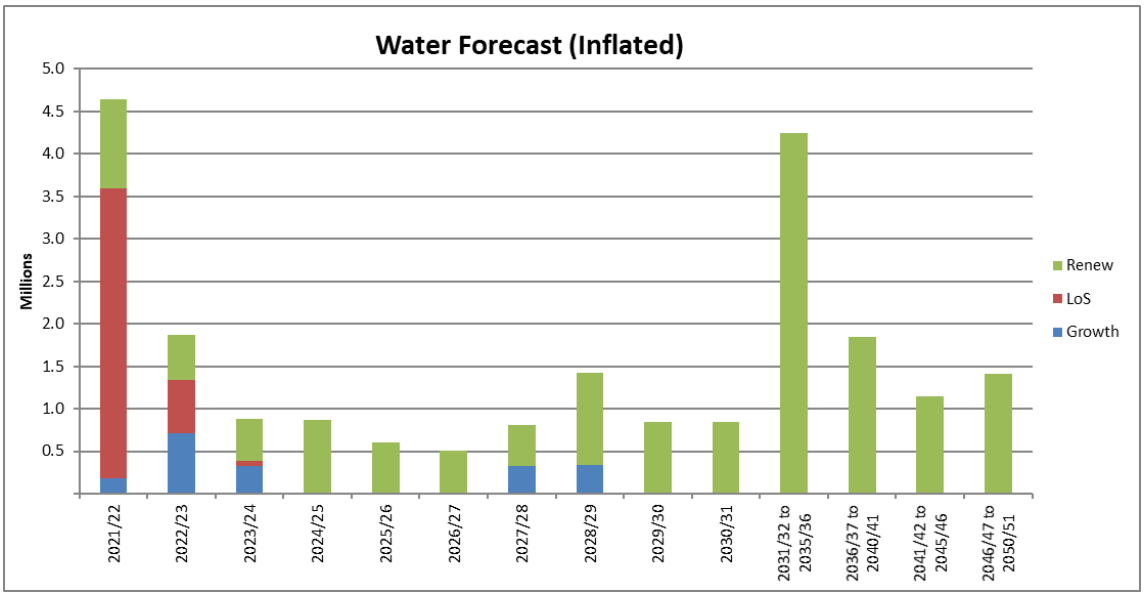
8.0 FINANCIAL ESTIMATES

8.1 Water

The projected capital expenditure associated with the water infrastructure assets are graphically represented below:

Renewing aging pipes (both urban and rural) is an ongoing programme. Early in the period, capital upgrades are required to complete the Lower Waihao, Waikakahi, Hook-Waituna, Cannington Motukaika and Waihaorunga upgrades.

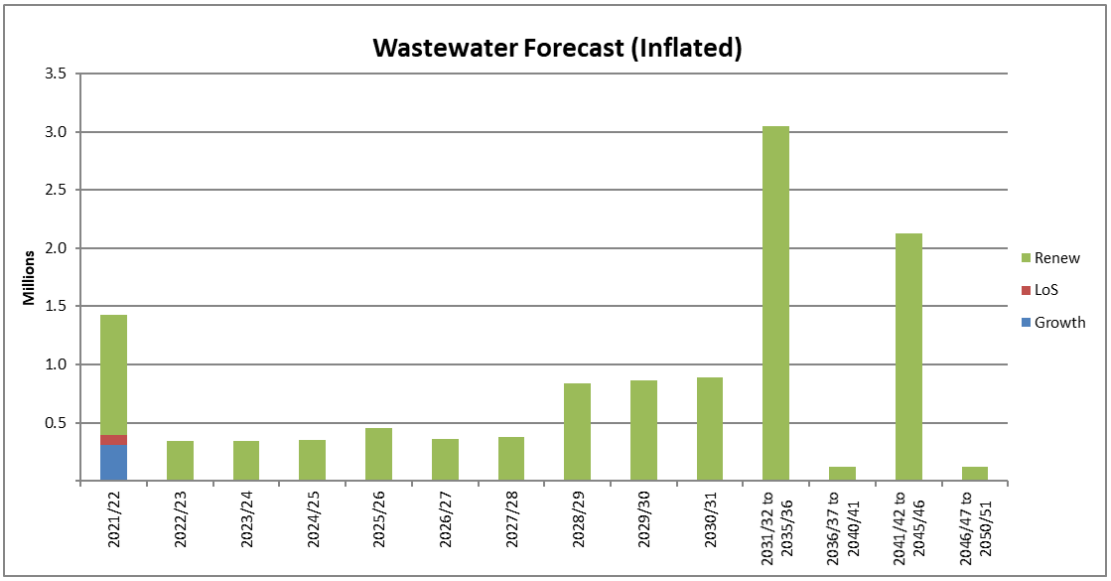
Figure 8.1: Projected Capital Expenditure – Water (Urban and Rural)



8.2 Sewerage

The projected capital expenditure associated with the sewerage infrastructure assets are graphically represented below. As illustrated all forecast expenditure relates to renewals, mostly reticulation.

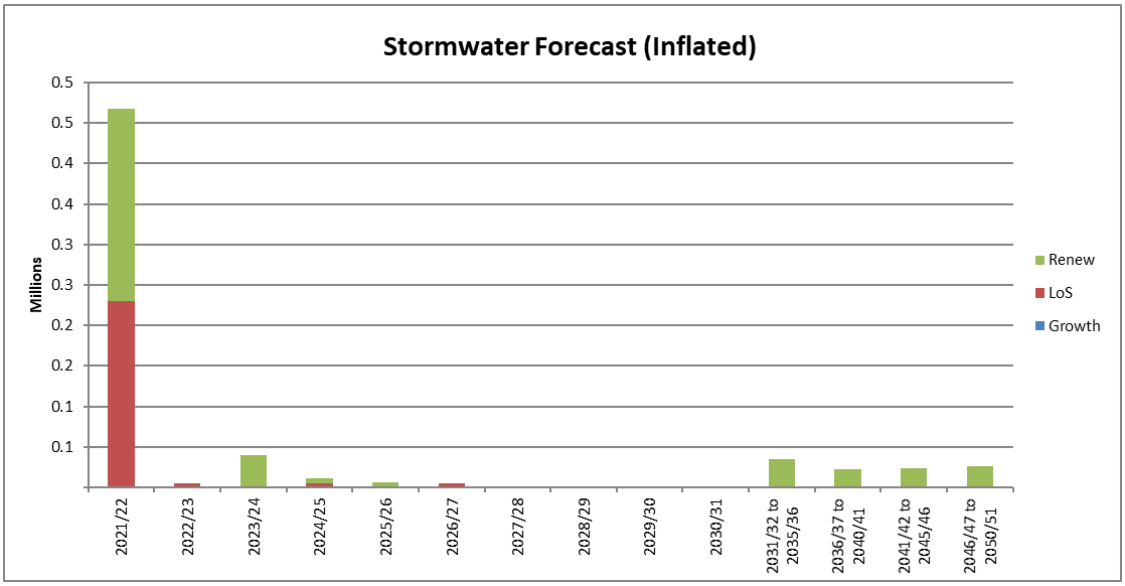
Figure 8.2: Projected Capital Expenditure – Sewerage



8.3 Stormwater

The projected capital expenditure associated with the stormwater infrastructure assets are graphically represented below. The graph illustrated very limited investment early in the planning period:

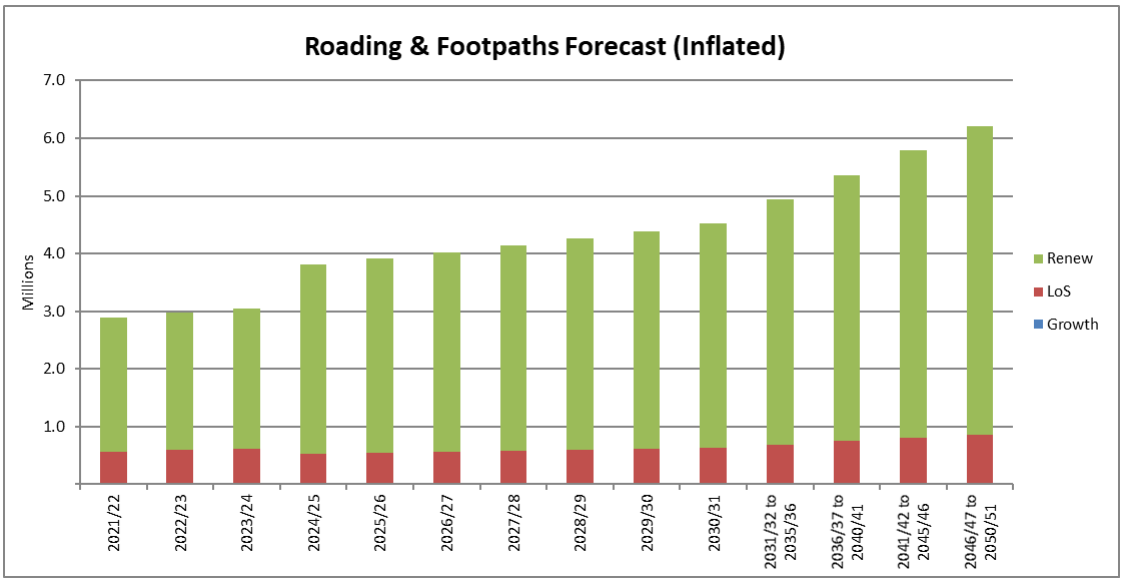
Figure 8.3: Projected Capital Expenditure – Stormwater



8.4 Roads and Footpaths

The projected capital expenditure associated with the Roads and Footpaths infrastructure assets are graphically represented below. Renewal of assets is the greatest portion of the forecast - which includes sealed road resurfacing, unsealed road metalling and pavement rehabilitation. The overall programme of drainage renewals is also significant. Minor “Low Cost Low Risk” safety improvement capital expenditure is lower than each of these renewal Work Category investments.

Figure 8.4: Projected Capital Expenditure – Roads and Footpaths



8.5 Total Expenditure

The projected capital expenditure associated with the significant infrastructure assets are graphically represented below:

The 30 year projected capital and operational expenditures associated with the core Infrastructure Assets are graphically represented in the figures below.

These expenditures come from Council's planned capital investments, predicted operations and maintenance cost and renewals forecasting. These expenditures take into account of all 'significant' and 'non-significant' capital and operational expenditure due to Level of Service, Growth, Operation and Maintenance or Renewal requirements.

Figure 8.5: Projected Capital Expenditure- Infrastructure Assets

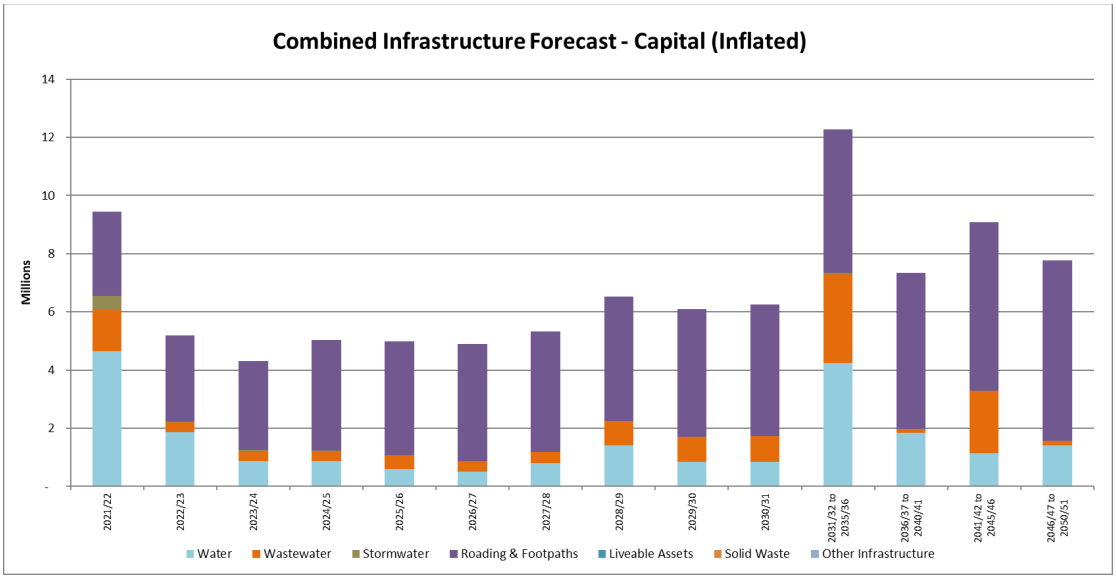
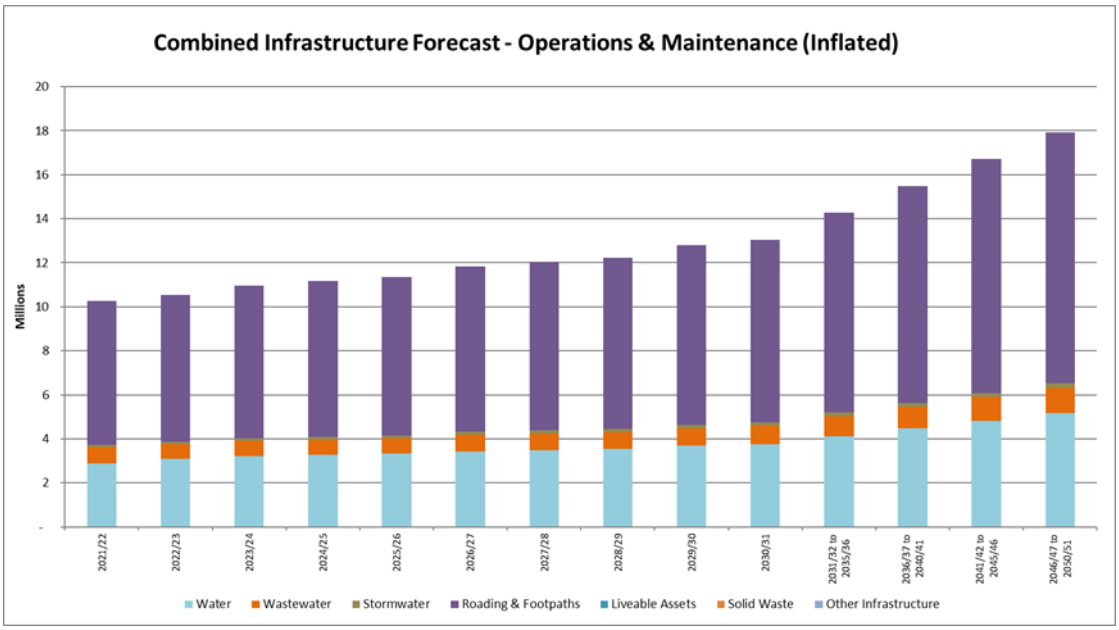


Figure 8.6: Projected Operational Expenditure –Infrastructure Assets



8.6 Infrastructure Strategy & Financial Strategy Linkages

This Infrastructure Strategy, the Financial Strategy and Consultation Document have been developed in conjunction with each other and are closely linked. The issues outlined in this Infrastructure Strategy were well developed in 2018 and have been updated in 2021, The Financial Strategy reflects the continued focus and development of these issues.

8.6.1 Financial Impacts of the Infrastructure Strategy

Waimate District Council faces the challenge of aging pipe assets that are due for replacement and a roading network that is under pressure. This infrastructure is vital to the economy of the district and beyond, along with the wellbeing of the community.

The combined forecast for operations and maintenance as well as capital identified is considerable. Core infrastructure costs exceeding $20 million per year is a challenge for a small community and smart planning is vital.

On the infrastructure side, a focus on criticality and prioritisation is key to investing where it will provide the greatest benefit. This will need to be communicated well as with a prioritised approach there could be differing views on what should be done and what should be delayed.

Alongside this infrastructure strategy, the financial strategy discussed the options for funding these infrastructural challenges. Council is focussed on continuing to support the district and its residents, and this means providing a fair balance of revenue methods and providing fit for purpose services.

8.7 Expenditure Summary

Summary of the 30- year Infrastructure Asset expenditure (Inflated, $) for the Roads and Footpaths and 3 Waters and is presented in Table 6 1.

Table 8-1: Expenditure Summary

		2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32 to 2035/36	2036/37 to 2040/41	2041/42 to 2045/46	2046/47 to 2050/51
Water	Minor Projects														
Water	O & M	2,894,736	3,095,034	3,219,340	3,261,759	3,320,567	3,440,239	3,488,900	3,539,812	3,692,848	3,772,434	20,618,449	22,374,729	24,131,008	25,887,287
Water	Growth	177,980	716,133	326,064	-	-	-	326,928	337,708	-	-	-	-	-	-
Water	LoS	3,419,378	621,857	57,008	-	-	-	-	-	-	-	-	-	-	-
Water	Renew	1,046,164	536,026	492,484	866,376	607,682	506,492	476,381	1,081,148	848,458	845,877	21,246,876	9,206,947	5,717,127	7,056,373
Water	**Total Capital**	**4,643,522**	**1,874,015**	**875,555**	**866,376**	**607,682**	**506,492**	**803,309**	**1,418,856**	**848,458**	**845,877**	**21,246,876**	**9,206,947**	**5,717,127**	**7,056,373**
Wastewater	Minor Projects														
Wastewater	O & M	705,818	658,283	681,847	689,015	699,100	733,975	742,435	750,255	798,343	826,935	4,519,659	4,904,643	5,289,628	5,674,612
Wastewater	Growth	312,100										-	-	-	-
Wastewater	LoS	85712	-	-	-	-	-	-	-	-	-	-	-	-	-
Wastewater	Renew	1,031,975	340,186	343,630	351,000	452,659	363,319	379,470	835,224	867,894	891,300	15,253,506	601,134	10,639,232	630,016
Wastewater	**Total Capital**	**1,429,786**	**340,186**	**343,630**	**351,000**	**452,659**	**363,319**	**379,470**	**835,224**	**867,894**	**891,300**	**15,253,506**	**601,134**	**10,639,232**	**630,016**
Stormwater	Minor Projects														
Stormwater	O & M	124,756	131,302	136,217	136,827	137,731	143,638	144,518	145,480	151,881	153,412	838,482	909,904	981,326	1,052,748
Stormwater	Growth											-	-	-	-
Stormwater	LoS	230,492	5,170	-	5,400	-	5,668	-	-	-	-	-	-	-	-
Stormwater	Renew	237,427	-	40,117	5,400	5,762	-	-	-	-	-	175,147	115,014	119,628	128,334
Stormwater	**Total Capital**	**467,919**	**5,170**	**40,117**	**10,800**	**5,762**	**5,668**	**-**	**-**	**-**	**-**	**175,147**	**115,014**	**119,628**	**128,334**

		2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32 to 2035/36	2036/37 to 2040/41	2041/42 to 2045/46	2046/47 to 2050/51
Roading & Footpaths	Minor Projects														
Roading & Footpaths	O & M	6,539,737	6,651,658	6,927,593	7,073,138	7,193,212	7,523,103	7,654,064	7,785,354	8,144,666	8,291,872	45,350,064	49,240,769	53,131,475	57,022,180
Roading & Footpaths	Growth														
Roading & Footpaths	LoS	564,333	591,896	618,739	530,105	545,140	561,145	577,635	594,125	611,585	629,045	3,440,385	3,735,545	4,030,705	4,325,865
Roading & Footpaths	Renew	2,335,386	2,382,094	2,430,814	3,275,867	3,368,779	3,467,684	3,569,587	3,671,489	3,779,386	3,887,283	21,260,402	23,084,390	24,908,377	26,732,365
Roading & Footpaths	**Total Capital**	**2,899,719**	**2,973,990**	**3,049,553**	**3,805,972**	**3,913,919**	**4,028,829**	**4,147,222**	**4,265,614**	**4,390,971**	**4,516,328**	**24,700,787**	**26,819,935**	**28,939,082**	**31,058,230**

9.0 SUMMARY OF WELL-BEING CONTRIBUTION

Council is committed to on-going improvement in the quality of the Water, Sewerage, Stormwater and Roads and Footpaths services management practices. This is reflected in the implementation of asset management systems and associated data collection and maintenance requirements.

The Infrastructure Strategy Improvement Plan is integral to that approach, quantifying current business practice and measuring progress toward an identified future position. The Improvement Plan is focused on the following key areas:

- Scheme Knowledge and Asset Condition
- Demand Management
- Project planning and coordination
- Communications

While reappraisal is an on-going process, the Improvement Plan will form the basis of the Water, Sewerage, Stormwater and Roads and Footpaths services annual business planning. An overarching Improvement Plan for this Infrastructure Strategy is presented in Table 9 1.

Table 9-1: Improvement Projects

Strategy Component	Specific Asset Management Improvements
Scheme Knowledge and Asset Condition	Ongoing data collection to ensure assets are understood and condition information is sufficient to develop robust renewal programmes
Demand Management	Collect traffic data (including heavy traffic) to identify level of service gaps, model pavement renewals and prioritise works.
Project planning and coordination	Prepare robust forward programmes and improve co-ordination between renewal programmes across asset types and other projects
Communication	Develop communication tools to engage the community and explain the prioritisation that will be required

These items are discussed in further detail in each of the Activity Management Plans.

10.0 GLOSSARY OF ACRONYMS AND OTHER TERMS

AC	Asbestos Cement
AEE	Assessment of Environmental Effects
AMIS	Asset Management Information System AP – Annual Plan
AMP	Asset Management Plan
AP	Annual Plan
AVG Filter	Automatic Valve-less Gravity Filter
CI	Cast Iron
FAR	Funding Assistance Rate
GNS	Geological Nuclear Science
HCV	High Capacity Vehicle
HPMV	High Productivity Motor Vehicle
I&I	Inflow and Infiltration
Infrastructure	Roading, footpaths and 3 Waters
K&C	Kerb and Channel
LTP	Long Term Plan
LoS	Levels of Service
Normalising or Harmonising	sharing
NZTA	New Zealand Transport Agency (Waka Kotahi)
NRRP	Natural Resources Regional Plan
O&M	Operations and Maintenance
ONRC	One Network Road Classification
PLWRP	Proposed Land and Water Regional Plan
PWWF	Peak Wet Weather Flow
RAMM	Road Assessment and Maintenance Management
RTC	Regional Transport Committee
SCADA	Supervisory Control and Data Acquisition
SMP	Stormwater Management Plan
WWTP	Wastewater Treatment Plant