Transportation

Activity Management Plan

2024-2034

Selwyn
DISTRICT COUNCIL

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1.0 Executive Summary

This section provides a concise overview of the Activity Management Plan (AMP), summarising the key topics, objectives, and strategies outlined within the document to guide the reader through the plan's main points.

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1.1 Overview

Our goal for transportation

To maintain, operate, and improve the road network and other transport facilities to achieve a transport system that provides safe, efficient, and sustainable movement of people and goods.

1.2 Services and Assets

The services and assets covered by the Transportation Activity are described in the table below:

Sealed Roads	1,572 km	Unsealed Roads	1,122 km
Urban Roads	393 km	Rural Roads	2,303 km
Footpaths	406 km	Shared Paths	32.2 km
Roundabouts	39	Traffic signals	33
Bridges	174	Road Signs	20,015
Streetlights	8,857	Bus Stops	125
Drainage Features	12,257	Railing	6,801 m
SW Channel	580 km	Traffic Islands	760
Total Road Network	2,695 km	Total Asset Value (ORC)	$1.1 bn

1.3 What we do and why we do it

Our Transportation Activity delivers vital road and transport services, supporting the Selwyn community's lifestyle and economic activities. We do this through working with NZ Transport Agency Waka Kotahi (NZTA) and the community to plan, fund, and provide a range of transportation services and infrastructure including:

- Sealed and unsealed roads for the movement of people and goods across short and long distances,
- Footpaths and cycleways to facilitate active transport and recreation within the transportation network,
- Public transport facilities to provide alternative transportation options and enhance the accessibility of the district,
- Street lighting to ensure a safe and accessible network during night times,
- Traffic signals and roundabouts to control use and reduce congestion at key intersections, safely and efficiently,
- Road signs to assist users in making safe driving choices, and
- Planning for future transport needs in coordination with our neighbours and other transport Agencies.

The management of the Councils roading and transport activity is a 'significant activity' under the terms of the Local Government Act 2002.

The Council has a statutory obligation to provide an effective and efficient transport system including aligning it to the purpose and objectives of the Land Transport Management Act 2003 and any subsequent amendments to it.

Environmental: Waikirikiri | Selwyn's whenua | land, wai | water and Taonga o te Taiao | biodiversity are protected and enhanced. Our towns are cleaner and greener and we address climate change
A clean | taiao environment
We will live within our air, soil, water, and Taonga o te Taiao | biodiversity limits
We utilise smart and toitū | sustainable practices
Liveable low carbon towns
Growth that consolidates and intensifies towns
A town network supported through their strong inter-connections
Social: Waikirikiri | Selwyn is a resilient district and a great place to live, work, and play; where our takata | people support each other, enjoy spending time together and feel a sense of honoka | connection
Honoka | Connected community
We have affordable ways to easily connect with the facilities, services, and communities within and outside of our district
Strong neighbourhoods
We are safe at home and in the community
We are ready for emergency events and disasters
We can effectively respond to, and recover from, emergency and disaster events
Active and educated community
Everyone who lives in and outside of the district can enjoy our environment
We can play and be physically active
Economic: Waikirikiri | Selwyn is a prosperous diverse economy that employs and empowers our takata | people and invests in our towns and communities
A district of opportunity
There is a strong diverse economy, supported by a sustainable rural sector
The district is a key regional freight and logistics hub supported by an efficient freight network
Quality innovative infrastructure
Our infrastructure is adaptive and resilient
Our transport system is effective and accessible with a range of choices

1.4 Alignment with National, Regional and Local Objectives

The Council needs to manage its transport activities to positively contribute to fulfilling its Community Outcomes responsibilities in the following ways:

Council's Transport Activity must also align to both national and regional transport objectives and outcomes in order to receive national funding assistance, otherwise Selwyn ratepayers would have to foot the bill entirely. These requirements are detailed in the latest versions of the Government Policy Statement (GPS) on Transport (Ministry of Transport) and Canterbury Regional Land Transport Plan (Canterbury Regional Council).

For the (Draft) 2024 GPS we need to demonstrate that our Transport Activity and programmes outlined in our Long-Term Plan and Activity Management Plan also help to contribute to these key transport national strategic priorities, in addition to our own Community Outcomes.

The Government's Strategic Priorities which this GPS will deliver against are:

- Economic Growth and Productivity

• Increased maintenance and resilience

• Safety

• Value for money. The Council's more direct response to climate change includes its continuing investment in new walking and cycling facilities and public transport that will help contribute to reduce the dependency on private motor vehicles and fossil fuel consumption.

To focus our attention on all of this, three problem statements have been formulated that reflect our issues both at a national and Selwyn local level. When these problems are addressed, there are benefits, which also align with both the GPS and our Community Outcomes responsibilities as stated below.

Problem Statement	**Benefit Statements (associated with all problems)**
The existing network and driver behaviour contribute to an unacceptable number of fatalities and serious injuries	Developing a transport system where no-one is killed or seriously injured Providing people with better transport options to access social and economic opportunities Developing a low carbon transport system that supports emission reductions, while improving safety and inclusive access Improving freight connections for economic development
Development and land use change across a diverse range of urban and rural areas is prompting changes in travel patterns which challenge the transport system suitability and user choice	
Growth and changes in travel patterns are impacting the network condition and efficiency	

1.5 Potential Negative Effects associated with the Transportation Activity

Carrying out roading and transport activities of a large scale such as ours also has the potential to be damaging even with the best of intentions to provide the benefits sought. The Council recognises these possible negative effects and takes these measures and responses to address them.

Significant Negative Effects			Social	Environmental	Cultural	Economic	Mitigation of Negative Effects	Positive Effects	
– – –	**Road Safety**	Hazardous roads and/or driving conditions, or speed limits that are not safe and appropriate may contribute to crashes, resulting in deaths and serious injuries.					Hazards are identified and reduced through engineering improvements, education, behaviour change and enforcement, with safety improvements prioritised. Timely and appropriate repairs and renewals. Safe and appropriate speeds are set based on evidence and stakeholder engagement.	The safety of all road users is prioritised, and deaths and serious injuries are reduced.	+ + +
– – –	**Mode conflict**	Increasing multi modal transport is not catered for within a safe network, resulting in mode conflicts and perceived or actual safety concerns.					Safe and appropriate and integrated infrastructure which provides for all modes of travel are prioritised to reduce conflicts and actual or perceived safety concerns.	All road users are safe and active modes are encouraged.	+ + +
– –	**Health**	Health issues arise from effects of climate change; air, light and noise pollution; obesity; road injury; and conditions associated with physical inactivity.					Utilising integrated transport systems encourages mode choice and reduces dependence on motor vehicles and fossil fuels, supporting health benefits. Light pollution to be balanced against need for safety. Use of buffer zones and planting to reduce effects.	Active modes of transport provide positive physical and mental health benefits.	+ +
– –	**Environmental damage**	Environmental degradation occurs through carbon and GHG emissions; air pollution; and dust. Runoff from roads, entering waterways may include contaminants which are harmful to the environment. Maintenance and improvement works have the potential to damage heritage and cultural sites, and vegetation or habitats. Transport routes can affect rural amenity and landscape values.					Mode shift planning and travel demand management, with supporting alternative, low emission modes, application of dust suppression and seal extensions (where appropriate), and integration of soft stormwater treatment systems into road design will minimise negative environmental effects. Planning to protect and minimise impact to environmental, historical, and cultural sites of significance.	Mode choice through integrated transport systems provides low emissions travel options. Emissions (including dust) are minimised. Access to significant sites is provided.	+ +

Significant Negative Effects			Social	Environmental	Cultural	Economic	Mitigation of Negative Effects	Positive Effects	
– –	**Affordability**	Community aspirations may exceed the ability to fund infrastructure to support aspirations – resulting is dissatisfaction and frustration (e.g. unsealed roads).					Council will attempt to balance the cost of the transportation activity with benefit and community desire, maximising co-funding and alternative funding where possible and apportion whole of life asset costs and capital expenditure over time. Provide a range of accessible transportation services so that all people and businesses can make informed choices in a timely manner.	The transport system is managed in an affordable way maximising benefit.	+ +
– –	**Infrastructure is not suitable for use**	Unsuitable infrastructure provision and management means businesses are not able to transport goods and services efficiently and communities are impacted. This could limit growth and impact on economic prosperity. Transport routes could sever/separate communities.					Review of existing infrastructure, planning and design will consider wider benefits and minimisation of negative effects, in balance with strategic objectives and purpose. Integrated multi-modal transportation infrastructure and services. Plan ahead for economic growth and population changes (including mode demand). Carry out renewals and new works in a timely manner.	The transport system is integrated, safe and appropriate for all road users. All users of transportation systems can access the services and amenities within safe and efficient transport routes.	+ +
– –	**Lack of resilience**	Infrastructure is unable to cope with increased pressure, including the impacts of climate change, reducing the resilience of the network and communities.					Identify vulnerable parts of the network, incorporate resilience capacity, based on future modelling (e.g., climate change factors).	The transport network is resilient to events, and provides appropriate resilience to our communities and economy.	+ +
–	**Inequality**	The impacts of transport on health are often inequitably distributed, as is access to safe transport modes.					Ensure all users are considered in transport planning and provision.	All members of our community are provided for in a safe and affordable way.	+

1.6 Planning ahead

The Selwyn District has experienced sustained high growth rates of mostly residential development over the last decade, and this is set to continue. It will be a key challenge for the Transportation Activity to meet the increased transport demands that comes with growth in a sustainable way. These challenges, and how we plan to respond is sent out in the table below.

Challenge	How we plan to respond:
Growth in demand and deteriorating asset condition	Taking a rigorous approach to assessing, planning, and delivering maintenance and repair works to best industry standards. Using travel demand management measures to keep transport growth at controllable levels by the use and promotion of other transport options
Land Use changes Constraints to NZTA funding shares	Proactively delivering transport infrastructure to meet future demands through an integrated transport and land use planning e.g. district and regional planning, spatial planning, township planning. Maintaining an open and collaborative co-funding relationship with the NZTA. Utilising other funding sources e.g. development contributions, regional and national infrastructure funding schemes were possible. Anticipating changes in advance to react and adjust accordingly
Changes to underlying regulatory framework Responding to community demands for active and public transport options	Keeping up to date with actions and intents of regulating agencies to keep abreast of proposed changes and implementing plans to adjust ahead of changes – actively partaking in consultation. Continue to deliver footpath, cycleway, and public transport infrastructure improvements

1.7 Demand and asset management

Selwyn District's traffic generation is growing at a similar rate to the population at around 4-5% per annum with over 520 million kilometres travelled across our roading network per annum. The movement of freight also continues to increase in the district as more commercial and industrial development occurs. While we aim to continue to provide appropriate levels of service fit for purpose across our roading network, it is becoming increasingly important to utilise travel demand management techniques. This will help stem the transport effects from growth by diversifying the travel options available to people in the transport system.

We take a long-term sustainable view in managing our roading and transport assets, especially when you consider these are currently valued at around $820 million, and to do so ensure that we:

- Identify demand drivers and influences on different aspects of the transportation network and systems;
- continuously monitor the level of use of roads across the district;
- calculate current capacity and future demand;
- undertake condition assessments of critical and ancillary assets;
- examined the risks to critical assets and transportation corridors;
- create strategies for key activity areas including walking and cycling, and public transport, bridge repair programmes, and maintenance and operations schedules.

1.8 Funding

Programmes within our Transportation activity which are approved and included in the Regional Land Transport Plan attract a 51% Funding Assistance Rate (FAR) from National Land Transport Fund (NLTF) administered by Waka Kotahi | NZTA. Approved emergency transportation works may attract a higher subsidy rate.

1.9 Major projects

Over the last three years, we have continued to manage our infrastructure assets in the most resilient, sustainable and affordable way, while getting maximum benefit for our communities. Our key projects and achievements are summarised below (as at January 2024)

Type of project		Details	Status
Upgrades	Intersections and access	Weedons Ross Road/SH73 intersection upgrade coordinated with NZTA	Completed
		Upgrade of Rolleston Drive and the Rolleston Drive-Tennyson Street intersection: Incorporating new lane layouts, traffic lights, and improved access for pedestrians and cyclists, along with new footpaths, cycleways, and lighting along both roads.	Completed
		Railway Road upgrade: Widening and sealing between Detroit Drive and West Melton Road to improve access to Izone	Completed
		Maddisons/Dawsons Road improvements: Provide a "standard" rural crossroad intersection safety upgrade – localised widening, quadrant kerbing, median islands, lighting, signage & markings.	Underway
	Roundabouts	Shands/Hamptons Road roundabout: Safety upgrade - Prebbleton arterial network	Underway
		Goulds/East Maddisons Road: Roundabout installation to improve safety & associated pavement renewal of Goulds Road.	Completed
		Shands Rd-Blakes Rd and Springs Rd-Marshs Road: New roundabouts instated as part of intersection upgrades featuring new road and lane layouts, cycle lanes, landscaping, and street lighting improvements, contributing to improved road safety and connections to the motorway system.	Completed
		Shands/Trents Road Roundabout: Safety upgrade - Prebbleton arterial network	Underway
Reseals	Annual reseals	2021/22: Just over 50km of resealing completed (less than planned due to rising costs and COVID-19 restrictions); 2022/23: 23km; 2023/24: 75km completed by January 2024 (60% of 75km target)	Underway
Extensions & widening	Wordsworth Street north extension	New access road south of Moore Street to access reserve, retail developments and car parking	Completed
	Road widening	Blakes Rd and Weedons Ross Road	Completed
		Trents Rd widening between Oakely Drive and Shands Road	Underway
Shared path, walkways and cycleways	Whitecliffs shared path extension	Created better connectivity between the communities of Glentunnel and Whitecliffs.	Completed
	George Holmes Rd Upgrade	Kerbing and footpath extensions from Jones Road	Underway
	Villa Mews	100m long shared use path connecting Villa Mews to East Maddisons.	Underway
	Templeton to Prebbleton Cycleway	Off road cycleway alongside Trents Road - links between planned City and Rail Trail networks	Underway

	Springston Rolleston Rd Shared Path	Transport Choices Project: Shared path	Underway
	West Melton to Rolleston Cycle	Transport Choices Project: Extends existing Hoskyns Road cycleway and new off-road cycleway on West Melton Road	Underway
Carparks	Rolleston public carparks	Part of a series of public carparks for the new town centre staged to match development	Underway
	Park n Ride – Foster Park	Addition of Park n Ride at Foster Park	Underway
Public Transport infrastructure	Bus stops and real time information	8 bus stop shelters and 6 Real Time Information signs across Rolleston, Lincoln and Burnham	Completed
	School bus shelter	New bus stop shelter at Selwyn Huts for school children	Underway
Bridges	Bridge replacement - Harper Rover Diversion	Replacement of small weight restricted or damaged bridges - Harper River Diversion Bridge	Completed
Resilience and recovery	Adverse weather repair works	Around $6 million in late May 2021 for repairs of more than 500km of roads & 14 bridges	Completed
		$1.6 million in July 2021 for repair of 2 bridges 1 culvert, 5 fords, roads and other drainage assets	Completed
		$400,000 in February 2022 for bridge, road and ford repairs	Completed
		$2.2 million in July 2022 for assets affected by flood including culverts, ford and road repairs	Completed
		$4 million in July 2023 for repairs including 9 bridges, 1 culvert, 16 fords and pothole repairs	Completed
		$390,000 used in October 2023 for road signs and trees damaged by wind	Completed
	Whitecliffs Culvert renewal	To reduce flooding risk and future proof the erosion of the road in future flood events	Completed
Streetlighting	Dunns Crossing Rd streetlighting	Install matching new arterial street lighting to fill in missing gap on Lincoln Rolleston Rd west side from Helpet to Levi/Lowes Road intersection.	Completed
	Street lamps	Replace streetlights with LED type.	Underway

1.10 What you can expect from us – Transportation

Objective	Level of Service	Performance Measure	Mandatory	Service area	Current performance	2024/25	2025/26	2026/27	2027/28 – 20233/34
To provide a well maintained, operated and affordable land transport system	Undertake maintenance and renewal programmes to ensure the safe and efficient operation of the roading network and related transport facilities to the satisfaction of ratepayers, road users and the NZ Transport Agency	Response to service requests: The percentage of customer service requests relating to roads and footpaths to which the territorial authority responds within the time frame specified in the LTP.	✓	All	70.3%	≥75% resolution within the timeframe specified			
		Condition of the sealed road network: The average quality of ride on a sealed local road network, measured by smooth travel exposure. (This Mandatory Performance Measure indicates the percentage of the network that complies with a maximum roughness target for a particular level of road)	✓	Urban	88%	≥85%			
				Rural	98%	≥95%			
				All roads	96%	≥93%			
		Maintenance of a sealed local road network: The length of the sealed local road network that is resurfaced.	✓	Sealed roads	23.66 km	≥75km			
		Maintenance of the Unsealed Road network: The percentage of roads to achieve “good” or “very good” grades in condition surveys undertaken that year.		Unsealed roads	63%	≥70%			
		Condition of footpaths within the local road network: The percentage of footpaths within a territorial authority district that fall within the level of service or service standard for the condition of footpaths that is set out in the territorial authority’s relevant document (such as its annual plan, activity management plan, asset management plan, annual works program or LTP).	✓	Footpaths	95%	≥80%			

Objective	Level of Service	Performance Measure	Mandatory	Service area	Current performance	2024/25	2025/26	2026/27	2027/28 – 20233/34
To cater for any significant projected traffic increases in a sustainable manner	Complete upgrade and capital projects on an annual basis as identified mostly through strategies and forward work programmes	The percentage of large projects which are delivered to an approved and funded programme.		Roading improvement	71%	≥75%			
To allow pedestrians, cyclists and motor vehicle users move safely around the Selwyn District	Fully utilise available funding opportunities to carry out safety improvement works in conjunction with community-based road safety, education and enforcement programmes	Road Safety: The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number	✓	Road safety	1 fatal and 18 serious injuries	number of fatalities and serious injuries in the current year is less than the average over the preceding 5-year period.			
	Use travel demand management and implement infrastructure to encourage mode shift to public and active transport modes	Public Transport: The change from the previous year in the number of passengers boarding public transport within the district.		Public transport utilisation	344,854 (+90,690)	number of passenger boardings in the current year is greater than the average over the proceeding 5-year period			
		Active Transport (Walking): The length of new footpaths constructed.		Active transport	2,623m	1,000m			
		Active Transport (Cycling): The number of schools participating in the School Cycle Skills Education Programme.			20 schools	≥50% of schools			
To contribute to an integrated and responsive local and regional transportation system	Transport projects planned and implemented based on local and regional priorities	Allocate the appropriate staff and resources to represent the interests of the Council and the community in sub-regional and regional transportation planning.		Attendance at relevant Regional Transport Committee and Regional Transport Officers Group meetings and forums.	88%	≥75%			

INTRODUCTION

This section sets out the purpose of this Activity Management Plan (AMP), shows the plan framework, indicates the key stakeholders involved and describes the asset management progress over the last 20 years.

This plan was prepared in 2024 during a time of continued growth:

- Increasing commercial, industrial and agricultural developments resulting in larger numbers of heavy vehicles on District roads.
- Approximately 18 km of new urban road has been added to Council's roading network annually since 2011.
- Two Inland Ports have been constructed in the Rolleston Industrial Zone. This is expected to generate 600 heavy truck movements per day when fully operational in conjunction with rail support.
- Combined value of Council's transportation assets has increased over the last 15 years to $1.1 billion.

Purpose of the Plan

The purpose of this (AMP) is to outline and summarise in a coordinated manner Council's long-term management approach (more commonly called Asset Management) for the provision and maintenance of transportation assets throughout the District.

It supplements the Business Cases developed in line with NZTA requirements but is more aligned with the International Infrastructure Management Manual structure and style.

This AMP is intended to be read in conjunction with Council's Long-Term Plan (LTP) and fulfils requirements of the Local Government Act 2002 (and amendments), Schedule 10. It should also be read in parallel with Regional and District Strategies (Section 3 of the AMP).

This AMP demonstrates how Council will:

- Detail the extent and quality of services demanded (or required) by the community and legislation now and in the future.
- Have clear linkages to community agreed outcomes and the agreed Levels of Service.
- Prudently manage the acquisition, maintenance, operation, renewal and disposal of roading assets in ways that optimise the value of services delivered to the community.
- Assess the risks of failing to deliver levels of service for its activities and provide appropriate means of mitigating those risks.
- Justify short, medium and long-term funding requirements.
- Manage the risk of asset failure.
- Provide adequate funding to manage the assets according to assessed priorities.
- Proactively improve knowledge of its assets.

Asset Management
The overall objective of Asset Management is to:

> *Deliver the required level of service to existing and future customers in the most cost-effective manner.*

Structure and Format

This document is Part 2 of the Transportation AMP. The document structure is summarised in Table 0.1.

Part 1 comprises the Executive Summary which has been specifically formatted for inclusion in the Long-Term Plan.

Table 0.1: Transportation Activity Management Plan 2024 Structure

Part I

LTP Summary (for inclusion in the LTP)

This section provides an overview of the Transportation Activity, Activity Classes and summarises expenditure programmes at a District level

Strategic Case (Selwyn District Business Case to NZTA)

Audience - Who should Read This?
Those seeking a District wide overview of how the Transportation Activity is managed

Part 2

Management of Transportation

This document outlines: Council's future achievements, the structures, policies, systems and processes that Council has in place to manage the transportation activity for present and future customers.

It details the areas of Level of Service, Growth, Sustainability, Risk Management, Life Cycle, Process, Financial, Gap Analysis and includes a Summary of the Services that make up Transportation Activity.

Audience - Who Should Read This?
Community Representatives, Council staff, Consultants, Developers and those who want to find out more about the processes that Council uses to maintain the agreed Level of Service.

Part 3

A collation of reports, data used within AMP document, and other documentation supporting the activity management function.

This is a collection of pdf, word and excel files and is only available in electronic format.

Table 0.2: Plan Format – Part 2

Section	*Content*
Section 1: Key Issues	Describe the challenges and aspirations faced by the Transportation Activity and informs the strategic direction for Transportation for the short term (2024-2027) and long term (2024 – 2034, and out to 2054).
Section 2: Introduction	Sets out the purpose of this Asset Management (AM) Plan, indicates the key stakeholders, describes the asset management progress over the last 20 years and shows the plan framework.
Section 3: Strategies, Plans, Legislation and Procedures	This section describes the combination of directives in place and their impact on the transportation.
Section 4: Description of Assets	Covers the rationale for ownership of the Transportation assets and the description of assets covered under this plan. This section also highlights the critical assets within the individual services.
Section 5: Road Safety	Looks at the processes set up by Council for assessing and managing safety as a priority and its integration in the Transportation Activity.
Section 6: Levels of Service	The Levels of Service for the Transportation Activities are defined and the performance measures by which the service levels will be assessed.
Section 7: Growth and Demand	Provides details of growth forecasts and demand drivers, which affect the management, and utilisation of Transportation assets.
Section 8: Risk Management	Details the Risk Management Processes utilised by Council for assessing and managing risk within the Transportation activity.
Section 9: Lifecycle Management	Outlines what is planned to manage and operate the assets at the agreed levels of service while optimising lifecycle costs.
Section 10: AM Practices and Processes	Outlines the information available on the assets, information systems used and process used to make decisions on how the asset will be managed. It also provides details on planning for monitoring the performance of the AMP.
Section 11: Financials	Identifies the financial requirements resulting from all of the information presented in the previous sections.
Section 12: Plan Implementation	This section details the improvements to AM within Council that will lead to an increase in confidence in the management of the assets.

Terminology Used in this AMP

Table 0.3: Terminology Used in this AMP

Term	Definition
Active Modes	Transport by walking, cycling or other methods which involve the direct application of kinetic energy by the person travelling.
Activity	Defined in the Land Transport Management Act 2003 as a land transport output or capital project, or both.
Activity Class	Refers to a grouping of similar activities.
Activity Management Plan (AMP)	Activity Management Plans provide a detailed account of the rationale, management practices, processes, and responsibilities of the Council and others directly involved in management of the Activity. The Activity Management Plan links Council's long-term strategy to operational resources and directs how the service is delivered in order to meet the District's community expectations as defined by the "community outcomes". Detailed financial information relating to the management of the activity resides in these documents and is summarised at the Council level in the LTP.
Annual Plan	Annual Plans update budgets and allow the Council to respond to new issues.
Approved Organisations	Approved organisations are organisations eligible to receive funding from New Zealand Transport Agency for land transport activities. Approved organisations are defined in the Land Transport Management Act 2003 as Regional Councils, Territorial Authorities or a public organisation approved by the Governor General by Order-in-Council.
Connecting NZ	A document that summarises the Government's broad direction for the transport sector over the next decade.
Contracts	The levels of service, strategies and information in the AMP are the basis for performance standards, contract specifications and reporting requirements in all of Council's maintenance and professional services contracts.
Corporate Information	Quality Activity Management is dependent on suitable information and data and the availability of sophisticated Activity Management systems that are fully integrated with the wider corporate information systems (e.g. financial, property, GIS, customer service, etc.). Council's goal is to work towards a fully integrated corporate information system.
District Plan	Council's District Plan establishes council policies and regulations for land use and subdivision and the environmental effects arising from these activities are to be mitigated. The District Plan set out how Council's carry out their functions under the Resource Management Act 1991 and well as guide decisions over new transport activities.
Financial and Business Plans	The financial and business plans are requirement from the Local Government Amendment Act. The expenditure projections will be taken directly from the financial forecasts in the Activity Management Plan.
	The service levels, policies, processes and budgets defined in the Activity Management Plans are incorporated into business plans as activity budgets, management strategies and performance measures.
Fuel Excise Duty	A tax imposed by the Government on fuel and used to fund land transport activities.
Hypothecation	The direct allocation of all income from tax or charges (e.g. fuel excise duty or road user charges) to a particular type of activity. The National Land Transport Fund works in this manner.

Term	Definition
Land Transport Management Act 2003	The main Act governing the land transport planning and funding system.
Legislation	The Activity Management Plan must comply with all relevant legislation and provide the means of meeting legislative requirements.
Long Term Plan (LTP)	The Long Term (Council Community) Plan. The primary instrument for the Council to report on its intentions on delivering its services to the community. The LTP is supplemented by Annual Plans produced in "non-LTP" years.
Long Term Plan (LTP)	The 2010 amendments to the Local Government Act 2002 changed the document name from LTCCP to LTP.
Maintenance	Repairing a road so that it can deliver a defined level of service, while leaving the fundamental structure of the existing road intact.
Ministry of Transport (MOT)	The government's principal transport policy advisor that leads and generates policy and helps to set the vision and strategic direction for the future of transport in New Zealand.
National Infrastructure Plan (NIP)	A document that sets out the Government's 20-year vision for infrastructure. It provides common direction for how economic and social infrastructure is planned, funded, built and used.
National Land Transport Fund (NLTF)	The set of resources including land transport revenue that are available for land transport activities under the Land Transport Programme.
National Land Transport Programme	A programme, prepared by the Agency, that sets out the land transport activities which are likely to receive funding from the National Land Transport Fund. The National Land Transport Programme is a 3-yearly programme of investment in land transport infrastructure and services.
New Zealand Transport Agency (NZTA)	The Government agency with statutory responsibility to manage the funding of the land transport and State Highway system.
One Network Framework (ONF)	Work commenced by the NZTA and Te Ringa Maimoa (REG) in 2019 has developed the existing ONRC hierarchy for much wider application, not just transport planning and activity management, through implementation of the One Network Framework (ONF).
One Network Road Classification (ONRC)	The nationwide road classification system agreed between NZTA and Local Government NZ in 2013. Also known as ONRC.
Operational Plans	Operating and maintenance guidelines to ensure that the network performs reliably and is maintained in a condition that will maximise the useful service lives of its components.
Road Safety Action Plan	Road safety action plans provide a sense of urgency, focus and commitment to mitigate road safety risks. The plans records agreed local road safety risks, objectives, targets, actions, and monitoring and reviewing processes. Each plan is the result of collaboration by key road safety partners. The plans are the primary mechanism for coordination education, engineering and enforcement approaches to road safety problems at sub-regional levels.
Strategic Plan	Strategic plans set out broad strategic direction. The LTP is a form of strategic plan which replaces the Long-Term Financial Strategy (LTFS). AMPs reflect the strategies outlined in this document and confirm tactics to achieve strategic goals.

Term	Definition
Structure Plan	Structure planning is a tool for managing the effects and demands of development in an integrated, holistic and orderly way. Structure plans provide a framework to guide the development of an area.
Walking and Cycling Strategies and Action Plan	Many councils have produced walking and cycling strategies. These strategies set out their community's vision for more cyclist and pedestrian friendly environments. Many of the strategies have action plans, which identify how these aspirations will be achieved.

2.1.1.1 *One Network Road Classification*

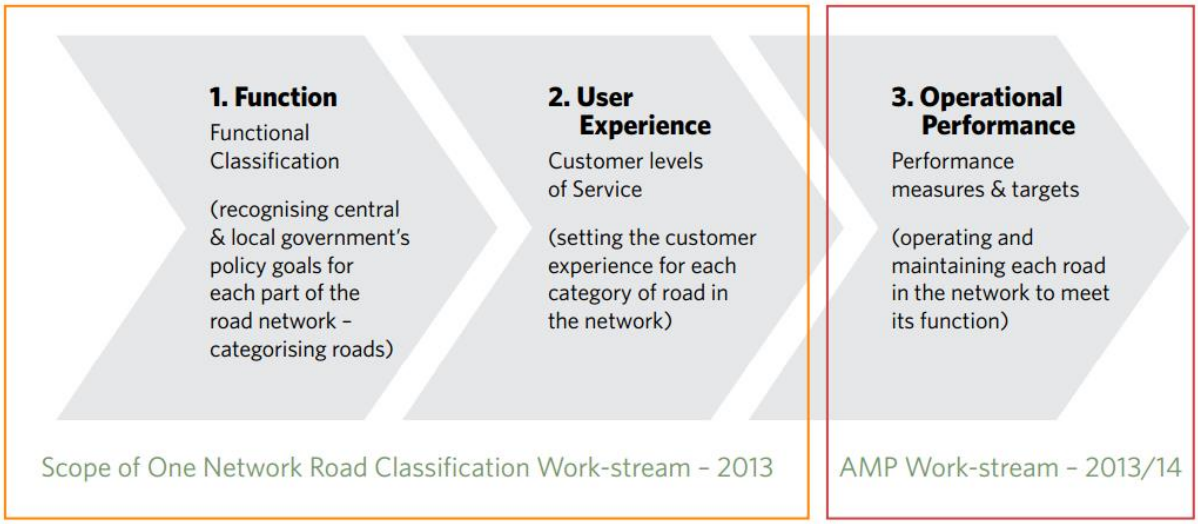
Background to ONRC

One Network Road Classification (ONRC) was developed by a joint Local Government / New Zealand Transport Agency (NZTA) project team as part of the Te Ringa Maimoa / Road Efficiency Group (REG) Work Program.

What is ONRC?

ONRC consist of three elements:

1. Functional Classification
2. Customer Level of Service
3. Performance Measures and Targets



Component 1: Functional Classification

The criteria used to determine whether a road is a "National", "Regional", "Arterial", "Primary Collector", "Secondary Collector" and "Access" or "Low Volume" road include:

- typical daily traffic
- heavy commercial vehicles
- buses
- active modes (significant number of pedestrians and cyclists)
- linking places
- critical connectivity
- freight tonnes values at ports
- airport passenger numbers
- tourism
- hospital access

This criteria is to assist Territorial Authorities in thinking of roads from the perspective of the customer.

Component 2: Provisional Customer Level of Service (CLoS)

CLoS is the differing experience a road user receives when travelling on different road categories. Each road category will have a specific CLoS associated with each of the six CLoS categories. They customer outcomes are:

- Travel time reliability
- Resilience
- Safety
- Amenity
- Accessibility

There exist some uncertainty around how conflicts around different outcomes are managed. For example, time travel reliability may come at the expense of safety in an urban setting. It is hoped the introduction of a "Place Function" within the ONRC may provide metrics that help communicate this conflict as well as the preferred outcome.

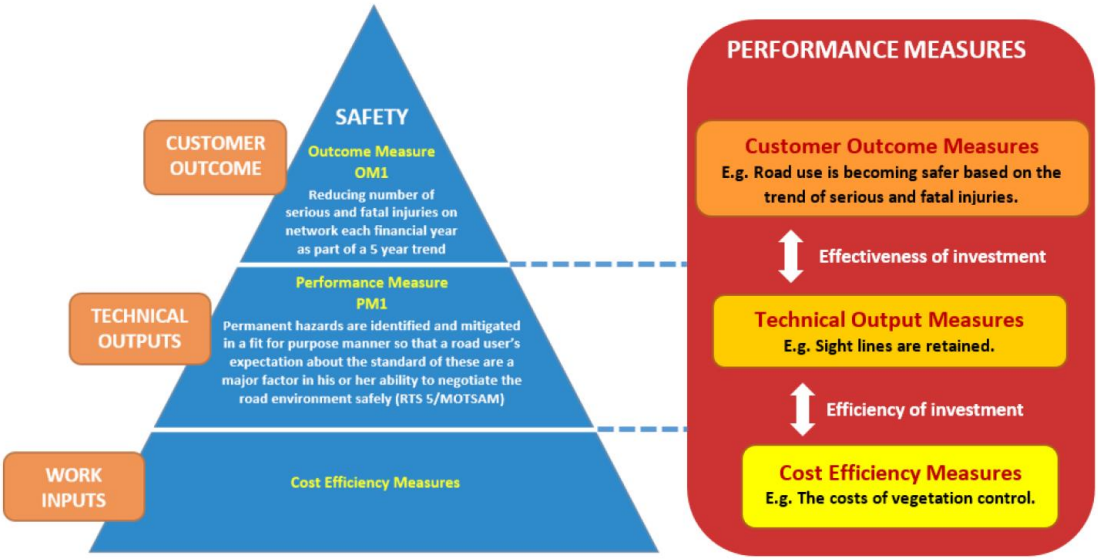
Headline 2.1:
The list of performance measures that each Council needs to be reported on has been consolidated.

Component 3: Performance Measures

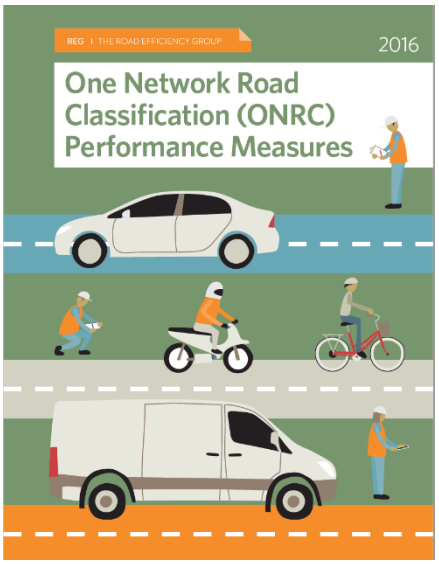
There are three types of ONRC performance measures:

- Customer Outcome Measures
- Technical Output Measures
- Cost Efficiency Measures

The graph below shows how the performance measures at the work inputs, technical outputs and customer outcomes levels relate with each other. The graph also describes how the performance measures demonstrate the efficiency and effectiveness of investments.



The ONRC Performance Measures



In 2016 REG published the set of performance measures that were included in the assessment of 2018-21 and 2021-24 funding applications.

Comparison with other authorities was possible and a summary report was produced for each authority.

Safety
Customer Outcome Performance Measures

Customer Outcome 1: the number of fatal and serious injuries on the network

Aim:
The road and roadside are becoming safer for road users.

Measure:
The total number of fatal and serious injuries each year on your network.

Generate Report:
The CAS system provides a file of crashes on each network each year to RAMM. This file can be loaded into your Asset Register (RAMM) to enable reporting by classification. As long as you keep your CAS data up-to-date in your RAMM database, the ONRC reporting tool will generate the result. The reporting tool provides calculation of a five-year trend.

Assess, Evaluate and Challenge:

1. Compare your results nationally and against your peer group. Are your fatal and serious injury crash rates trending up or down? Are crash rates trending differently within any classification?
2. Review your technical performance measures to establish contributing factors, for example do you have high numbers of night time crashes?
3. Is your crash data correctly recorded (crash location, contributing causes)?
4. What routes/locations are better or worse than the network as a whole?
5. Are your crash rates for the last 2 to 3 years reducing, or are they increasing?
6. If increasing, review alongside other safety data to determine the root cause.
7. If the injury rate has gone down, has anything your authority has done influenced this?
8. What are the learnings? Have you shared your learnings with others?

Action:
Translate problems, benefits and the response proposed into your business case.

If there are no issues to address, identify this in your AMP.

Council's ONRC Contribution

Council's network was used as part of the initial trial of the ONRC classification process.

During the nationwide classification process, Council facilitated the process regionally through the North Canterbury Roading Collaboration Group.

Council was able to write into its Maintenance Contract, the requirement for the Contractor to assist with ONRC inspection implementation.

Section 4 of the AMP includes information on the network hierarchy classified using ONRC, with reporting of ONRC Performance Measures included in Section 10.

2.1.1.2 *One Network Framework Classification*

The One Network Framework (ONF) in New Zealand adopts a holistic view of streets and roads, recognising their roles in our built environment. This framework encompasses several key principles:

- Streets as Multifunctional Spaces: The ONF shifts the focus for our roads, footpaths, and public spaces from purely transportation to a broader understanding of streets as integral parts of communities.
- Improving Road Safety: A primary aim of the ONF is to enhance road safety, ensuring that streets are safe for all users, including pedestrians, cyclists, motorists, and public transport users.
- Building Vibrant and Liveable Communities: ONF supports designing streets and transportation networks that support community well-being and social interactions.
- Movement and Place Approach: The ONF classifies roads through balancing the dual function of roads as corridors for movement (transportation of people and goods) and as places (areas for social, economic, and cultural activities).
- Consideration of Mode Priorities, Land Use, and Community Wellbeing: The framework considers different transportation modes, how land is used, and recognition of the importance of economic and social factors in transportation planning.

The ONF classifies the transport network into street categories which combine both movement and place elements, and incorporates urban and rural street families. This differentiation recognises that the level of people and goods movement, as well as the factors that determine place, are different in each context.

Council's use of ONF is developing, and transition to more widespread use of ONF will occur through 2024/27. Levels of service, maintenance programmes and staff and contractor awareness remain centred around ONRC for this Activity Management Plan. ONF is discussed further in Section 4 of the AMP.

2.1.1.3 *Pavements*

In this section, and throughout the Plan, the term 'pavement' is used to describe the structure of the road or carriageway, it is never used in the alternative meaning of 'footpath', as sometimes occurs in British use.

How will the AMP be used?

Development of an Asset Management Culture

The on-going development and successful implementation of asset management requires an organisational culture of asset management. To be successful, the asset management culture needs to be consistently modelled and supported by the Chief Executive and senior managers in conjunction with the elected Council. This process has been reinforced by the instigation of the Councils AM policy in 2009.

Roles and Responsibilities of Council Staff

The roles and responsibilities of Council staff as they relate to the Activity Management Plan enactment have been defined. The following table details how this is and will be carried out within Council.

Table 0.4: Activity Management Plan Enactment

	Item	How is this done
1	Organisational culture of asset management developed.	AM policy developed and adopted, updated in 2013. Workshop sessions with Councillors introducing AM generally and activity specific.
2	Council Staff understand the reasons for the plans and the implications for the long-term use of them.	On department basis.
3	The Activity Management Plans are adopted/accepted by staff.	Adopted by Council.
4	Council Staff understand what is in the plans and how it could affect their day-to-day work including their responsibilities and reporting requirements as detailed in the different sections within the AMP.	Training Programme.
5	Understand all the reporting requirements for Levels of Service and Internal Benchmarking.	Training Programme and implementation of LGA 2002 amendments.
6	Training required in the use of the Plan (what's in it, how work is done, on-going requirements for monitoring, review and updating).	Plan presented to all staff involved in the Transportation activity.
7	Instigation of processes to encourage Council Staff to use the Plan.	Improvement Plan.

Resourcing of Asset Management Programmes

Asset management programmes must be adequately resourced and require on-going investment to deliver identified improvements and keep plans and processes current with evolving practice. For asset management to be successful in the district, there must be a commitment recognised across the organisation. This commitment must translate into budget, human resources, and management accountability.

Implementation

This AMP includes improvement and expenditure programmes that will be actioned by the Asset Manager Transportation and implemented by the Council Service Delivery Team.

Councils AM Policy – Appropriate Level

Objective of the Transportation Asset Management Policy

This Policy was developed in 2008 and is reviewed regularly as part of the asset management process. The latest review was in 2023.

The appropriate level of Asset Management for Transportation was confirmed to be Intermediate.

The objective of Council's Asset Management Policy is to ensure Council's service delivery is optimised to deliver agreed community outcomes and levels of service, manage related risks, and optimise expenditure over the entire lifecycle of the service delivery, using appropriate assets as required.

Service delivery is required to be sustainable in the long term and deliver on Council's economic, environmental, social, and cultural objectives.

Headline 2.2: Council's Asset Management Policy sets the appropriate level of asset management practice for Transportation at "Intermediate".

The Asset Management Policy requires the management of assets be in a systematic process to guide planning, acquisition, operation and maintenance, renewal and disposal of the required assets.

Council's Asset Management Policy sets the appropriate level of asset management practice for Council's 5Waters, Community Facilities and Transportation.

2.1.1.4 *Asset Management Policy Principles*

Council will use the following principles to guide asset management planning and decision making:

- Effective consultation to determine appropriate Levels of Service.
- Ensuring service delivery needs form the basis of asset management.
- Integration of asset management within and across Council utilising corporate, financial, business and budgetary planning using activity management plans and Council's LTP to demonstrate this.
- Integration of asset management within Council's strategic, tactical and operational planning frameworks.
- Informed decision making taking a lifecycle management and inter-generational approach to asset planning.
- Transparent and accountable asset management decision making.
- Sustainable management providing for present needs whilst sustaining resources for future generations.

2.1.1.5 *Policy Linkages to Other Plans*

This Asset Management Policy links to Council's Long Term Plan and Transportation Asset Management Plan. An approach where planning is based around communities of interest is favoured, as this aims to promote an integrated management regime and encourage efficiencies across the District's Transportation services.

2.1.1.6 *Structured Assessment of Asset Management Practice*

Council has undertaken a structured assessment of the appropriate level of asset management practice for the Transportation assets. This structured assessment follows the guidance provided in Section 2.2.4 of the International Infrastructure Management Manual (IIMM). The result of this assessment was that the Transportation was considered to be Intermediate *"but using a more sophisticated and nearer to comprehensive approach"*.

2.1.1.7 *Implementation and Review of Policy*

The Asset Management Policy has been implemented as part of the previous AMPs and the confirmation of the level of AM will continue the approach utilised to date.

2.1.1.8 *Asset Management Implementation Strategy*

Council staff have completed a detailed analysis of appropriate asset management practice within the guidance offered by this Policy. This analysis has examined asset description, levels of service, managing growth, risk management, asset lifecycle decision making, financial forecasts, planning assumptions and confidence levels, improvement programmes, use of qualified persons and Council commitment to asset management planning.

Transportation AMP – Peer Review

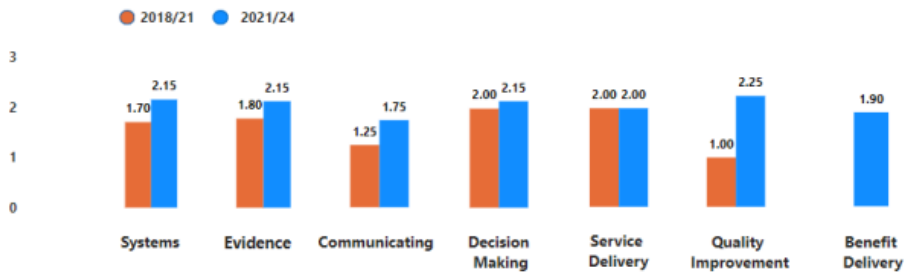
In 2009 a peer review provided feedback which was progressively implemented over the next ten years.

The establishment of REG/Te Ringa Maimoa provided a coordinated approach for the sector to improve practice. AMP reviews were undertaken in 2019 and 2022.

	SELWYN DISTRICT COUNCIL	REGIONAL AVERAGE	NATIONAL AVERAGE
2021 / 2024 AMP	2.09	2.01	2.17
2018 / 2021 AMP	1.65	1.78	1.99

Comparison between historic AMP and regional and National averages.

Comparison of individual assessment criteria scoring against previous SDC AMP



Progress Development over Time

AMP development has been a continual process, with substantial changes made at times to support new requirement and usability. Otherwise the focus has been on improving the robustness of the decision making process and reflecting the key issues at that time. There is an overall goal to make the plan more useful for the range of staff involves in the transportation section, as well as stakeholders.

Key advances in the 2009 AMP included:

- Extensive development of the lifecycle management portion, this section included information and analysis of other AM areas rather than revised individual sections.

Key advances in the 2011 AMP include:

- Restructuring of the AMP document to a consistent approach across all Council asset areas, particularly 5 Waters.
- Restructuring the information included in the 2009 lifecycle section into the appropriate sections to reflect the AM areas.
- Acknowledgement of the context the AMP was prepared within.
- Concise overview of key issues and challenges included.
- Inclusion of assumptions that are Council wide and Transportation activity specific. These assumptions were developed in advance of AMP development and adopted by Council.
- Inclusion of a separate section to explain the legislation, statutory plans, processes, and other documents in place and their impact on the transportation activity. As some AM areas are managed at a regional or sub-regional level (Greater Christchurch) these documents fulfil an essential role (e.g. Greater Christchurch Travel Demand Strategy).
- Inclusion of a Road Safety section which incorporates the Council Road Safety Strategy (2011).
- Inclusion of more financial information and current forecasts.

All the above areas are expanded in the appropriate Sections.

Key advances in the 2014 AMP include:

- A focus on the changes in growth and demand within the District (including LURP actions and CSM2 interactions).
- Extensive background work to ascertain the nature of growth and demand, particularly in Rolleston and Lincoln.
- Further extensive work to prepare options to address the impacts of increasing demand; this includes establishing traffic models, options and indicative designs for solutions.
- Development of estimates for programmes of capital works.
- Review of maintenance and renewal budgets to reflect changes across the network and the financial context.
- Improvements to bridge data and improved future management options.
- Inclusion of the updated Road Safety Strategy (2014).
- Complete revision of the risk section of the AMP.

Key advances in the 2017 AMP include:

- Writing the AMP using a Business Case approach.
- Completion of a number of Greater Christchurch and Canterbury-wide Business Cases.
- Refresh and update of Council's strategic transport models.
- Update of the Development Contribution Policy.
- Update of Council's dTIMS model. Includes peer review undertaken by industry leader.

- Review of unsealed road management process.

Key advances in the 2021 AMP include:

- Reduction in size of the document
- Use of more corporate information where appropriate
- Increase in plain English and Narrative style.

Key advances in the 2024 AMP include:

- Greater focus on evidence base available through Te Ringa Maimoa
- Refocus of costs and expenditure forecasts
- Revision of MOR through refinement of dTIMS

Key Assumptions

Assumptions have been considered at a corporate and an activity level. A coordinated approach across Council planning has been undertaken in support of the preparation of the LTP and AMPs for 2024-2034.

This report follows and includes discussion on the development of assumptions, discusses the significant assumptions and details corporate and activity level assumptions.

Headline 2.3:
Many of the assumptions relate to the rapid growth experienced. This includes the combined Greater Christchurch Planning.

Assumptions required to assist in development of the Council's AMPs to an appropriate standard has been undertaken. This has included an assessment of the assumptions already made in recent Council documents particularly the:

a. 2024-34 Long Term Plan
b. This Land Transport AMP

An assessment of assumptions needs to be provided on the basis that they are representative of the best available information at this time and are clarified through establishing the level of uncertainty on the matter. This provides a sound basis for decision making, with all known parameters clearly identified. The listing of assumptions provides a mechanism for Activity Planning to proceed with the necessary confidence.

This AMP includes those assumptions relevant to the Transportation activity. Full detail of assumptions underpinning Council planning (including other activities) can be found in the LTP.

A division of assumptions has been made into the following categories:

- Financial
- Growth
- Community
- Levels of Service (LoS)
- Legislation
- Organisational
- Implementation
- Climate Change

The expectation is that the tabled assumptions will form a transparent and accountable disclosure of assumptions that will be used to enable activity planning and prudent decision making to proceed where some uncertainty currently exists. They set a baseline for planning the planning we have undertaken and the financial estimates set out in this AMP.

Table 0.5: Significant Assumptions & Uncertainties for the Selwyn Transportation Activity Management Plan 2024-2034

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Financial						
Investments	The Council	Earnings from cash balances will be treated as Revenue	There is a risk that the Council will revise this policy and allocate these funds differently.	Low	Should the Council allocate or retain these funds differently, there will inadequate funds for roading improvements, or the income available to support the general rate requirement will reduce and the Council may need to increase rates or reduce expenditure.	Low
Unidentified liabilities	The Council	It assumed that the Council does not have any unidentified liabilities.	There is a risk of an unexpected liability coming to light, for example, a claim against the Council.	Low	If an unidentified liability arises it may increase the Council's expenditure. This risk is mitigated by the Council's Risk Management and Insurance Policies.	Low
Other funding opportunities for Transport	The Council	There will be new funding opportunities for transport system enhancements beyond Waka Kotahi Financial Assistance	Projects and initiatives that support specific outcomes (e.g./ travel mode shift) will not receive additional funding and that Council will need to provide further funding or consider other funding sources.	Moderate	Project cannot progress promptly, or funding needs to be reallocated to align with priorities. The use of development contributions is limited to growth components only of CAPEX projects	High
Funding of capital expenditure	Development Contributions	Development Contributions will remain available to fund network infrastructure commensurate with growth forecasts.	There is a risk that policy implementation and methodology restrictions will affect the ability to collect Development Contributions or the method by which contributions are calculated.	Low	If Development Contributions are less than assumed, the Council may need to increase its rates to cover any shortfall or delay upgrade works.	Moderate

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Asset lives and depreciation	NAMS	It is assumed asset lives will be as set out in the statement of accounting policies.	There is a risk that assets will wear out more quickly than forecast and require replacement earlier than planned.	Moderate	If assets require replacement more quickly than forecast, renewal or capital expenditure projects may need to be brought forward. The Council will consider the funding implications of any early replacements as they occur. Early replacement will result in a write off of the book value of the asset, increasing expenditure in the year it occurs.	Moderate
Timing and level of capital expenditure	The Council	The LTP assumes that the timing and cost of capital projects and associated operating costs are as determined through the Council's activity management planning process.	There is a risk that capital projects may not occur as planned. This may have an impact on the costs of the project. In periods of high inflation and cost escalations there is also the risk that actual project costs will vary from those forecasts. The GPS on Transport provides the direction for national transport funding allocations which can change. Transport projects seeking subsidy will need to be developed through a Business Case approach to NZTA which may change originally anticipated outcomes	High	If projects do not occur as planned, capital expenditure in any year may differ from that forecast and delay may also change the cost of individual projects. The Council will consider the impact of any change as part of the annual budget process and consider the funding implications of any cost changes.	High

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Pandemics	The Council	It is assumed that there will be no major financial impact from COVID-19 or other pandemics on the operation of Council.	There is a risk that a further outbreak of COVID-19 in New Zealand will occur and result in significant financial and operational impact to the Council.	Moderate	Any further outbreak of COVID-19 in New Zealand will have a significant impact on the Council and the community. The Council seeks to mitigate this risk through its Civil Defence function, Risk Management, Business Continuity Planning and financial resilience to maintain delivery of critical services.	Low
Multi-party agreements with developers and other agencies: once we commit we commit	The Council	Multi-party agreement will be established and adhered to ensure combined projects are able to progress	The loss of any party to a financial commitment affects project viability.	High	Projects are delayed or terminated, or Council is required to pay a greater share of costs including if projects assumed to be eligible for NZTA subsidy does not occur.	High
Asset values	BERL	The Council revalues its assets so that carrying values are maintained at fair value based on condition.	There is a risk that price level changes will be greater or lower than those assumed and that revaluation movements will be higher or lower than forecast.	Moderate	If price levels increase by more than forecast, the value of the Council's assets and the associated depreciation charge will increase. If price levels increase by less than that forecast, the value of the Council's assets and associated depreciation will increase less quickly. The impact of any such changes on rates will depend on whether the depreciation charge is funded by rates. Renewals are funded and spread over a long timeframe.	Moderate

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
NZTA revenue	The Council and Waka Kotahi (published information)	It is assumed that funding from Waka Kotahi will be as follows: 1: The financial assistance rate of 51% will apply to all maintenance, operations and renewals works included in the submission to the Land Transport Programme. 2: The financial assistance rate of 51% will apply to all capital works included in the submission to the Land Transport Programme, unless an alternative (enhanced or targeted) rate has been approved. 3: Emergency works funding above the funding programme will be provided to remedial works whenever qualifying events occur. 4: The overall value of the funding estimated for the Land Transport Programme shall be based on the activity management plan / programme business case, informed by published guidance from Waka Kotahi.	There is a risk that sufficient funds will not be available to pay for the planned capital projects. For example, subsidy is not available from national transport funding sources or because growth does not provide sufficient funding from development contributions or the community considers that required rate rises are not affordable. The full range of funding expected initially in a NLTP may be reduced during its period if NZTA face significant national cost increases requiring a reprioritization of NZTA funding which may result in capital projects being deferred for funding.	High	The Council will assess the availability of NZTA funds as part of the annual budget process and if funds are not available, it may revise its roading and transport programme that is set out in the LTP. This may include deciding to defer activities or providing further funding.	High
Funding of capital expenditure	The Council	The Council funds capital expenditure from a number of sources: development contributions; lump sum contributions; government subsidy; rates; dividends; interest from investments; reserves; external borrowing	There is a risk that sufficient funds will not be available to pay for the planned capital projects. For example, because growth does not provide sufficient funding from development contributions or the community considers that required rate rises are not affordable.	Moderate	The Council will assess the availability of funds as part of the annual budget process and if funds are not available, it may revise the capital programme that is set out in the LTP.	Moderate

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Funding of capital expenditure	The Council	Assumptions have been made on how each capital project included in the LTP will be funded. The Council's policy in relation to the funding of capital expenditure is set out in the Revenue and Financing Policy that is included in the LTP.	There is a risk that sufficient funds will not be available to pay for the planned capital projects. For example, because growth does not provide sufficient funding from development contributions, or the community considers that required rate rises are not affordable. There is also a risk that depreciation funds will be utilised affecting funding for renewals.	Moderate	The Council will assess the availability of funds as part of the annual budget process and if funds are not available, it may revise the capital programme that is set out in the LTP.	Moderate
Financial Contributions	The Council	Financial Contributions will not be collected to fund network infrastructure commensurate with growth forecasts.	Council are not accessing a potential income source. Development contributions are seen to be sufficient at this point	Moderate	Low risk for Council. If Council have the opportunity to collect Financial Contributions in the future, an additional income source becomes available to spend in a targeted way. A district plan change is required to enable council to access this income source and potentially amendment to LTP.	Low
Funding of operating expenditure	The Council	Planning and programmes will be adequately funded from LTP budgets	Responsibilities and costs change beyond the level expected	Moderate	Expenditure is greater than forecast or services are reduced	Moderate

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Inflation	Taituara / BERL forecasts	The level of prices is assumed to increase over the period of the LTP for each activity area as forecast by BERL. The level of increase assumed in the LTP is set out in the table below. The assumed increases include general prices, pay costs and construction costs.	There is a risk that price level changes will be greater or lower than those assumed, and that costs and revenues will be higher or lower than forecast.	Moderate	Should the price level change differ from those assumed, expenditure, capital costs and revenues may differ from those forecast. The Council mitigates this risk by setting its rates and fees and charges each year based on its forecast costs for the following year.	Moderate
Growth						
Selwyn 2031 / Future Selwyn (District Wide Strategy)	The Council	No significant changes in the management of infrastructure assets, reserves and community facilities are expected in the short term. Actions required in the 2024-27 period can be accommodated within current forecasts.	There is a risk that the visions and initiatives identified through the District wide strategy process cannot be accommodated through current planning, funding and delivery mechanisms.	Low	Changes in service (demand, performance, condition, resourcing) may be required as a result of decisions resulting from the Strategy. Changes to Activity Planning including funding may be required.	Low
District Plan	The Council	Development will occur in a similar way despite the enabling of medium density developing within Rolleston, Prebbleton, and Lincoln through the RM Amendment Act.	That medium density development is up taken at a high rate than expected	Moderate	Infrastructure, amenities, and other services will be insufficient to deal with increases population, and development.	High
Greater Christchurch Spatial Plan and Our Space	The Council	The adopted strategies and action plans contain a preferred medium to long-term urban development pattern for the greater Christchurch area. The Greater Christchurch Partnership will continue to promote collaborative planning and project implementation across the partner agencies.	There is a risk that coordinated effort will cease or become fragmented as priorities vary. There is a potential for competition for growth investment. Mandated amalgamation remains a concern.	Moderate	Planning and funding initiatives require reprioritisation	Moderate

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
National Policy Statements	The Council	That Council can respond to and undertake the planning and coordination required by the respective National Policy Statements including • Urban Development • Highly Productive Land • Freshwater Management • Indigenous Biodiversity (Proposed)	That planning and coordination in not adequate as required by the NPS-UDC, or and the proposed NPS-UD, and there is insufficient land supply to accommodate growth.	Moderate	Planning and coordination is inadequate and insufficient for the growth experienced.	Low
Population demographics	The Council (informed by Statistics New Zealand)	Population and demographic structure will remain similar for the district progressing to an aging population pattern similar to the NZ median.	There is a risk that the assumptions are not correct meaning the age and household structures modelled are incorrect. This could also lead to lesser misalignment between the population and the services planned for.	Moderate	The Council has based its plans for the management and expansion of its infrastructure on the population projections assumptions. Should the nature of growth change (e.g. more older people), the type of council investment will need to change.	Low

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Population Change	The Council with its population advisor and economic advisors	The Selwyn District population will continue to grow at a high rate, similar to that experienced over the past ten years. Growth will be focused in Rolleston and the Eastern Selwyn area, with moderate rates elsewhere. Details of the population and household numbers are included in the accompanying report.	There is a risk that the level of population growth will be higher or lower than the projections and that the timing of population growth will differ from that in the model.	Moderate	The Council has based its plans for the management and expansion of its infrastructure on the population projections. Should growth occur at different rates, it can respond by accelerating, delaying or revising planned capital works. The level of revenue from development contributions will vary from that forecast if actual growth differs from the projections, but any variation will tend to mirror the need for capital expenditure, thereby mitigating the risk to the Council of any shortfall. If growth occurs at a different rate from the projections, the forecasts for the cost of service provision will differ from the actual. Any impact on the Council's financial performance will be mitigated because the change in forecast revenue from rates and fees and charges will tend to mirror the change in the cost of service provision.	Moderate

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Traffic Growth: General, Heavy, Passenger Transport, Walking and cycling	The Council	There will be a growth in traffic on state highways and local networks within Selwyn district. While this will vary across the district, but generally be consistent with projected population growth rates with an emphasis on the Greater Christchurch areas of the District. Heavy vehicle traffic growth will be higher than general growth with concentrations around industry and freight transport hubs, including the Rolleston inland ports. Passenger public transport growth will progressively increase in the Selwyn district. There will be a continuing effort to encourage walking and cycling as a viable transport alternative in urban areas.to manage demand and reduce vehicle use	There is a risk that traffic numbers and composition will increase at a rate beyond that expected. Without investment in new and improved walking and cycling facilities, public transport services and infrastructure, the rate of uptake or shifting to those modes will be adversely affected. Without investment and engagement in travel demand measures (TDM) to stem traffic growth from new developments this may lead to increased traffic congestion. There is a risk that an ongoing rise in private vehicle use will not be reduced as a climate change mitigation action. The GPS on Land Transport will determine national funding priorities which may change the emphasis on how national funding is targeted towards TDM and mode shift.	High	Roads and infrastructure may deteriorate faster than expected through increased use. If Council is required to fund and undertake transport activities or works that are not expected or planned based on growth or unexpected extra use; this will put budgets under pressure, or the extent of activities or works that can be undertaken will be restricted by budget available. Council may not be able to contribute to wider outcomes to provide a more sustainable transport system that also uses alternative modes like walking, cycling and public transport to manage demands and contribute to climate change goals if there is a reduction or change in emphasis on the availability of national investment. This may require Council to advance or develop new roading projects to increase the capacity and safety of the road network to cater for traffic growth.	High

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Community						
Economic Development	The Council	Council's economic development role is to support entrepreneurship, provide infrastructure, facilitate workforce development, and collaborate with stakeholders to identify opportunities to grow the economy and to promote sustainable and inclusive economic growth.	There is a risk that economic development activities are poorly aligned to business and community needs and aspirations, and that opportunities to advance economic growth in the District are not realised.	Moderate	Council economic development activity does not provide a return on investment and the District misses out on opportunities for economic growth. Business and community sectors lose confidence in the Council which further diminishes opportunities for economic growth.	Low
Social Wellbeing	The Council	Council contributes to the overall quality of life and connectedness of the community by promoting social wellbeing through the provision of essential services, fostering connected and inclusive communities, ensuring public safety, and engaging with residents.	There is a risk that community services and facilities are poorly aligned to community needs and aspirations, and that opportunities to promote and enhance social wellbeing in the District are not realised.	Moderate	Council social wellbeing activity does not deliver the community outcomes it could (within the resources it allocated to this) and that the community misses out on opportunities to be successful, support each other, enjoy spending time together and feel a sense of belonging (note - this list of outcomes is from the high-level Community Outcomes in the current LTP).	Moderate
Levels of Service						
Community Outcomes	The Council	Council has reviewed the community outcomes and have confirmed that these are appropriate and no significant further changes are envisaged. Funding to deliver the LoS will therefore occur in accordance with the communities stated priorities.	Planning and service delivery is poorly aligned with community expectations	Low	Increase in customer dissatisfaction.	Low

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Community Expectations	The Council	As the district continues to grow and change it is expected that there will be incremental changes in levels of service. However the levels of service that have been developed for the LTP are considered to be appropriate.	There is a risk that there is a change in expectation for services and that the targeted level of service becomes inappropriate.	Moderate	If there is an increase or reduction in the expectation of service/level of service provision, the cost and delivery model may need to be revised.	Moderate
Legislation						
Change of Government	Government	that the government arising from the October 2023 general election will not substantiality change the requirements of this LTP	That significant changes will require rework of AMPs and the LTP.	High	Other operating environment or objectives of activities, or responsibilities of Council change. If legislative responsibilities change, it may increase or reduce the Council's expenditure and income and associated rate levels. e.g. Significant changes to funding levels and the AMP forecasts. Significant changes to contracts, staff arrangements and funding arrangements. Significant changes to external subsidy funding sources.	High
Sustainability	Department of Internal Affairs & Ministry for the Environment	Sustainability continues to be an overarching principle integrated within legislation and driven through Government reform such as the Future of Local Government Review and the reform of the Resource Management Act.	There is a risk that the range of Government legislation and policy does not consistently or coherently enable sustainability principles to be enacted by local government.	Low	Council could be required to interpret legislation and national direction when embedding sustainability within its decision-making processes, including making trade-offs between aspects of wellbeing.	Low

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Emissions Trading Scheme	The Council	It is assumed that any costs or actions required in regard to the Emissions Trading Scheme are adequately incorporated into the relevant AMPs, Sustainability Strategies and the LTP.	There is a risk that costs or actions have not adequately addressed.	Low	Any increase or decrease in costs or actions will need to be resourced differently to the approach planned.	Moderate
Increased focus on resilience	The Council	There will be an increase in Government encouragement to build resilience into assets, which will affect regional and local decision making and funding priorities.	There is a risk that Councils decisions making is not aligned with regional or national priorities, or that community infrastructure is not sufficiently resilient.	Low	Council is ineligible for funding assistance or communities are insufficiently served.	Moderate
Long Term Strategies	The Council	That there will be no significant change to the intent of the policies and strategies in place, but the funding available and implementation timetables may change National - includes: Government Policy Statement on Land Transport Funding (GPS); Regional - includes: Regional Land Transport Plan, Greater Christchurch shared initiatives include: Mode Shift Plan, Travel Demand Strategy, Public Transport Futures Strategy Transport Statement; SDC strategies include: Walking and Cycling and Road Safety Strategy's, those identified in individual business cases.	There is a risk that national, regional and local priorities change or differ from the priorities identified by Council. Late timing and confirmation of the GPS can occur that cannot be properly integrated into Council LTP and transport planning. To meet its obligations to the Greater Christchurch Partnership, there is a risk that funding contributions will be required to support ongoing joint transport work, initiatives and outcomes that are yet to fully identified and budgeted for.	High	Incoming new Governments are expected to review previous or proposed drafts on the GPS for Land Transport to reflect their requirements. The timing of this in amongst Council LTP preparation can be problematic in trying to anticipate or adapt to any significant changes to national transport priorities and funding availability. Council transport programmes that do not integrate with this and NZTA, regional and Greater Christchurch transport outcomes and priorities are unlikely to attract national funding. This will require Council to assess its own priorities and approach to district transport requirements over the long term and fund accordingly.	High
Organisational						

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
No major adverse events	The Council	It assumed that there will be no major impact from an adverse event, should one occur during the period covered by the LTP, for example, earthquake, pandemic or significant flood. While events may occur at any time, Council's planning will focus on operational resilience and Emergency Management.	There is a risk that a major adverse event will occur and result in damage to assets and additional costs to the Council.	High	Any major adverse event will have a significant impact on the Council and the community. The Council seeks to mitigate this risk through its Civil Defence, Risk Management and Insurance Policies.	High
Significance Policy	The Council	That the amendments to Council's Significance and Engagement Policy, including the identification of strategic assets will remain unchanged until water reforms are progressed in 2026	There is a risk that other activities will become more prominent and a desire for more comprehensive planning for those activities emerges as the focus shifts from water services.	Low	Council priorities and the approach to engagement are misaligned.	Moderate
Environmental wellbeing	Ministry for the Environment	Increasing emphasis is placed on environmental wellbeing in legislation and national direction, in part through greater integration of te ao Māori concepts as a response to Te Tiriti obligations e.g. te mana o te wai for water-related legislation and reform, te mana o te taiao through the Aotearoa New Zealand Biodiversity Strategy 2020 and NPS Indigenous Biodiversity, and the protection of productive soils under the NPS Highly Productive Land.	There is a risk that the range of Government legislation and policy does not consistently or coherently enable environmental wellbeing objectives to be enacted by local government.	Low	Council could be required to interpret legislation and national direction when considering environmental wellbeing objectives within its decision-making processes, including making trade-offs with other aspects of wellbeing.	Low

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Māori role in decision-making and iwi expectations	The Council; Maharani; Iwi Management Plan	Council will foster relationship with Māori and iwi as community members and in doing so will give effect to formal agreements between Council and Mahaanui and local rūnanga and give effect to the principles of Te Ture Whenua Māori Act 1993.	There is a risk that objectives differ and there are insufficient consultation and communication mechanisms in place.	Moderate	Initiatives are delayed, poorly conceived, poorly implemented and not supported. Our partners disengage with council and our engagement processes. Council action is culturally insensitive and causes offence	High
LGA Reform	Taituara	No substantial policy changes will occur from Future of Local Government Reform Programme.	There is a risk that amalgamation of Councils (in whole or part) is initiated.	Moderat	Significant changes will occur to Council's planning and operations, potentially the existence of Selwyn District as an individual entity.	High
Implementation						
Supply Chain Risk	The Council	Planning and programmes will be adequately funded from LTP budgets.	Responsibilities and costs change beyond the level expected. Timeline impacts and potential increased costs as a result if supply chains continue to experience delays.	Low	Expenditure is greater than forecast or services are reduced. Projects take longer than originally planned, delaying the delivery of services.	High
Timely Property acquisition for projects	The Council	Council will be in a position to acquire land as required within timeframe that enable project to progress as planned.	Expenditure is greater than forecast or services are reduced. Projects take longer than originally planned, delaying the delivery of services.	Moderate	Delays in land acquisition may affect the delivery of projects and result in additional costs or necessitate redesign.	High

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Resource and Building Consents for council works	The Council	Consents will continue to be able to be processed in statutory timeframes.	There is a risk that the consent is delayed or that consent will not be obtained for the Council projects. If consenting timeframes are not met there is a risk the Council will lose its building consent authority accreditation status which would impact on operational and financial functions.	Moderate	If consent conditions change, expenditure may increase to comply with the conditions and this may have an impact on rate levels. If consents cannot be obtained for planned projects, the project may be delayed or may not go ahead.	Moderate
Climate Change						
Climate change - mitigation (emissions reduction)	The Council	Selwyn will be part of Greater Christchurch tier one VKT reduction plan, this will put a priority on projects that aim to reduce vehicle use. There will be an impact of reducing Council's Carbon Credit balance through Council's disinvesting or harvesting forestry.	Planning may be undertaken that is unnecessary if Selwyn is excluded from the tier 1 identification. There is a risk national and/or regional collaborative VKT planning initiatives are discontinued or halted based on changes to the GPS on Land Transport	Moderate	Costs and resources are unnecessarily applied. Council may not be able to meet its or the communities expectations on reducing emissions.	High

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Climate change-driven legislation and national direction - Climate-related Risk Disclosures	XRB and LGFA	Councils will be required to supply the LGFA with climate-related risk disclosures information from 2023 to enable LGFA to meet its legal obligations under the Financial Sector (Climate-related Disclosures and Other Matters) Amendment Act 2021, and/or the obligations under the act will be expanded to directly include local government.	There is a risk that Council will not be able to supply the LGFA with the full information required due to insufficient data being held by Council and/or required of third parties through procurement processes.	Low	Insufficient information provided to the LGFA could reduce the reputation of Council with the LGFA and may impact Council's ability to access future finance at preferential rates through the LGFA.	Moderate
Climate change-driven legislation and national direction - GPS Land Transport	MoT - National VKT Reduction Plan	The 2023 GPS on Land Transport will reflect the direction set out in the national VKT Reduction Plan to reduce light fleet trips and car travel by 20% by 2035 in order to reduce the carbon emissions from the transport sector in line with the Emissions Reduction Plan.	There is a risk that the regional objectives and targets for VKT reduction will impact traditional land use and growth aspirations or will not be met (achievability/delivery capacity). There is a risk that traditional transport investment programmes will not be funded by the Crown to the same levels where they would conflict with VKT reduction objectives.	High	Council may need to consider and adapt its transport and land use approaches in order to better align with national direction and associated Crown funding streams. Alternately this may require Council to alter and fund outcomes aligned with its and the communities expectations further to national direction and crown funding availability.	High

Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Climate change-driven legislation and national direction - National Emissions Reduction and Adaptation Plans	Ministry for the Environment	Implementation of actions within National Emissions Reduction and Adaptation Plans will have consequences for Council functions and operations. Access to government and government agency funding will increasingly be tied to alignment with Government climate change objectives and goals.	There is a risk that Council strategies, plans and projects do not adequately incorporate measures to align with the ERP and NAP in a timely manner, leading to reduce Crown funding and collaboration opportunities.	Low	Any reduced Crown funding due to Council service and project delivery being misaligned to ERP and NAP objectives could increase costs borne by local ratepayers or result in work being deferred or cancelled. Should a new post-election Government alter ERP and NAP objectives and obligations on local government this could require reworking of Council's climate action measures and Crown funding considerations.	Moderate
Impacts of Climate Change	The Council	Changes in the climate in Selwyn District will generally follow recognised publications as reported by Aqualinc (2023). This includes: - Warmer Temperatures -An increase in extreme rainfall events -Sea level rise affecting Te -Waihora, land drainage systems and coastal communities and infrastructure.	Despite forecasts, adaptation and mitigation strategies there is risk of extreme events which cannot be predicted.	Moderate	Council priorities and Budgets may need to be redirected to address any unforeseen risks and issues, climate changes are likely to be adopted to as part of future LTPs if the assumption is wrong.	Moderate
Climate change – increased costs of business	The Council	The cost of goods and services will increase through the inclusion of the cost of carbon and the application of the ETS across the supply chain. This is expected to increase beyond the typical inflation changes.	Cost may increase at a higher or lower rate of change.	Moderate	Council's estimates are incorrect, if costs increase rapidly this will affect the ability to undertake operations or project work.	Moderate

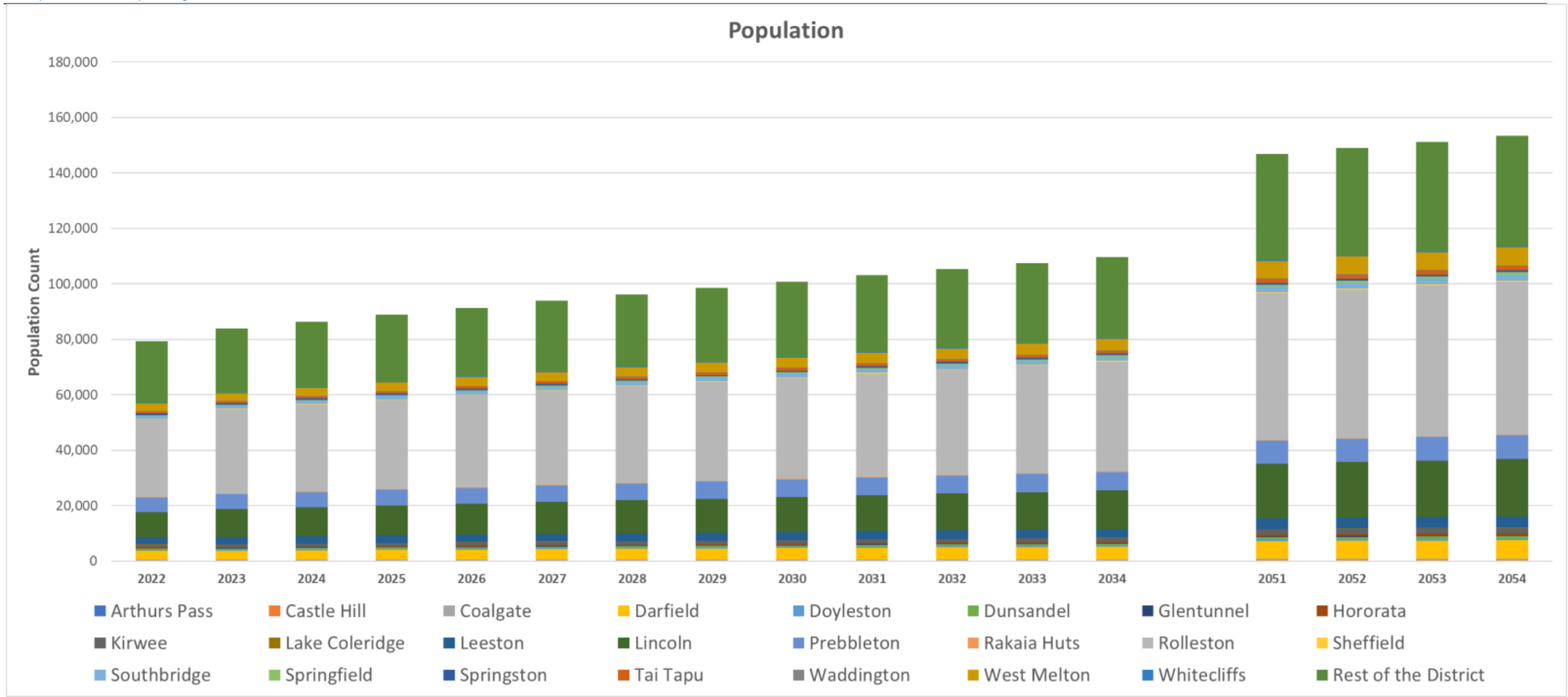
Assumption area	Source of Information	Stated Assumption	Risk	Uncertainty	Potential Impact/Consequence if Assumption Wrong	Consequence
Climate change – regulation change	The Council	There will be change in the regulatory framework in the LTP cycle. This will impact council operations (e.g. building control, operation of infrastructure, financial and non-financial reporting) and planning (including emissions reduction through resource and transportation planning). Managed retreat will be considered as a climate change adaptation option where community and infrastructure resilience prevail.	Changes are implemented more rapidly than expected, affecting planning and programmes or work. There may be a transfer of responsibility to or from Council across a range of legislation.	Moderate	Council may become responsible for actions not anticipated at this stage.	Low

Table 0.6: Inflation (Cumulative) Forecasts as produced by BERL for Local Government Use (August 2023)

2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31	2031/32	2032/33	2033/34	2034/35 – 2038/39	2039/40 – 2043/44	2044/45 – 2048/49	2049/50 – 2053/54
4.0%	7.2%	9.3%	11.4%	13.5%	15.7%	17.8%	20.0%	22.2%	24.3%	46.3%	68.3%	90.3%	112.3%

Table 0.7: Populations Forecasts

	Population																
Township	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2051**	**2052**	**2053**	**2054**
Arthurs Pass	45	49	51	53	54	56	57	58	59	61	62	62	63	67	67	68	68
Castle Hill	49	64	70	76	82	87	92	96	101	105	109	113	117	184	188	192	196
Coalgate	384	390	399	408	416	425	433	442	451	459	468	477	483	600	607	614	621
Darfield	3120	3224	3350	3476	3603	3729	3841	3954	4067	4179	4287	4395	4505	6365	6474	6584	6693
Doyleston	334	337	344	351	358	365	371	378	384	390	396	402	407	487	491	496	501
Dunsandel	491	497	513	529	546	562	578	593	608	624	639	654	669	915	930	944	958
Glentunnel	189	192	195	199	203	207	210	214	218	221	225	229	232	281	284	287	290
Hororata	254	259	276	293	310	326	343	360	376	393	409	426	441	697	712	727	742
Kirwee	1008	1047	1081	1114	1147	1180	1212	1244	1277	1309	1341	1372	1397	1817	1842	1867	1891
Lake Coleridge	74	82	85	89	92	95	97	100	102	104	106	107	108	121	121	122	123
Leeston	2490	2515	2570	2626	2681	2737	2784	2831	2878	2925	2969	3013	3059	3843	3889	3936	3982
Lincoln	9180	10060	10438	10817	11195	11574	11922	12269	12617	12964	13302	13639	13978	19751	20090	20430	20770
Prebbleton	5260	5392	5523	5655	5786	5917	6032	6148	6263	6379	6489	6599	6691	8250	8342	8433	8525
Rakaia Huts	185	186	187	188	189	190	191	191	192	193	194	195	195	203	203	204	204
Rolleston	28000	30465	31363	32261	33160	34058	34861	35665	36468	37271	38043	38814	39597	52902	53685	54467	55250
Sheffield	217	220	228	235	242	250	257	264	271	278	286	293	299	413	420	427	433
Southbridge	1058	1075	1111	1147	1184	1220	1255	1290	1325	1361	1396	1430	1460	1956	1985	2015	2044
Springfield	370	377	393	410	426	443	459	475	491	507	523	540	555	813	829	844	859
Springston	472	484	490	496	502	508	513	519	524	530	535	541	545	613	617	621	625
Tai Tapu	717	747	777	806	835	864	892	919	946	974	1000	1027	1053	1485	1510	1536	1561
Waddington	150	152	155	157	160	163	166	168	171	174	176	179	181	223	225	227	230
West Melton	2640	2744	2865	2986	3108	3229	3343	3458	3572	3687	3799	3912	4036	6152	6277	6401	6525
Whitecliffs	226	230	235	241	246	252	257	263	268	274	279	285	289	364	369	373	378
Rest of the District	22355	22993	23611	24230	24849	25468	26026	26584	27142	27700	28237	28775	29304	38303	38833	39362	39891
Total District	79270	83780	86311	88842	91373	93904	96193	98483	100772	103061	105270	107479	109664	146806	148990	151175	153360


Population
Population Count
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2051
2052
2053
2054
Arthurs Pass
Castle Hill
Coalgate
Darfield
Doyleston
Dunsandel
Glentunnel
Hororata
Kirwee
Lake Coleridge
Leeston
Lincoln
Prebbleton
Rakaia Huts
Rolleston
Sheffield
Southbridge
Springfield
Springston
Tai Tapu
Waddington
West Melton
Whitecliffs
Rest of the District

Summary of Services

Selwyn District covers a diverse area, including rapidly growing urban centres on the periphery of Christchurch, small rural towns, extensive agricultural land across the Canterbury Plains and small alpine settlements. While the transportation activity is managed across the district as an integrated network, planning processes take into account the diversity of needs from different communities within the District - both now and into the future.

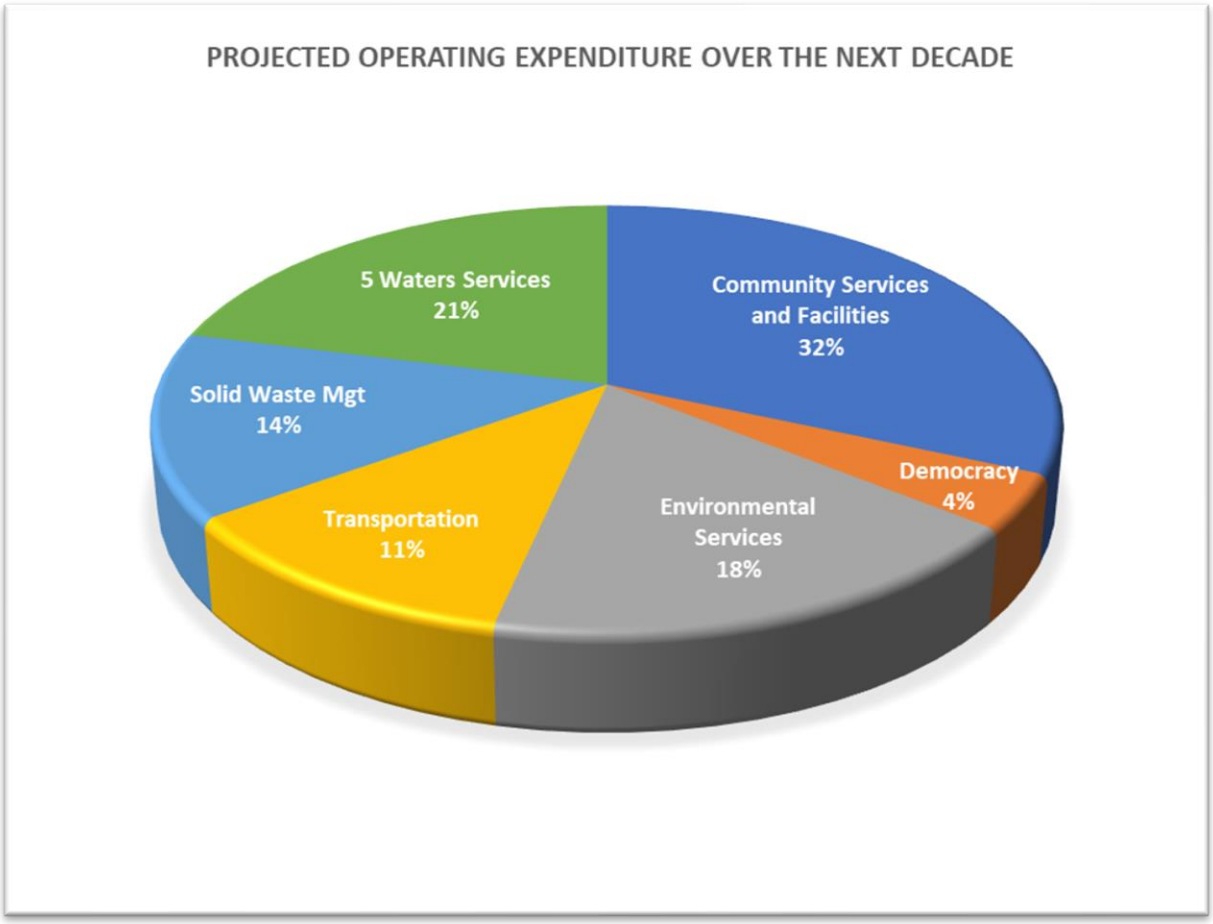
Guidelines prepared by the National Asset Management Steering Group (NAMS) to assist with the development of Levels of Service place emphasis on the need to identify levels of service that are appropriate to the communities. This needs to be balanced against the ONRC Performance Measures which seek to strike consistency around Customer Levels of Service across New Zealand.

Assets Included in this Plan

The inventory of the Transportation services and assets owned and/or managed by Council is included in Section 4 and Section 9a of the AMP.

Transportation is a significant service for Council; with annual operating expenditure for our District's transport network representing over 11% of Council's overall annual operating expenditure over the next decade.

Figure 0-1: Annual Operating Expenditure of Activities



Source: Selwyn Long Term Plan (2021-2031)

Stakeholders

Key Stakeholders – Interests and Engagement

Key stakeholders are those who have significant specific involvement with the assets and/or the service facilitated by the assets and describes their particular main interests. In particular 'Public Service providers' include schools, military organisations, corrections facilities, hospitals, and other government organisations. 'Asset Managers' are those District Council staff (engineers and others) whose responsibility it is to manage the services made possible by the assets covered in this AMP, the assets being transportation.

The key stakeholders and the outcomes that they require for the Transportation Activity are detailed in Table 0.8 below.

Different issues will require different levels of engagement; from a broad approach to specific and limited to those directly affected. As a guide, this is indicated under Consultation Range (Broad ***, Moderate **, Limited *).

Headline 2.4:
Council's key stakeholders are its community, road transport and NZTA

Table 0.8: Key Stakeholders

Stakeholders – External & National	Stakeholders Main Interests	Engagement Range	Engagement Methods
Accident Compensation Commission		*	Correspondence
Age Concern	Transport Sector groups	*	Occasional correspondence
Audit NZ	Legislative responsibilities as defined in Legislation	*	Engaged to ensure compliance – regular and specific contact
Automobile Association	Transport Sector groups	*	Regular contact at road safety co-ordination meetings.
Cycle Advocates Network (CAN)	Transport Sector groups	*	Occasional correspondence
Department of Conservation	Enhance conservation values	*	
Energy Conservation Authority	Transport Sector groups	*	Occasional correspondence
Federated Farmers	Transport Sector groups	*	Correspondence
Local Government New Zealand/ Central Government	Ensure that Local Government Act is complied with (via Auditor-General) Enhance value of decision making process	*	
Ministry Of Education	Safety for school children (urban and rural)	*	Correspondence
Ministry for the Environment		*	
Ministry of Health		*	
Ministry Of Transport		**	

Stakeholders – External & National	Stakeholders Main Interests	Engagement Range	Engagement Methods
New Zealand Police	Road Safety Partner	*	On-going liaison and appropriate formal contact where required. Police representatives are part of the Road Safety Coordinating Committee
New Zealand Transport Agency	Legislative responsibilities as defined in Legislation, Funding Partner	**	Continual and frequent informal contact and appropriate formal contact where required
New Zealand Trucking Association	Transport Sector groups	*	Occasional correspondence
KiwiRail (NZ Railways Corporation)	Transport system provider There is one railway operator in the District, KiwiRail	*	Close liaison on level-crossing maintenance. Occasional correspondence on other matters
Telecom and other telecommunications companies	Utility operator	*	Close liaison. Full procedures to be developed reflecting the 2009 NZUAG "Code of Practice for Working in the Road"
The Farm Forestry Association	Transport Sector groups	*	Occasional correspondence
The Forestry Owners Association	Transport Sector groups	*	Occasional correspondence
The Heavy Haulage Association	Transport Sector groups	*	Regular contact at road safety co-ordination meetings

Stakeholders – External & Regional	Stakeholders Main Interests	Engagement Range	Engagement Methods
Neighbouring Authorities with road connections • Department of Conservation • Christchurch City Council • Waimakariri District Council	Neighbouring Road Controlling Authorities: DOC is a road controlling authority within Selwyn District Ashburton District and SDC are joined by SH75 at the Rakaia Gorge and SH1 at Rakaia Christchurch City and SDC share a number of boundary roads between the two authorities and one bridge that straddles the boundary Waimakariri District and SDC are joined at the Waimakariri Gorge Bridge (local road)	**	On-going contact with relevant staff. Formal liaison of elected representatives at CEO levels Christchurch City Council: An informal agreement has been reached, for bridge maintenance and management of the bridge with responsibility on the Christchurch City Council. Waimakariri District Council: An informal agreement has been reached, for maintenance and management of the bridge which places responsibility on the Selwyn District Council

Stakeholders – External & Regional	Stakeholders Main Interests	Engagement Range	Engagement Methods
Neighbouring Authorities with no road connections • Ashburton District Council • Grey District Council • Hurunui District Council • Westland District Council	Neighbouring Road Controlling Authorities:	*	Regular contact with relevant staff. Formal liaison of elected representatives at CEO levels
Canterbury District Health Board	Community Health	*	Occasional correspondence
Canterbury Earthquake Recovery Authority	Infrastructure and community reconstruction	***	
Canterbury Regional Council	Resource use is sustainable as directed in the RMA 1991	**	
Canterbury Regional Land Transport Committee	LTMA 2003 role	**	Correspondence, meeting attendance, submissions
Central Plains Water Trust	Development of irrigation facilities	**	Correspondence Meetings to coordinate work programmes
Greater Christchurch Urban Partners (Waimakariri DC, Christchurch CC and ECan)	Partnership in urban growth over 35 year period	**	
Living Streets Canterbury	Urban design	*	Correspondence
New Zealand Transport Agency (state highway division)	The state highway division of the NZTA is the State Highway Authority. There are two State Highways in the District, SH1 and SH73. The nature of the special relationship revolves around management of the network at the points at which they meet; i.e. road intersections	**	Regular personal contact and appropriate formal contact where required Delegations – streetlights, street sweeping etc.
Orion NZ Ltd	Utility operator		Close liaison. Full procedures to be developed reflecting the 2009 NZUAG "Code of Practice for Working in the Road"
The Canterbury Owner Drivers Association	Transport Sector groups		Regular contact at road safety co-ordination meetings.

Stakeholders – External & Local	Stakeholders Main Interests	Engagement Range	Engagement Methods
Selwyn District Council customers and resident population	Reliable transportation services at an affordable cost	***	
All commercial and private road users including: • Pedestrians • Cyclists • Motorists • Heavy-vehicle operators • Equestrians • Drovers	Reliable transportation services at an affordable cost that considers their favoured mode of transport	***	
BUG-R (Bicycle User Group – Rolleston)	Transport Sector groups		
Christchurch to Little River Rail Trail Trust	Cycle trail development	*	
Consultants and Contractors	Commercial opportunities	*	
Local Businesses/Industries	Transportation services to suit commercial needs and expansion, at affordable cost	**	
Local Iwi/Ngai Tahu Te Runanga o Ngai Tahu Tuahuriri Runanga	Enhance waterways and Te Waihora for Mahinga kai, cultural/spiritual values	*	Corporate level consultation
Schools	Safety for school children (urban and rural)	*	Correspondence Programmes
SPOKES	Transport Sector groups	*	

Stakeholders - Internal	Stakeholders Main Interests	Consultation Range	Engagement Methods
Selwyn District Council (overall)	Maximise the four aspects of well-being through provision of the Transportation Activity	***	
Asset Managers	As above plus policy, planning and implementation of infrastructure and service management activities (e.g. operations, demand management, maintenance, construction). Safety. Effective corporate support for decision-making, service management, procurement, finance, communications, I.T., staff and other resources	*	

Stakeholders - Internal	Stakeholders Main Interests	Consultation Range	Engagement Methods
Contract Managers	Responsible for implementation of infrastructure and service management activities	**	
Corporate Services Manager Financial Manager	Proper accounting for assets and for services consumed by asset management activities	**	
Council committees	As per delegated authority from Council	*	
Customer Services	Systems which minimise and resolve complaints/enquiries about service	*	
Elected Officials	Owner of assets, responsible for sustainable service levels under the LGA 2000	***	
Executive	Compliance with regulations, service reliability, quality and economy	***	
Information Services	Clarity of technical and budget requirements for systems and support	*	
Planners	AMP support for Long-term Community Plans. Infrastructure support for current/future district activities	*	

Large or Significant Users

Within the Transportation activity there are a number of large or significant users that need to be considered as they represent a statutory or regulatory position, or the interests of a portion of the community. These have been listed above.

Relationships with Other Bodies and Organisations

2.1.1.9 *NZTA – Funding/Investment Partner*

NZTA is a funding partner for most of Council's road maintenance, renewals and new works and is therefore a significant stakeholder.

2.1.1.10 *NZTA - State Highway Division*

Council also operates the street lighting networks located on State Highways under delegation from NZTA.

2.1.1.11 *Canterbury Regional Council - Environment Canterbury (ECan)*

Environment Canterbury has statutory responsibility for regional transportation planning and public transport.

The areas of responsibility include:

- Regional Transport Planning.
- Regional Transport Committee.
- Public Transport.
- Natural Resource Management.

Regional Transport Planning

Environment Canterbury has oversight of the development of the Regional Land Transport Plan (RLTP) and coordination with the suite of documents that align with the RLTP. These are defined in the Land Transport Management Act 2003 and discussed in Section 3.3.

Regional Transport Committee

The Regional Transport Committee (RTC) is established under the auspices of the Land Transport Act 2003 (as amended). It is responsible for preparing the Regional Land Transport Plan, and for advising the Regional Council on strategic land transport planning and funding matters.

The RTC typically meets on a quarterly basis, but more frequently if its workload necessitates.

The committee comprises:

- An elected member from each of the following Councils:
  - Kaikoura
  - Hurunui
  - Waimakariri
  - Christchurch
  - Selwyn
  - Ashburton
  - Timaru
  - Waimate
  - Mackenzie
- Two Environment Canterbury elected members.
- A representative from the New Zealand Transport Agency.
- Elected 'community representatives' with expertise in access & mobility, safety & personal security, public health, economic development, environmental sustainability and cultural interests.

The RTC is responsible for coordinating the development of the Regional Land Transport Programme.

Public Transport

Environment Canterbury is responsible for the provision of public transport within the Canterbury region. This includes Greater Christchurch and the Metro Strategy. (Refer 3.3.2.4).

Natural Resource Management

Environment Canterbury is delegated responsibility for management of the water resources within the District and achieves this through Regional Policies Plans. These plans provide a framework for the sustainable environmental management of Canterbury's physical and natural resources. The change of use of land, taking of water, diverting of water, disposal of water, and discharge to air, require resource consents. Therefore SDC must liaise with Environment Canterbury in obtaining and complying with consents in relation to the Transportation Activity. Other roles that involve interaction between Council and ECan are outlined in the Strategic Plan.

2.1.1.12 *Christchurch City Council, Waimakariri District Council*

Christchurch City lies on the eastern end of the District's Northern boundary. There are a number of boundary roads between the two authorities and one bridge that straddles the boundary.

Waimakariri and Selwyn District are joined at the Waimakariri Gorge Bridge.

The following table describes the responsibilities of Selwyn District council and neighbouring Road Controlling Authorities in regards to cross-boundary assets.

Item	Location	Managed by	Contract Scope	
			Roads	Streetlights
State Highways	Throughout Selwyn District	NZTA	Urban street/kerb & channel/sump cleaning included in Contract 1420	Rural and urban lighting included in Contract 1463
Waimakariri Gorge Road	Waimakariri District Council Boundary	Selwyn District Council	Bridge Maintenance included in Contract 1420	Any lighting included in Contract 1463
Hodgens Road (Springs Rd to Fountains Rd) Longstaffs Road (Whincops Rd to Hodgens Rd) Dawsons Road (SH73 to Jones Rd) Marshs Road (SH1 to Springs Rd) Springs Road (Marshs Rd to Hodgens Rd) Whincops Road (Longstaffs Rd to Knights Stream)	Christchurch City Council Boundary	Selwyn District Council	Road and bridge maintenance included from Contract 1420	Any lighting included in Contract 1463
Streetlight on Local Roads (if any): Sabys Road Summit Road Chattertons Road (McLeans Island Rd to SH73) Early Valley Road Jones Road (Dawsons Rd to Bailey St) Waterloo Road (Barters Rd to Bicknor St)	Christchurch City Council Boundary	Christchurch City Council	Road and bridge maintenance excluded from Contract 1420	Any lighting excluded from Contract 1463

2.1.1.13 *Greater Christchurch Urban Development Strategy Partners*

Selwyn District Council has a close relationship with the Christchurch City Council (CCC) and Waimakariri District Council (WDC), supported by the Greater Christchurch Urban Development Strategy (UDS), now called the Greater Christchurch Partnership.

The Strategy is detailed further under Section 3 Regional Strategies and Plans.

2.1.1.14 *Mana Whenua - Kaitiakitanga, tikanga*

Ngāi Tahu descendants, and the hapū of Ngāi Te Ruahikihiki and Ngāi Tūāhuriri have resided in the district for over 40 generations. The two hapū are acknowledged as the primary kaitiaki and puna mātauraka, the traditional knowledge holders, on behalf of Ngāi Tahu, for the district.

Selwyn District falls within the takiwā of Ngāi Te Ruahikihiki and Ngāi Tūāhuriri. The Council acknowledges their status as mana whenua and that the two hapū are represented formally by Te Taumutu Rūnanga and Ngāi Tūāhuriri Rūnanga and recognises the role of mana whenua as the kaitiaki, holders of customary tribal authority over land, water, and environment. The expression of these relationships is set out in various iwi management plans and relationship agreements with Council and other entities.

Council recognises its role as partner with mana whenua through Te Tiriti o Waitangi | Treaty of Waitangi and any direct relationship agreements with rūnaka. Engagement and our relationships with rūnaka are supported by our Te Rautaki Tikaka Rua | Bi-cultural Strategy, and the four pou of:

- Te Takata | Our People - Our people are culturally competent and positive role models for our treaty-based future.
- Kā mahi | Our Work - Our systems, processes and institutional culture actively empowers and embeds bicultural practices.
- Kā Honoka | Our Relationships - Deep relationships with mana whenua drive our treaty-based partnership.
- He Huarahi Hou | A New Way - We walk confidently into the future looking backwards – we reflect, learn, adapt, innovate.

Council is committed to improving its cultural competency and relationships, including through partnership-based participation in decision making and key projects, which will be a key component of infrastructure planning moving forward.

Issues

No issues have been identified that are not addressed or mentioned elsewhere.

Improvement Plan items

IP 2.6 Review comments on Council hierarchy once ONF fully implemented, reference District Plan hierarchy.

3.0 STRATEGY, PLANS, LEGISLATION AND PROCEDURES

Council's operation and delivery of all activities is constrained and shaped by legislation, statutory plans, processes, and other documents. This section describes the combination of directives in place and their impact on transportation in the District.

Contents

3.1 Role of Strategies and Plans

Central Government provide a high level of direction and regulation into the Transportation sector through Strategies, Plans, Policy Statements and Legislation.

Regionally there is a suite of Plans and Strategies, many of which link with the Greater Christchurch Partnership (previously called the Urban Development Strategy (UDS)).

Council has developed a broad range of documents including strategies to define the broad scope and direction of its activities. Once adopted by Council, no process or action should be inconsistent with it.

3.2 Government and Industry Direction

In providing transport services to the community, Council needs to be cognisant of Central Government and Industry direction for 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.

3.3 National Strategies and Plans

National Infrastructure Strategy	Rautaki Hanganga o Aotearoa – New Zealand Infrastructure Strategy 2022-2052, New Zealand's first national infrastructure strategy refers to the current position of New Zealand society, environment and infrastructure as facing a historic period of deep and intergenerational change. This recognises that many of the challenges we are facing are new, that they will impact all parts of our society and the efforts must be sustained intergenerationally. The national infrastructure strategy a exists to look across these connected networks of infrastructure in a holistic and coordinated way and identifies five objectives to achieve the vision of a thriving New Zealand, of which our Transportation activity contributes: 1. Enabling a net-zero carbon emissions Aotearoa through rapid development of clean energy and reducing the carbon emissions from infrastructure. 2. Supporting towns and regions to flourish through better physical and digital connectivity and freight and supply chains. 3. Building attractive and inclusive cities that respond to population growth, unaffordable housing and traffic congestion through better long-term planning, pricing and good public transport. 4. Strengthening resilience to shocks and stresses by taking a coordinated and planned approach to risks based on good-quality information. As part of these objectives, we need to strengthen partnerships with and unlock opportunities for Māori.
Road to Zero	Road to Zero is the government's vision to guide improvements in road safety from 2020 to 2030. The strategy's vision is for New Zealand to be a country where no one is killed or seriously injured in road crashes. This means that no death or serious injury while travelling on our roads is acceptable. Our activity contributes to achievement of this vision, within an integrated and multi-approach road safety planning. Road to Zero is discussed in more detail in **Section 5 – Road Safety.**
Road Safety Guides	There is a range of guidance prepared by NZTA under the "Safe System" approach. These include: • High Risk Rural Roads Guide (HRRG) • High Risk Intersection Guide • Safer Journeys for Motorcycling on NZ Roads • Safer Journeys for Rural Schools
NZ Disability Strategy	As a signatory to the United Nations Convention on the Rights of Persons with Disabilities, the Office for Disability Issues has developed the New Zealand Disability Strategy to guide the work of government agencies, organisations and individuals on disability issues. The vision of the New Zealand Disability Strategy is that New Zealand is a non-disabling society - a place where disabled people have an equal opportunity to achieve their goals and aspirations, and all of New Zealand works together to make this happen.

Government Policy Statement on Land Transport

The Land Transport Management Act (LTMA 2003) requires the Minister of Transport to issue the Government Policy Statement on Land Transport (GPS) every three years. The GPS sets out the government's priorities for expenditure from the National Land Transport Fund over a 10-year period, and how funding should be allocated. The Government Policy Statement (GPS) on land transport is central to investment decisions across the land transport system, with the themes, objectives and priorities guiding development of levels of service within the Transportation activity.

With a recent change to Government, and March 2024 release of the Draft GPS our planning crosses. We , and acknowledges the following GPSs priorities as:

GPS 2021	Draft GPS 2023*	Draft GPS 2024
• Safety, • Better Transport Options, • Improving Freight Connections, • Climate Change.	• Maintaining & operating the system, • Increasing resilience, • Reducing emissions, • Safety, • Integrated freight system, • Sustainable urban and regional development.	Priorities which this GPS will deliver against: • Economic Growth and Productivity • Increased maintenance and resilience • Safety • Value for money.

- GPS in place when draft submission to NZTA was made

Arataki

Arataki (version 2) is the Agency's 30-year view of what is needed to deliver on the government's current priorities and long-term objectives for the land transport system at a national and regional level. This was developed in 2023, an update is anticipated to follow the release of the GPS 2024.

National Policy Statement for Urban Development Capacity

The NPS-UD 2020 requires councils to plan well for growth and ensure a well-functioning urban environment for all people, communities and future generations This includes:

- ensuring urban development occurs in a way that takes into account the principles of the Treaty of Waitangi (te Tiriti o Waitangi).
- ensuring that plans make room for growth both 'up' and 'out', and that rules are not unnecessarily constraining growth.
- developing, monitoring and maintaining an evidence base about demand, supply and prices for housing and land to inform planning decisions.
- aligning and coordinating planning across urban areas.

The NPS-UD 2020 contains objectives and policies that councils must give effect to in their resource management decisions. The objectives and high-level policies apply to all councils that have all or part of an urban environment within their district or region. However, some policies apply only to tier 1 or tier 2 councils. Selwyn District Council is included within the urban environment of Christchurch (Tier 1) for the purposes of the NPS-UD 2020. The NPS-UD is implemented through the Selwyn District Plan, including recent District Plan review. It has provided a pathway for unanticipated plan changes and intensification in the right locations.

3.4 Legislation and Regulations

3.4.1 Key Legislation – Implications of Asset Management

Legislation is established by Central Government and must be complied with at Local Government level. Significant legislation and regulations affecting the Transportation Activity are provided in Table 3.1.

Different legislation has different levels of impact on the Transportation Activity; this is indicated under Impact Range **(Broad ***, Moderate **, Limited *).**

Table 3.1: Legislation Impact on the Transportation Activity

Legislation & Regulation	Activity Impact
Building Act 2004	*
Canterbury Earthquake Recovery Act 2011/ Greater Christchurch Regeneration Act 2016	***
Civil Defence Emergency Management Act 2002	***
Climate Change Response Act 2002 and Climate Change Response (Zero Carbon) Amendment Act 2019	**
Energy Efficiency and Conservation Act 2000	*
Environmental Protection Authority Act 2011	*
Epidemic Preparedness Act 2006 (and amendments)	*
Fencing Act 1978	*
Health and Safety at Work Act 2015	***
Heritage New Zealand Pouhere Taonga Act 2014	*
Land Transport Management Act 2003	***
Land Transport Act 1989	***
Local Government Act 2002	***
Local Government Act 1974	**
Local Government Rating Act 2002	**
Local Government (Financial Reporting) Regulations 2011. Renamed to Local Government (Financial Reporting and Prudence) Regulations 2014	**
Ngai Tahu Claims Settlement Act 1998	*
Public Works Act 1981	*

Resource Management Act 1991 (and reform/changes to legislation)	**
Spatial Planning Act 2023	**
Telecommunications Act 1987	*
Transit New Zealand Act 1989	*
Utilities Access Act 2010	***
WorkSafe New Zealand Act 2013	**

Some legislation that has or is expected to have the most effect on the transportation activity (Broad/***) is described in greater detail below:

3.4.2 Greater Christchurch Regeneration Act 2016

The expiry of the Canterbury Earthquake Recovery Act 2011 (CER Act) on 18 April 2016 prompted the development of the Greater Christchurch Regeneration Act 2016 which came into force during April 2016. The primary focus of the CER Act was on recovery – where "Recovery" was defined as including restoration and enhancement.

The Greater Christchurch Regeneration Act establishes a new entity called Regenerate Christchurch. Jointly controlled by Christchurch City Council and the Crown, one of its objectives is to lead regeneration in Christchurch for the next five years. The new framework transfers more decision-making powers to Local Authorities and provides for greater public input.

3.4.3 Civil Defence Emergency Management (CDEM) Act 2002

Under the CDEM Act 2002 there is an expectation that Council's services will function at the best possible level and extent during and after an emergency, including no change from normal operation. Council has established planning and operational relationships with regional CDEM groups to deliver emergency management within Selwyn District boundaries.

The CDEM Act also identifies the responsibilities of Council as a lifeline utility provider ("an entity that provides a road network).

3.4.4 Health and Safety at Work Act (HSWA) 2015

The Health and Safety at Work Act 2015 (HSWA) is New Zealand's workplace health and safety law. The Act sets out the principles, duties, and rights in relation to workplace health and safety.

Under HSWA, a person conducting a business or undertaking (PCBU) must look after the health and safety of its workers and any other workers it influences or directs. The business or undertaking is also responsible for the health and safety of other people at risk from its work including customers, visitors, or the general public. This is called the 'primary duty of care.' The H&S approach is that our assets should be designed and maintained with safety and health in mind. All activities undertaken within the Transportation activity including maintenance and operations are required to meet the requirements of the HSWA.

A range of regulations will be developed as part of this HSWA. The HSWA requires identifying the risks associated with hazards and associated mitigation to reduce those risks.

3.4.5 Land Transport Management Act 2003

The purpose of this Act is to contribute to the national aim of achieving an integrated, safe, responsive and sustainable land transport system. It requires an integrated approach to land transport planning, management and funding with the intention of improving social and environmental responsibility and to allocate land transport funding in an effective and efficient manner.

The Act also sets out the requirement and processes for local authorities to obtain funding for roading construction and maintenance.

Under the Act, the RTC is responsible for assessing and prioritising proposed transportation activities across the region in relation to both national and regional outcomes and funding priorities.

3.4.6 Local Government Act (LGA) 2002

The Local Government Act 2002 defines the purpose of local government:

- to enable democratic local decision-making and action by, and on behalf of, communities, and
- to promote the social, economic, environmental, and cultural well-being of communities in the present and for the future.

The LGA sets out the powers and responsibilities of local authorities, and processes for decision making. In particular the requirement to prepare asset management plans (amongst other planning requirement) as the main method of demonstrating the LGA Schedule 10 requirements.

3.4.6 Land Transport Rule: Setting of Speed Limits 2020

The Rule, introduced in 2020, is the main driver of speed management planning. It improved efficiencies in the setting of speed limits by RCAs, empowering a holistic, network wide approach, a change from the focus on individual roads. This aligned, consistent approach, improves speed management planning and consultation. The new Government has made changes to the Rule 2020 and signalled an intention to replace Rule 2020 with a new Rule to be developed in 2024.

3.4.7 Standards, Codes of Practice and Guidelines

National environmental standards, design standards (AS/NZS ISO), Codes of Practice and Guidelines provide technical direction. National Standards must be complied with under the direction of relevant legislation.

3.4.7 National Environmental Standards

National environmental standards are regulations issued under the RMA 1991 (RMA). They prescribe technical standards, methods and other requirements for environmental matters. Region and Local

Councils must enforce these standards (or they can enforce stricter standards where the standard provides for this). In this way, national environmental standards ensure consistent minimum standards are maintained throughout all New Zealand's Regions and Districts.

3.4.7 AS/NZ Standards

Where possible, relevant AS/NZS standards are used as the basis for determining standards of design and construction. The Code for Subdivision and Development AS/NZS: 4404 is the principal document defining design requirements. New works within the urban areas are constructed in general accordance with NZS4404 Land Development and Subdivision Infrastructure which sets minimum standards.

A summary of key Asset Management standards and manuals are tabled below:

Table 3.2: Asset Management Standards & Manuals

Asset Management Standards
NAMS International Infrastructure Management Manual 2006
NAMS International Infrastructure Management Manual 2011
ISO 55000 International Standards for Asset Management 2014
PAS 55-1:2008 Asset Management (British Standards)
NAMS Developing Levels of Service and Performance Measures Guidelines 2007
NAMS Optimised Decision Making Guidelines 2004
NAMS Infrastructure Asset Valuation and Depreciation Guidelines 2006
NZWWA New Zealand Pipe Inspection Manual 2006
NZWWA The New Zealand Infrastructural Asset Grading Guidelines 1999

3.5 Regional and Greater Christchurch Policy Setting

Canterbury Regional Policy Statement

The Canterbury Regional Policy Statement provides an overview of the resource management issues in Canterbury, and the objectives, policies and methods to achieve integrated management of natural and physical resources, including directions for provisions in district and regional plans.

Canterbury Land and Water Regional Plan	The Land and Water Regional Plan identifies the resource management outcomes for managing Canterbury land and water resources, and identifies the policies and rules needed to achieve the objectives.
Greater Christchurch 2050 Plan	The Greater Christchurch 2050 Plan is intended to provide a strategy and plan to advance the intergenerational wellbeing of the people and place of Greater Christchurch. Decisions made through Greater Christchurch 2050 will help inform the development of Selwyn District Council's long-term work programmes and budgets and will help to reposition the urban area for a more prosperous, inclusive, sustainable and resilient future. The Greater Christchurch 2050 Plan is under development at the time of this AMP being written.
Greater Christchurch Urban Development Strategy	The Greater Christchurch Urban Development Strategy (UDS) is an ambitious plan for managing urban development that protects water, enhances open spaces, improves transport links, creates more liveable centres and manages sustainable population growth. The UDS provides the primary strategic direction for the Greater Christchurch area, including the location of future housing, development of social and retail activity centres, areas for new employment and integration with infrastructure networks. The UDS area includes the Springs and Selwyn Central Wards of the District.
Draft Greater Christchurch Spatial Plan	The UDS is supported by the draft Greater Christchurch Spatial Plan which provides a blueprint for how population and business growth will be accommodated in Greater Christchurch into the future, through targeted intensification in centres and along public transport corridors.
Greater Christchurch Transport Statement	The Greater Christchurch Transport Statement (GCTS) is an overarching framework for integrated transport planning and network development across Greater Christchurch, with a one network focus. The Statement focuses on the strategic links between key places within the Greater Christchurch area with a partner based commitment to looking ahead and working together to deliver better outcomes which build resilience, efficiency and reliability into the transport network, at the same time ensuring the community is provided with sustainable transport choices.

Canterbury Regional Climate Change Report	This report considers the effects of climate change on the environment, society and the economy of the Canterbury region. Predicted effects that are relevant to this activity include: changes to indigenous biodiversity and ecosystems; distribution shift of pest species (plants and animals); more extreme weather events; competition for scarce water resources; environmental deterioration effect on primary production with consequent implication for the District economy.
Canterbury Regional Land Transport Plan	The Canterbury Regional Land Transport Plan (RLTP) is a combination of the programmes developed by the road controlling authorities in Canterbury, and is created to reflect both the problems and needs of the districts within Canterbury and the outcomes set out in the GPS. The Canterbury RLTP sets out to guide future investment and planning in the land transport system, and outlines the current state, the challenges, and the priorities for future investment. The plan sets out: • the context in which the transport system operates, • the vision and strategic objectives for the transport system, • the priorities for investment – key areas where further investment is required in order to achieve the vision and objectives, and • A prioritised regional programme of transport activities. Problem statements are established in the Canterbury RLTP, and an investment logic map is used to show the benefits that are realised in addressing the problems, and how these problems and benefits align with the investment outcomes identified in the plan. The investment outcomes are prioritised in line with the GPS.
Canterbury Regional Public Transport Plan	The Canterbury Regional Public Transport Plan is a legislative document that sets out Environment Canterbury's objectives and policies for delivering public transport in Canterbury. It describes the services that the Regional Council proposes to provide in the future to meet the needs of new and existing customers and the policies which those services will operate by. The Plan also identifies key partnerships with operators and territorial authorities in Canterbury.
Greater Christchurch Public Transport Futures	The Interim Mass Rapid Transport Report explores how Mass Rapid Transport (MRT) could work as Greater Christchurch grows over the next 30 years to test the suitability of the selected investment objectives and associated performance measures to adequately inform decision makers on the impact that rapid transit might have against wider policy direction for the region. The Report assesses three scenarios: the use of the existing heavy rail corridor, a street running scenario with limited stops (generally following motorways) and a street running scenario with frequent stops along urban arterials, using either buses or light rail. The analysis forecasts land-use by 2048 will generate sufficient demand to warrant further investigation into some form of high-capacity transit system along the northern and south-western corridors within Greater Christchurch. These scenarios indicate the future direction of mass rapid transport within Greater Christchurch and offers the opportunity to align future public transport infrastructure provision, in alignment with the Regional Council to support and implement this future state.

Regional Mode Shift Plan: Greater Christchurch 2020	The Regional Mode Shift Plan, led by Waka Kotahi highlights opportunities where mode shift can be initiated through integrated planning and design with urban form and public transport to improve its efficiency and appeal. A key issue of this plan is climate change, with a recognition that a significant portion of greenhouse gas (GHG) emissions for Greater Christchurch are attributed to land transport, and that historic land-use patterns and investment have resulted in sprawling urban environments. The plan highlights opportunities where mode shift can be initiated through integrated planning and design with urban form and public transport to improve efficiency and usage of alternative modes of travel.
Greater Christchurch Freight Study	The Greater Christchurch Freight Study was undertaken in 2014 in response to a number of Greater Christchurch Transport Statement (GCTS) actions and the Land Use Recovery Plan (LURP) Action 40. The GCFS was led by NZTA in collaboration with CCC, WDC, SDC, and ECan. The study was supported by Lyttleton Port, KiwiRail and Christchurch International Airport Limited (CIAL). The study was undertaken in three steps with sub-reports as follows: • The Freight Demand Statement which assessed origins and destinations of demand; assessment of freight by commodities, freight hubs and generation points. This provided validation of the GCTS growth forecasts with the addition of a range of forecasts. • The Freight Infrastructure Statement assessed current infrastructure capacity, supply chain capability and identified constraints and opportunities for the future. • The Freight Management Directions Statement builds on the other two documents. It provides recommendations for further optimisation and improvements to the freight network and management practices. The report recommendations have been considered and where appropriate incorporated into the Greater Christchurch Freight Action Plan agreed by Greater Christchurch Partners.
Christchurch Rolleston and Environs Transportation Study	The roading issues pertaining to growth between Christchurch, Rolleston and Lincoln were examined in the Christchurch Rolleston and Environs Transportation Study (CRETS). The foundation study's goal was to identify a strategy to accommodate growth in the road network to south and southwest of Christchurch, as it interacts with metropolitan Christchurch and the State Highway system, for the next 20 years. The study partners comprised: • Christchurch City Council (CCC) • Christchurch International Airport Ltd (CIAL) • Environment Canterbury (ECAN) • Selwyn District Council (SDC) • Transit NZ (NZTA) The study commenced in 2002 and the Transport Strategy Final Report was published for in 2007. It should be noted this study predated the Canterbury earthquakes and the growth patterns since.

State Highway Corridor Management Plan	The Christchurch to Dunedin Corridor Management Plan describes the customer service delivery story for the Christchurch to Dunedin corridor as measured against the ONRC framework.

3.6 Mana whenua plans and guidance

Iwi Management Plans	**Mahaanui Kurataiao Iwi Management Plan and Te Taumutu Rūnanga Natural Resources Plan 2003** The Mahaanui Iwi Management Plan (IMP) provides a statement of Ngāi Tahu objectives, issues and policies for natural resource and environmental management in the takiwā of the IMP rūnanga. The Te Taumutu Rūnanga Natural Resources Plan 2003 sets out Ngāi Te Ruahikihiki ki Taumutu values and policies with regard to natural resource management in the Taumutu takiwā. This plan is also an IMP. Iwi Management Plans are afforded explicit statutory recognition under the Resource Management Act (1991). Council has statutory obligations under the Local Government Act 2002 and Resource Management Act 1991 to appropriately recognise, protect and provide for Tāngata Whenua values and interests. These IMPs assist Council to do this.
Ngāi Tahu Climate Change Strategy	**Te Rūnanga o Ngāi Tahu He Rautaki Mō Te Huringa o Te Āhuarangi Climate Change Strategy** This strategy provides direction for Ngāi Tahu interests, assets and activities reflecting the broad impact of climate change. The purpose of this strategy is to create Ngāi Tahu responses to the risks and opportunities presented by climate change, referencing the entire tribal structure, so that iwi, hapū and whānau aspirations can be met in the face of climate change. Aligned to Ngāi Tahu 2025, a vision and strategic direction is established, followed by short/medium term actions to be achieved by 2025 and longer term actions to be achieved by 2050.

3.7 Selwyn District Council Strategies, Plans, Policies and Bylaws

District Plan	Our District Plan (currently under review) determines resource management issues, objectives, policies, methods and sets rules which control and manage development while ensuring that the important characteristics of our district can be protected. The District Plan identifies the form and scale of development which impacts the form and scale of infrastructure required.

Selwyn Spatial and Strategic Planning	'*Selwyn 2031*' is our current District Development Strategy. It provides the overarching strategic framework for achieving sustainable growth across the district. *Selwyn 2031* guides future development and informs our investment decisions. It outlines where development should be focused and what pattern of land use, infrastructure, and transport, is needed to achieve its outcomes. It also identifies existing infrastructure constraints that need to be overcome prior to further development occurring. Master Plans and Area Plans have been prepared for locations such as Lincoln Town Centre, Rolleston Town Centre and Foster Recreation Park, along with Ellesmere and Malvern areas. These plans follow *Selwyn 2031*'s direction and indicate how areas will develop over time, with specific projects developed over time through the long-term and annual plans. 'Future Selwyn' is currently being developed, to replace and expand on '*Selwyn 2031*'. It will become the high-level plan that outlines how the District will grow to achieve desired outcomes and inform how Council will meet its duties and functions to assist in delivering community well-being.
Walking and Cycling Strategy	The Walking and Cycling Strategy provides a framework for making walking and cycling (for transport and recreation) safer, more accessible and more attractive, with the aim of supporting mode shift to active transportation. The Strategy guides investment in walking and cycling infrastructure. A key priority of the Walking and Cycling Strategy is to integrate infrastructure with public transport provision. The Walking and Cycling Strategy is currently under review.
Road Safety Strategy & Action Plan	The Selwyn Road Safety Strategy to 2020 was developed in 2014 at a similar time to this plan. The Strategy aligns with the Ministry of Transport's Strategy (Safer Journeys) and is discussed further in Section 5 Road Safety. This strategy is discussed in Section 5 Road Safety and can be found on Council's website.
Long Term Plan	The LTP presents a blueprint for the delivery of Council services over the next ten years, including our major projects, expected income and costs, and what rates will be needed during this time. This AMP supports the LTP 2024-2034. The LTP is also supported by the Financial Strategy which outlines our financial vision for the next 10 years and the impacts on rates, debt, levels of service and investments. It guides our future funding decisions and, along with this IS, informs the capital and operational spending for our LTP and Infrastructure Strategy.
Infrastructure Strategy	The purpose of an Infrastructure Strategy (IS) is to identify the significant infrastructure issues for Waikirikiri Selwyn over the next 30 years, to identify the principal options for managing those issues and the implications of those options, in compliance with the Local Government Act 2002 Section 101B (LGA) requirements. Transportation is a key asset holding activity in the IS.

Asset Management Policy	Council has established a level of assessment management for each key activity through our Asset Management Policy to ensure that AMPs developed are fit for purpose in the Waikirikiri Selwyn context.
Procurement Strategy	Developed in 2010 to meet the requirements of NZTA's Procurement Manual, this Strategy details the approach to procurement across the Transportation, 5Waters, Community Services and Waste Management. Procurement of services for the Transportation Activity is required to comply with the Strategy.
Engineering Code of Design	Council's Engineering Design Standards for Subdivisions and Development specifies development standards for constructed works, particularly those to vest to Council. The guidance while aimed at Developers can also be used as a basis for Council's own project works. Prior to the introduction of the plan changes and the development of the engineering standards, service and technical design details were contained in Section 6: Levels of Service (LoS) of the AMP. Collation and analysis of the suite of Engineering Design Standards to ensure consistency across the range of former, current and proposed LoS and Standards is identified as an Improvement Plan item.

3.6.12 Master Plans and Structure Plans

Rolleston Town Centre Master Plan

In 2013, Council undertook consultation around the development of Rolleston as the 'hub of the district'. The consultation specifically included the Rolleston Town Centre and Foster Park.

Rolleston has a lot of potential. The town is growing quickly but there are a number of issues and challenges:

- *Rolleston doesn't have a main street or a town centre. This means that people tend to drive from one location to another. With no town centre it's also harder to create central public spaces which people will use.*
- *Rolleston Primary School, I-zone and the Council offices are key areas but are not well connected to the shopping area.*
- *The new Aquatic Centre, Foster Recreation Park, Clearview Primary and the new high school to the south of the town centre will become increasingly busy locations and there is the opportunity to create a well-connected recreation and education hub.*
- *Existing community facilities (Rolleston Library and the Rolleston Community Centre) and sports grounds are at capacity.*

(Source: Public Consultation on Draft Masterplan, September 2013)

The plan was adopted on April 2014. Key projects are integrated into this AMP.

Based on this feedback the vision for the centre is:
By 2031 Rolleston Town Centre (now called Waikirikiri Centre) will be a thriving destination at the heart of Rolleston where people will come to work, shop and play.

The centre will:

- Be locally distinctive.
- Be family and child-friendly.
- Include quality built form.
- Progress sustainability.
- Value open space.
- Be economically competitive.

Based on this vision the Masterplan introduces key 'projects' as follows:

1. Development of a two-sided retail 'high street' along Tennyson Street.
2. Reinforcing Tennyson Street as the key 'spine' route through the town centre from SH1 to the Foster Recreation Park.
3. Introducing a 'fine grain' built form by creating new streets to improve legibility and connectivity and a range of building sizes and forms.
4. Introducing a new multi-purpose library/ community/ technology centre and town square at the heart of the centre as a key attraction and landmark development.
5. Integration of the Reserve into the town centre as a high amenity park adjacent to the 'high street' and town square.

Lincoln Structure Plan

The Lincoln Structure Plan determines when, where and how the town of Lincoln will grow over the next three decades as its population climbs.

The Structure Plan indicates where new residential, commercial and industrial developments will go along with the supporting assets like roads, reserves and pipes.

The Structure Plan brings together a wide range of information from:

- Council files, maps and plans.
- Consultant research.
- Discussions, meetings and workshops with landowners, developers and residents.
- Submissions from all of the above.

The Structure Plan was adopted on 28th May 2008.

Council proposed to implement the Structure Plan by notifying Plan Change 7 to the District Plan. Additionally in 2015, Council has engaged the services of Abley Consultants to produce a Lincoln Town Centre Streetscape Report that looks at different design options for Gerald Street through Lincoln. This document can be found on Council's website.

Rolleston Structure Plan

The Rolleston Structure Plan was adopted by Council on 23 September 2009 following two years of work and consultation with the community, consultants, landowners, developers and Council staff.

The Structure Plan addresses four key issues:

- Town centre
- Land use
- Movement
- Infrastructure

Prebbleton Structure Plan

The Prebbleton Structure Plan was adopted by Council on the 24th February 2010. It provides a framework for guiding development over the next 30 years to achieve a high level of town planning and urban design.

The Structure Plan details what community services and infrastructure is required and the character elements that need to be protected to ensure that the village amenity is retained.

The Structure Plan is consistent with the Greater Urban Development Strategy and Proposed Change 1 to the Regional Policy Statement, and will guide plan changes, resource consents and reviews of the District Plan.
The further development and implementation of these plans will require commitment and collaboration from Planners and Activity Managers. This will occur over the course of successive Long Term Plans.

3.6.14 Council Policies

Over time Council has established a broad suite of policies. These state Council's position on specific issues and detail the management approach to be implemented by staff.

Policies differing levels of impact on the Transportation Activity; this is indicated under Impact Range (Broad ***, Moderate **, Limited *).

Table 3.3: Policy Impact on the Transportation Activity

Policy Group	Policy Name	Transportation Impacted Range
Advertising A2	Political Signs A202	**
Climate Change C1	Climate Change C101	**
Council Property C5	Land Sales Policy C502	*
Community Planning and Design C6	Crime Prevention Through Environmental Design C602	**
Engineering E1	Civil Engineering Standards E101 Asset Management Policy E102	***
Graffiti G2	Graffiti Removal Policy G201	*
Land Bank L1	Strategic Purchase of Land for Designated Purposes L101	**
Leasing and Licencing L2	Renewal Of Leases and Licences L202 Transfer Of Farming Leases Or Licences L209	*
LTP Related	Development Contributions Significance and Engagement Revenue and Financing Māori Contribution to the Council's Decision Making Processes	***
Property Numbering & Naming of Roads & Private Rights of Ways N1	Property Numbering N101 Road Naming N102	***
Procurement P3	Procurement Policy P301	***
Remuneration R2	Disclosure Of Income R204	*

Policy Group	Policy Name	Transportation Impacted Range
Roads R4	Standards and Guidelines for Construction and Maintenance of Roads R401 Temporary Road Closure R403 Cost of Cattle Stops R410 Parking Areas on Road Frontages at Schools R411 Directional Signs R412 Ranking Of Seal Extensions R414 Mailbox Access R417 Stock Underpass R418 Sealing of Entranceways R421 Maintenance of Boundary Roads R423 Road Stopping R424 Cellphone Antenna Mast/Streetlight Pole Installation R426 Street Lights In Rural Zones R428 Cost of Lighting of Dairy Cow Crossings R429 Road Name Signs Format R430 Seal Extension Policy R431 Power Undergrounding Fund R432 Berm Maintenance R433	***
Subdivision S3	Point Strip S405 Bonding Policy for Subdivisions Works and Large Projects S406	**
Trees On Council Land T2	Vegetation and Tree Management T201	**

Impact of Specific Policies The impact of the policies that are focussed on Transportation issues are summarised in Table 3.4 below:

Table 3.4: Impact of Transportation-focussed Policies Summarised

POLICY NAME/DESCRIPTION	SUMMARY
Engineering E1	
Civil Engineering Standards E101	Review and appropriateness of standards
Asset Management E102	Describes appropriate level of asset management planning
LTP Related	
Development Contributions	Outline process for development contributions in relation to a fair, equitable, and proportionate portion of the total cost of capital expenditure necessary to service growth over the long term
Significance and Engagement	Provides clarity on the Council's decision-making processes and how the community can participate in them. Includes identification of strategic assets (including SDC transportation network)
Revenue and Financing	Outlines how operating and capital expenditure will be funded for each activity of Council
Māori Contribution to the Council's Decision Making Processes	Council's commitment to mana whenua contribution to Council decision-making in a way which reflects existing agreements, narratives, strategies, and treaty partnership principles
Property Numbering & Naming of Roads & Private Rights of Ways N1	
Property Numbering N101	Rules and guidelines for numbering of rural and urban properties
Road Naming N102	Rules and guidelines for naming of rural and urban roads
Procurement P3	
Procurement	Outlines Council's approach to planning, sourcing and managing procurement
Roads R4	
Standards and Guidelines for Construction and Maintenance of Roads R401	Adoption of "NZTA" and Austroads guidelines, standards, specifications and rules
Temporary Road Closures R403	Processes for temporary road closures
Cost of Cattle Stops R410	Details the responsibilities and cost apportionment for construction, repair and replacement of cattle stops
Parking Areas on Road Frontages at Schools R411	Safe management of drop off and pick up zones
Directional Signs R412	MOTSAM generally followed, different situations explained further
Ranking of Seal Extensions R414	Details ranking process based on BCR and the number of occupied dwellings per 100m.
Mailbox Access R417	Access to mailboxes not SDC responsibility
Stock Underpass R418	Outlines process for stock underpass applications and responsibilities of property owner

Sealing of Entranceways R421	Details the maintenance of sealed and unsealed entranceways
Maintenance of Boundary Roads R423	Details the agreement between Christchurch City Council and SDC
Road Stopping R424	Process for road stopping
Cellphone Antenna Mast/ Streetlight Pole Installation R426	Criteria for approval
Street Lights in Rural Zones R428	Required at intersections as part of subdivision consent approval
Cost of Lighting of Dairy Cow Crossings R429	Details the cost apportionment for lighting of dairy crossings
Road Name Signs Format R430	Self-explanatory
Seal Extension Policy R431	Self-explanatory
Power Undergrounding Fund R432	Funding, use of funds and approval of undergrounding projects
Berm Maintenance R433	Outlines consistent approach to Council and adjacent property owner responsibilities for management and maintenance of berms within Council owned and/or administered roads

3.6.15 Council Bylaws

Section 155 of the LGA 2002 requires every Local Authority, before making a bylaw, to determine whether a bylaw is the most appropriate way of addressing the perceived problem. That Act also requires all bylaws to be reviewed by 30 June 2008. This has occurred.

The process and timing of bylaw reviews are managed by the Council's Policy Section. When reviewing each bylaw consideration is given as to whether:

- A bylaw is the most appropriate way of addressing the particular problem or issue;
- The bylaw is in the most appropriate form, and;
- The bylaw has implications under the New Zealand Bill of Rights Act 1990.

The following table lists the bylaws enacted by SDC and their impact on transportation:
Different bylaws has differing levels of impact on the Transportation activity; this is indicated under Impact Range (Broad ***, Moderate **, Limited *).

Bylaw Group	Bylaw Name	Impacted Range
Animal Related	Stock Droving Bylaw 2008	***
Cemetery	Cemetery Bylaw 2017	*
General	General Bylaw 2009	**
Parks and Reserves	Parks and Reserves Bylaw 2009	*
Public Places	Public Places Bylaw 2018	*
Transportation	Speed Limits Bylaw 2018 & register Traffic and Parking Bylaw 2009	***

Utility	Water Race Bylaw 2008 Water Supply Bylaw 2008 Wastewater Drainage Bylaw 2016 Trade Waste Bylaw 2016 Stormwater and Drainage Bylaw 2018	*
Waste Management (Refuse)	Waste Management and Minimisation Bylaw 2019	*

Impact of Specific Bylaws

The impact of the Bylaws that are focussed on transportation issues is summarised below.

Table 3.5: Impact of Transportation-Focussed Bylaws Summarised

Animal Related Bylaws	
Stock Droving Bylaw 2008	The Bylaw sets out the rights and obligations of people droving stock on roads within the District, promotes best droving practices and promotes the safety of stock drovers, animals and other road users.
Transportation Bylaws	
Speed Limits Bylaw 2018 and register	Details speed limits on the District's managed roads including register and maps. It is noted that changes to the legislative and regulatory environment have moved Council away from the use of Bylaws for speed management planning. Current developments of a new Rule for setting of speeds are anticipated, after which this Bylaw can be revoked.
Traffic and Parking Bylaw 2009	Defines rules and limitations on parking, traffic movement, events, obstructions on roads, excavation of roads and vehicle crossings on District managed roads.

3.8 Issues

In interaction between Council's activity management and the combination of national, regional and greater Christchurch documents requires on-going monitoring.

Further changes Central Government priorities are expected along with a refocusing in the Greater Christchurch area as earthquake recovery progresses. This improvement plan will be updated as required and is a living document.

Improvement Plan items

IP 3.8 Undertake delivery of service review (LGA s17A) prior to next maintenance contract.

IP 3.9 Update Procurement Strategy (associate timing with delivery of services review and next maintenance contract)

IP3.11 Ensure Policies are consistent (e.g. R414 should be revoked and replaced in entirety by R 431)

4.0 DESCRIPTION OF THE TRANSPORTATION ACTIVITY AND ASSET CLASSES

The following information provides an overview of the assets involved in the Selwyn District transportation activity. The information is a 'snapshot in time' and is collated here as a quick reference detailing the transportation asset make-up and the change in quantities over time.

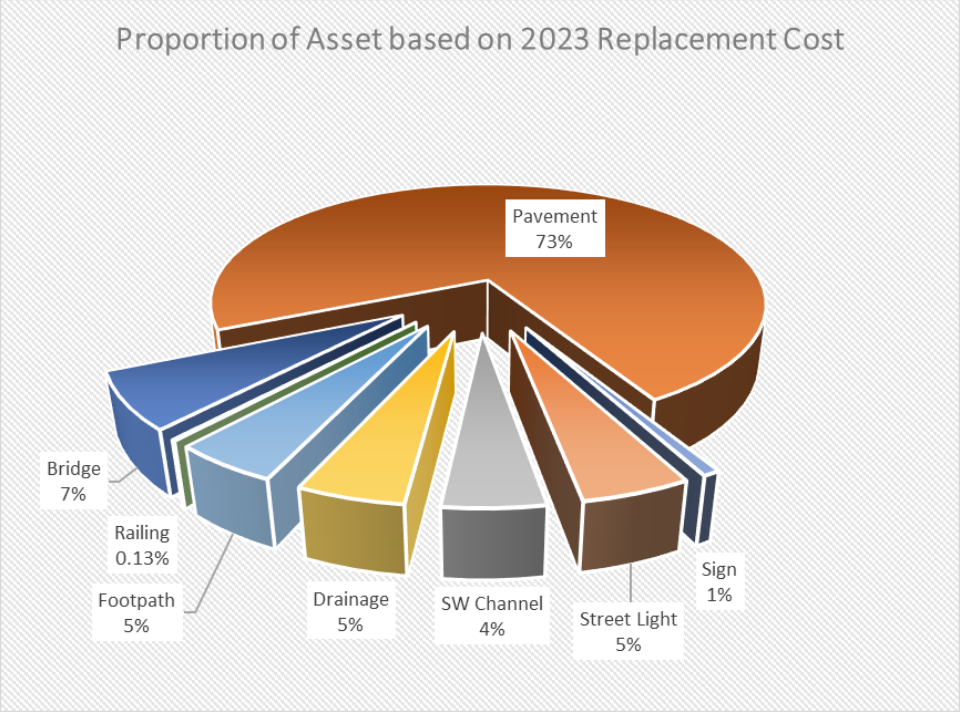
Contents

Headline 1:
Selwyn District Council's Transportation assets totalled $1.1 billion in 2023.
Annual increases are due to new assets being added as well as changes in replacement costs for assets.

4.1 Transportation Assets

Transportation is a significant service for Selwyn District Council. The annual operating expenditure represents around 15% of Council's overall annual operating expenditure while capital works are also a large proportion of the District's spend.

Figure 4-1: Proportion of Asset Based on 2023 Replacement Cost



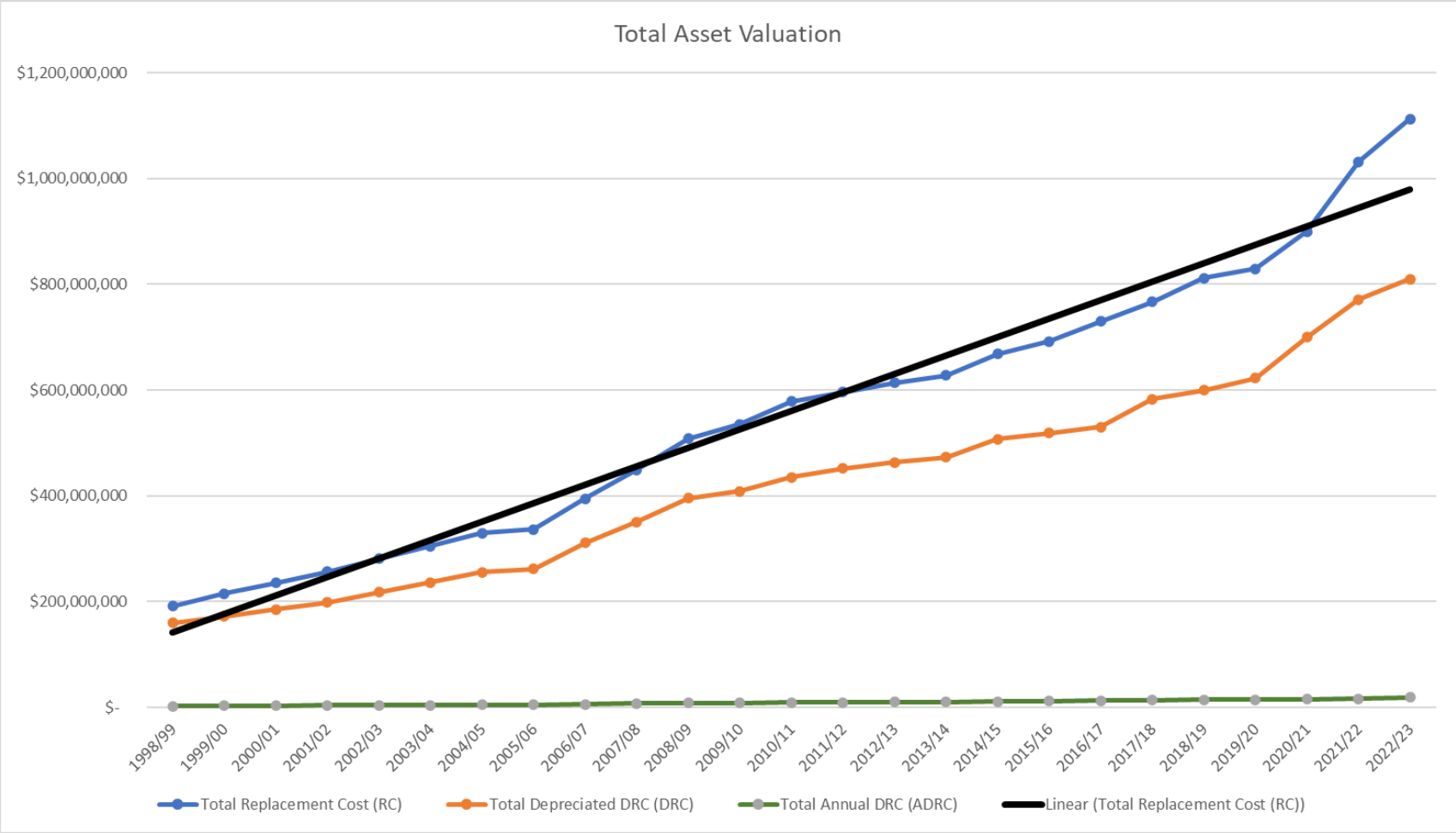
Source: Valuation Report (BECA, 2023)

Table 4-1: Summary of the Transportation Services

Asset Type	Component	RC Value
Bridges and Major Culverts	Bridge (Deck)	$64,613,252
	Major Culvert	$12,592,062
	Total	**$77,205,314**
Drainage	Culverts	$25,229,320
	Structures	$15,578,361
	Total	**$40,807,681**
Footpath	Footpath	$54,114,676
	Total	**$54,114,676**
Railing	Railing	$1,503,228
	Total	**$1,503,228**
SW Channel	SW Channel	$50,310,882
	Total	**$50,310,882**
Sign	Sign	$8,537,358
	Total	**$8,537,358**
Traffic Islands	Traffic Islands	$5,889,851
	Total	**$5,889,851**
Street Light	Poles	$45,025,521
	Brackets	$966,783
	Lights	$7,191,200
	Total	**$53,183,504**
Traffic Signals	Controller	$521,803
	Poles	$142,356
	Lanterns	$373,754
	Callbox	$16,662
	Attachments	$9,521
	Total	**$1,064,096**
Treatment Length	Sealed Surface	$153,119,148
	Sealed Basecourse	$251,564,535
	Sealed Subbase	$225,661,070
	Unsealed Pavement	$16,899,885
	Formation	$172,579,709
	Total	**$819,824,346**
Total		**$1,112,440,937**

Source: Valuation Report (BECA, 2023)

Figure 4-2: Total Valuation All Assets



Source: Transportation Valuations Summary

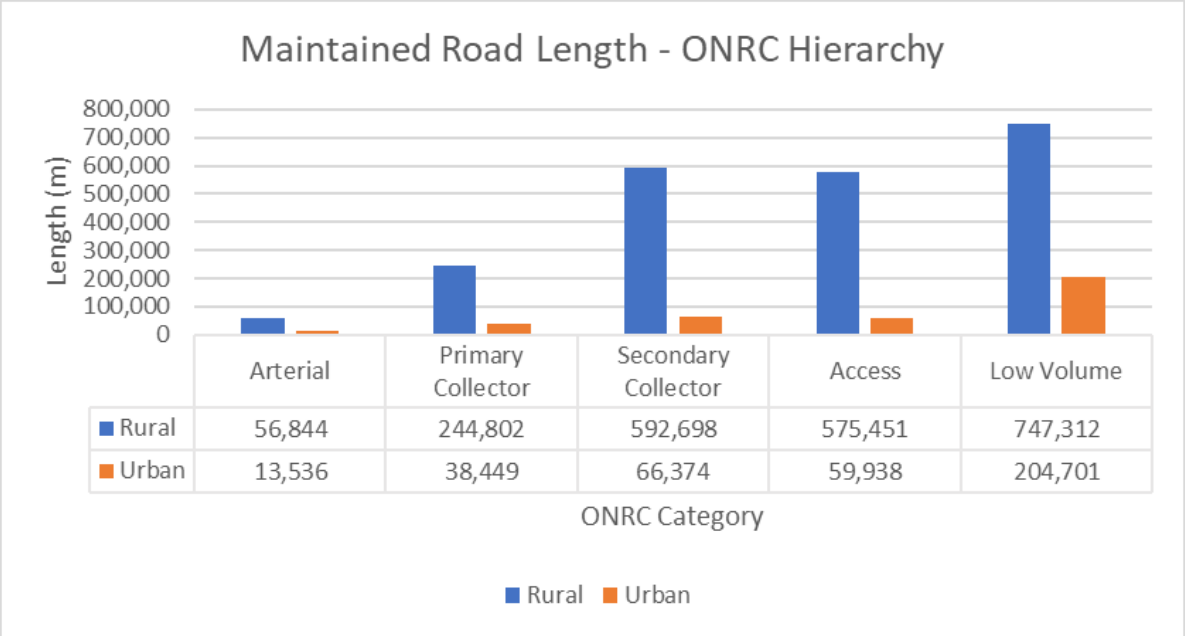
4.2 Network Hierarchy

A map showing the District's roading network follows including the One Network Roading Classification (ONRC) hierarchy.

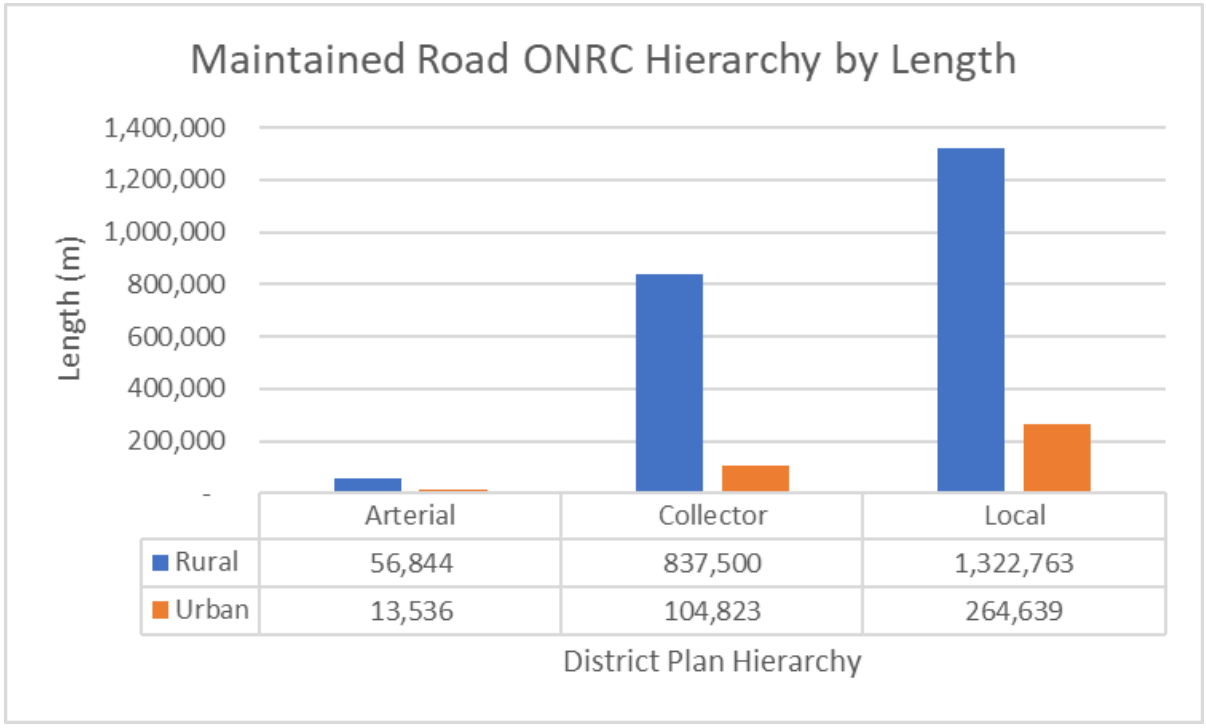
The District's road hierarchy was reviewed in 2011 as part of District Plan change process to reflect growth patterns at that point in time. The lengths of road within each District Plan and ONRC hierarchy category are illustrated in Figure 4-3 below. Council is currently undertaking a District Plan Review and this will likely result in changes to the road hierarchy again.

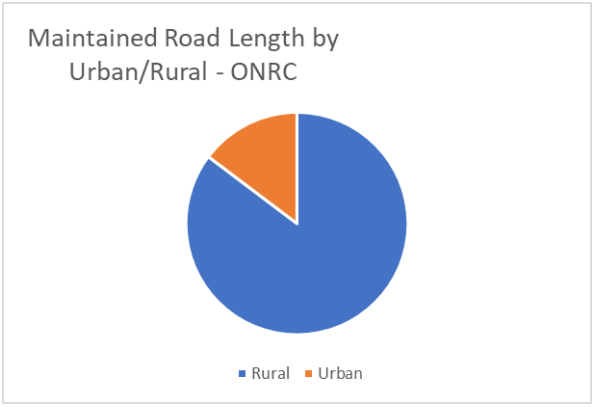
The District Plan and ONRC hierarchy length consist of Council maintained roads including shared boundary roads with Christchurch City. There is a minor discrepancy in total length. This data issue will be addressed as part of the Improvement Plan and explains the small variation between the District and the ONRC network length.

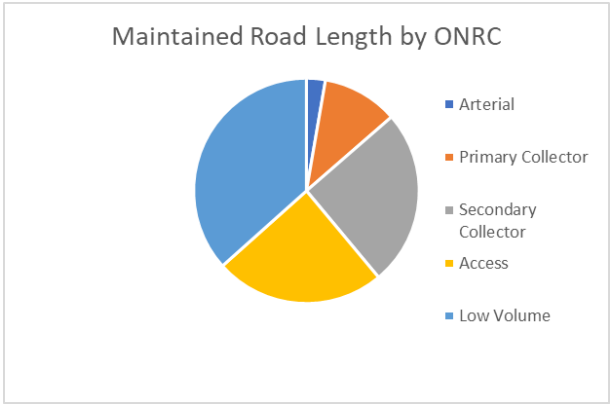
Figure 4-3: Road Hierarchy and Pavement Type - ONRC



Source: Transportation Hierarchy Analysis Summary



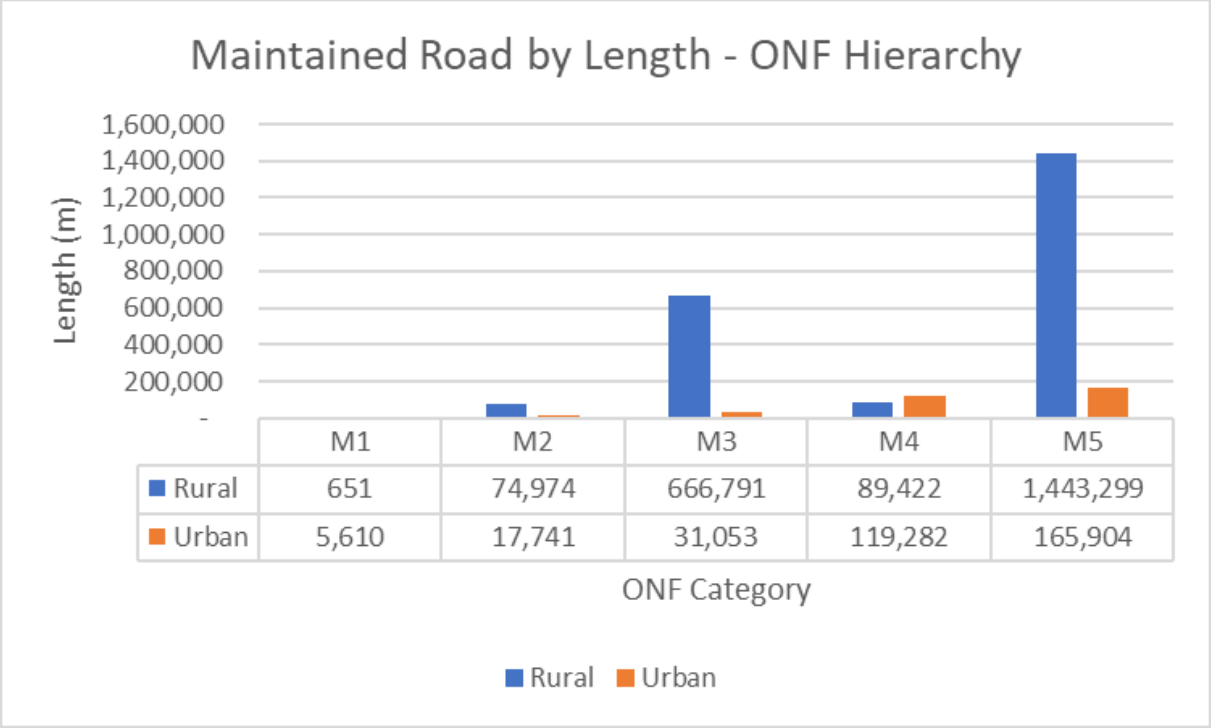


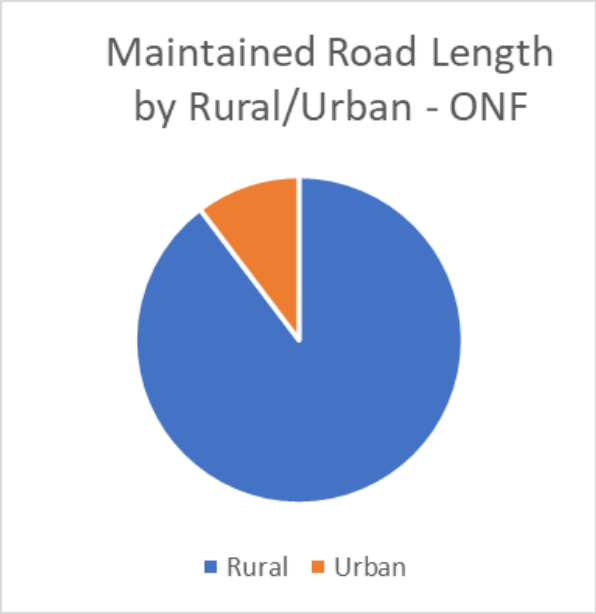


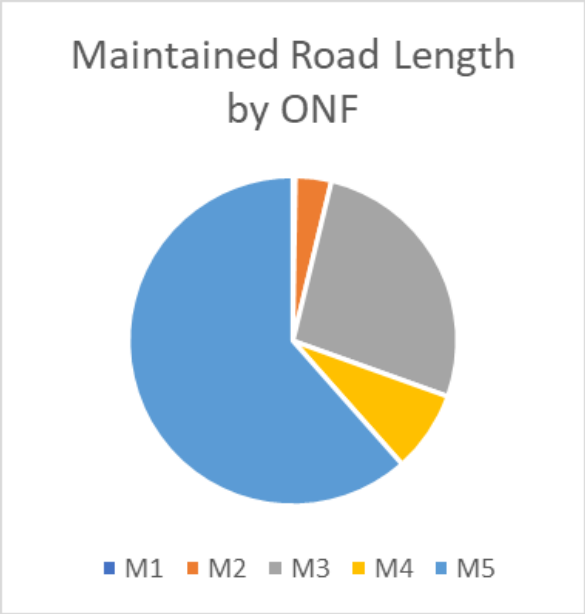
Source: Transportation Hierarchy Analysis Summary

Over the course of the 2024/27 period, Selwyn District will be continuing to develop and implement the use of the One Network Framework (ONF) in managing transportation assets and Levels of Service. Figure 4-4 provides the lengths of roads which are classified under the five 'movement' categories (M1 to M5) – and the urban and rural groupings of these categories.

Figure 4-4: Road Hierarchy and Pavement Type - ONF





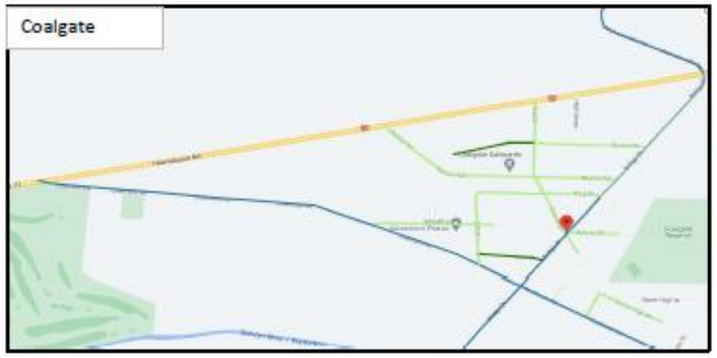


Provisional ONRC and ONF categorisation of our township networks are shown in Figure 4-5 and Figure 4-6 respectively. The use of the General Traffic (GT) modal classification layer for ONF provides the closest direct link between the two hierarchies, as shown in Table 4-2.

Table 4-2: ONF General Traffic (GT) and ONRC Classes

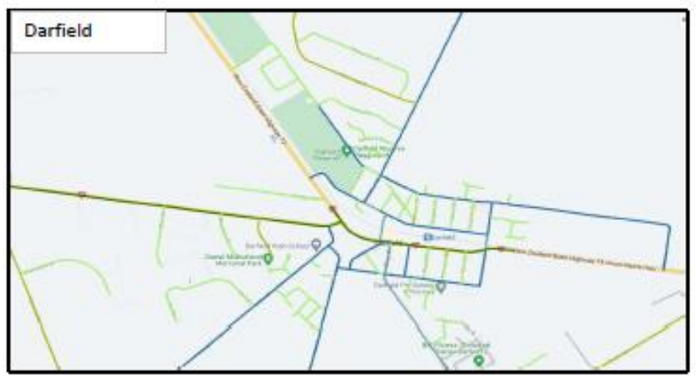
ONRC	ONF GENERAL TRAFFIC MODE
National	GT2
Regional	GT3
Arterial	GT4
Primary Collector	GT5
Secondary Collector	GT6
Access	GT7
Low Volume	GT8

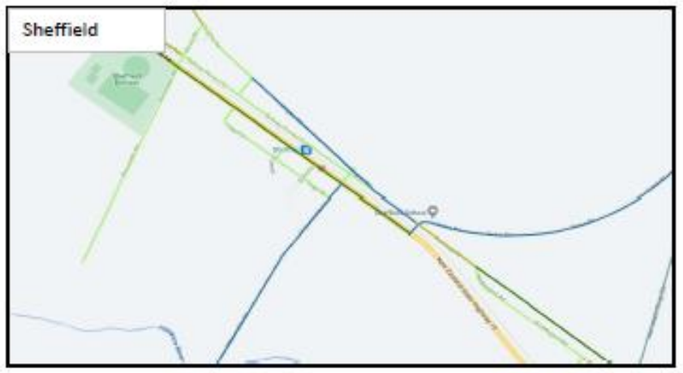
Figure 4-5: Selwyn District Provisional One Network Roading Classification Hierarchy (Townships)


Coalgate


Glentunnel

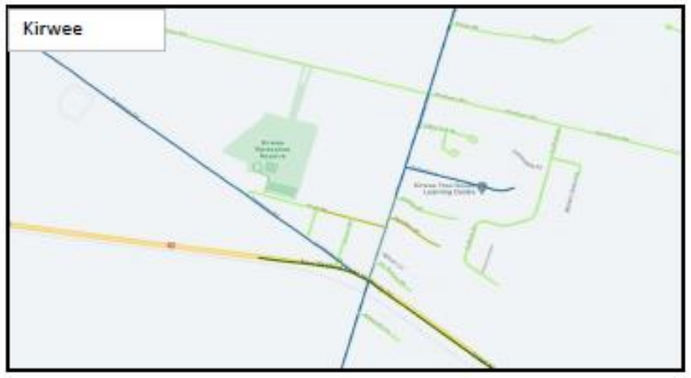

Hororata

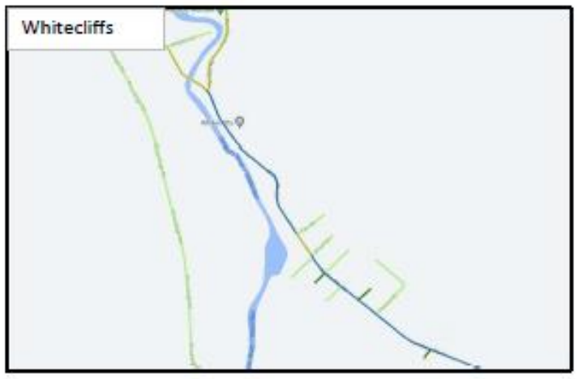

Darfield


Sheffield


Waddington


Springfield

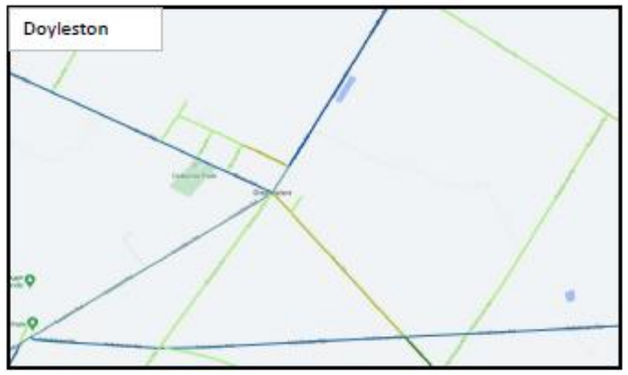

Kirwee


Whitecliffs


Leeston


Southbridge

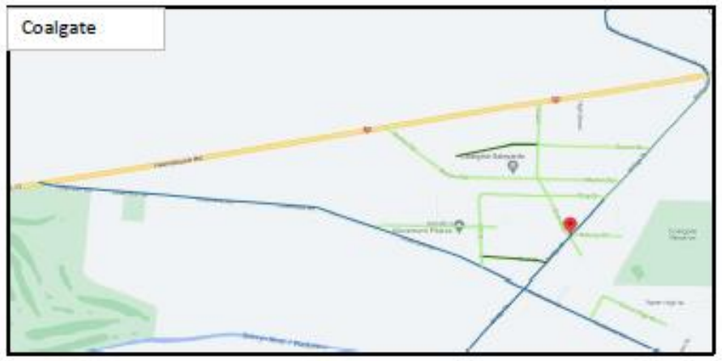

Lake Coleridge


Doyleston

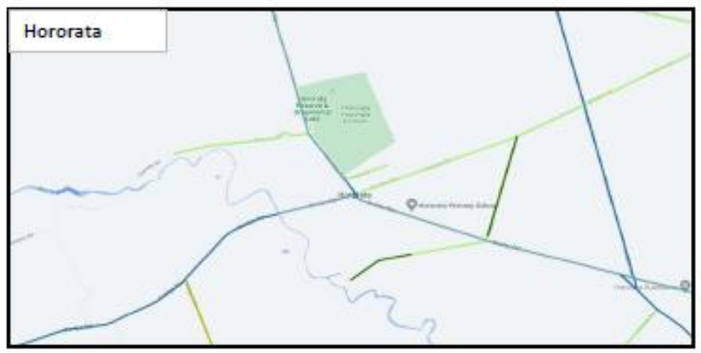

Dunsadel


Springston

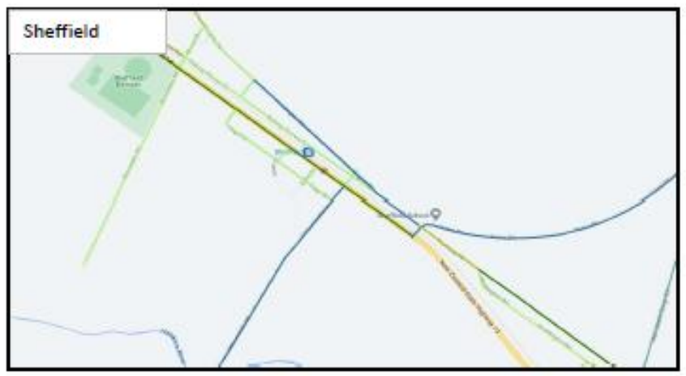
Figure 4-6: Selwyn District Provisional One Network Framework Hierarchy (Townships)


Coalgate


Glentunnel


Hororata

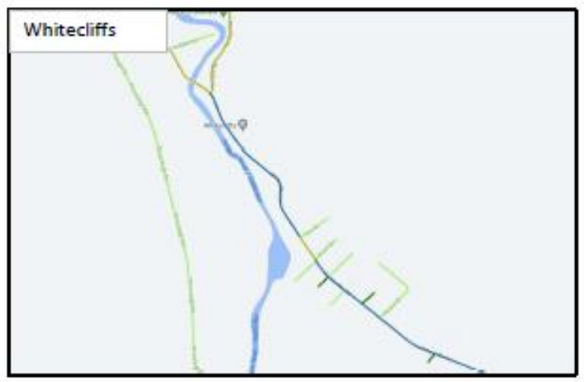

Darfield

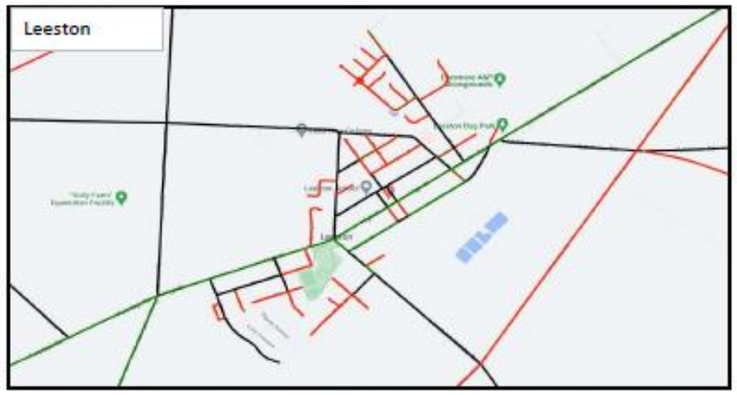

Sheffield


Waddington

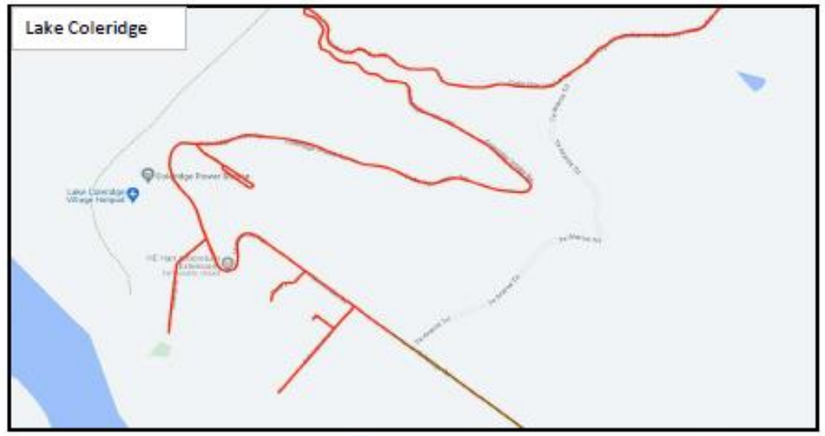

Springfield

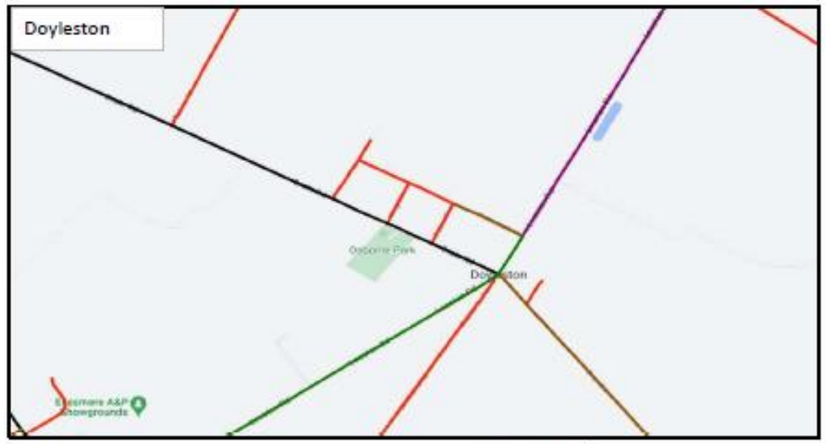

Kirwee


Whitecliffs

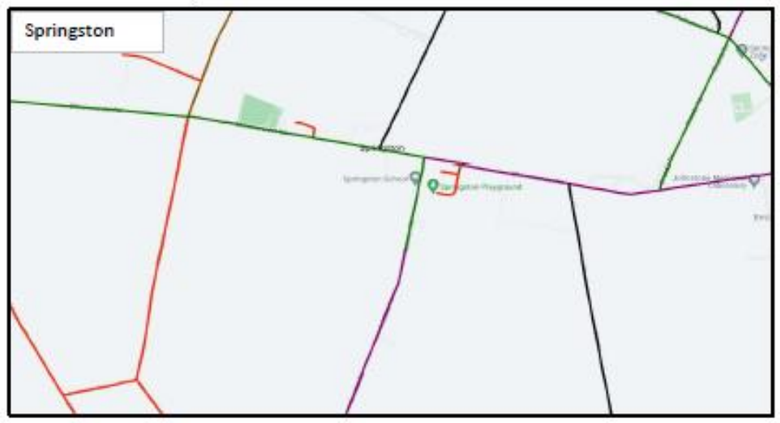

Leeston


Southbridge


Lake Coleridge


Doyleston


Dunsadel


Springston

4.3 Asset Valuation

4.3.1 Background

Road assets are infrastructure assets that provide a continuing service to the community and are generally not regarded as tradable.

The valuations are based on accurate and substantially complete asset registers and appropriate replacement costs and effective lives. Council uses the RAMM database as its Asset Register. RAMM data is at sufficient detail to allow assets of different base lives to be valued separately.

Council's current policy is to undertake a registered valuation of its infrastructural assets on a 3-yearly basis. Between registered valuations, normal valuations are undertaken to review the extent of change in Council's Transportation Asset base. This provides context and understanding of significant changes resulting from changes to the asset quantities and/or Contractor rates. Road asset valuations are undertaken by specialist consultants in accordance with the following standards:

- Public Benefit Entity International Public Sector Accounting Standard 17 (PBE IPSAS 17).
- New Zealand Infrastructure Asset Valuation and Depreciation Guidelines.

In addition, the registered valuation is subject to Audit NZ review. Asset quantities used for the valuations are derived from RAMM.

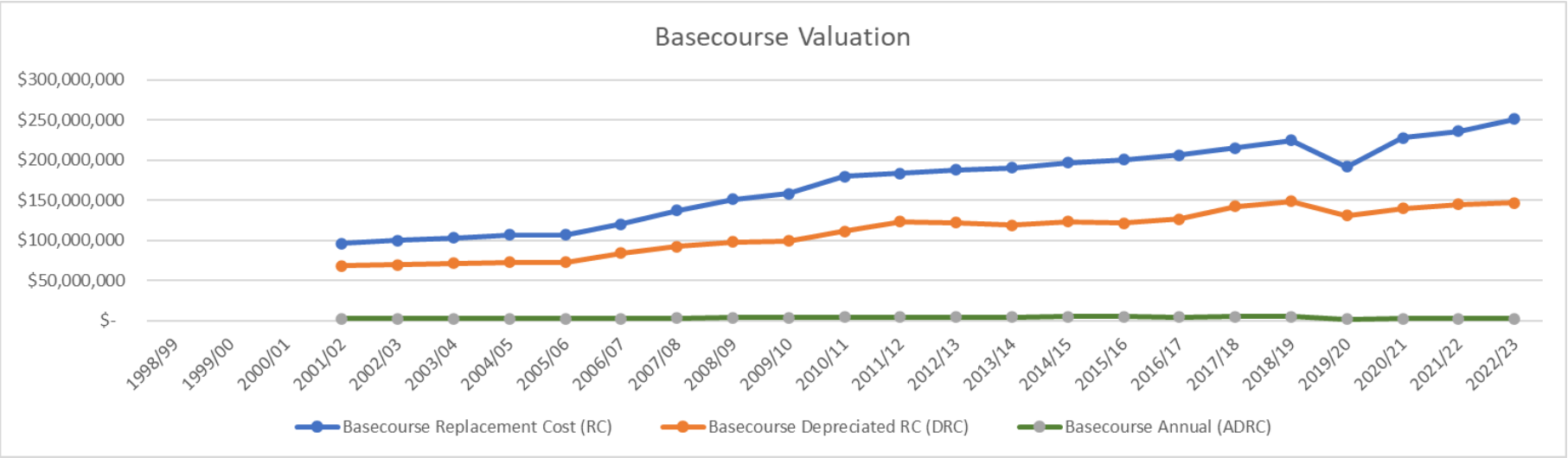
The valuations for the following items are calculated for the subject year:

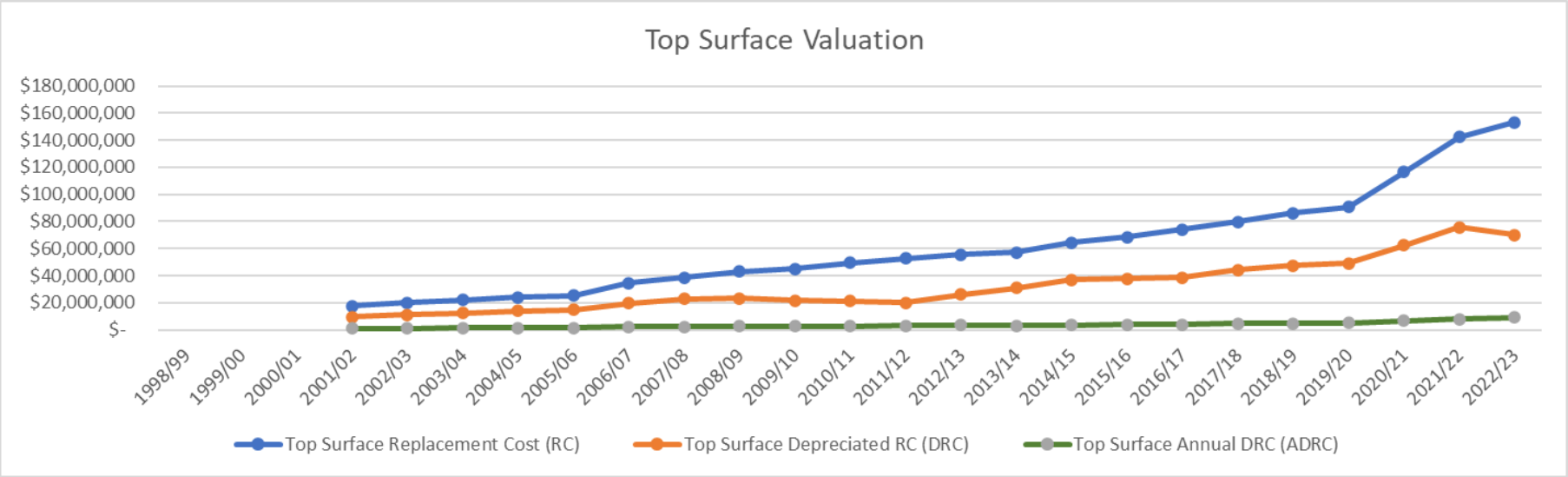
- Replacement Cost (RC)
- Optimised Replacement Cost (ORC)
- Depreciated Replacement cost (DRC)
- Annual Depreciation

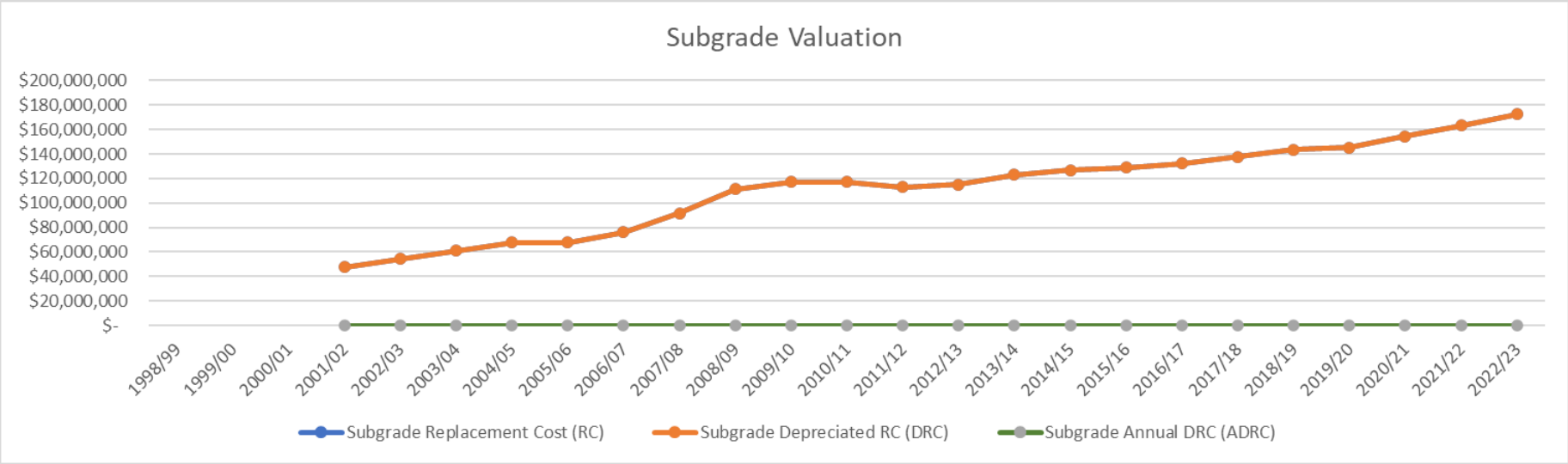
4.3.2 Summary

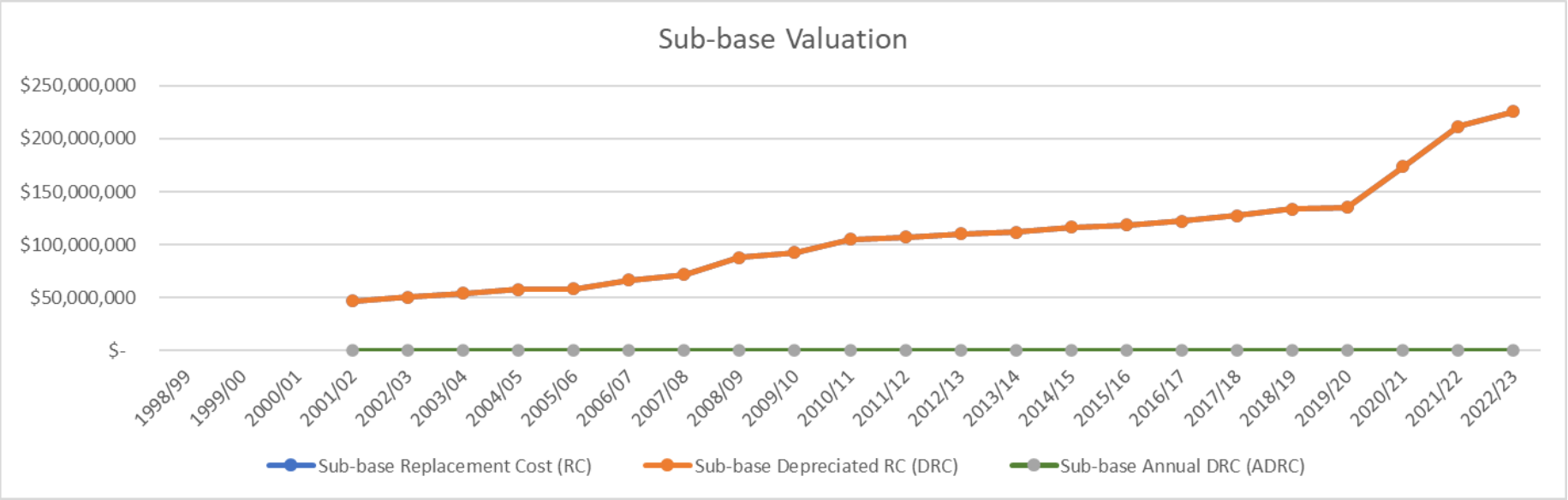
Current asset valuations are summarised below.

Figure 4-7: Asset Valuation Trends




Top Surface Valuation
$180,000,000
$160,000,000
$140,000,000
$120,000,000
$100,000,000
$80,000,000
$60,000,000
$40,000,000
$20,000,000
$-
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
Top Surface Replacement Cost (RC)
Top Surface Depreciated RC (DRC)
Top Surface Annual DRC (ADRC)


Subgrade Valuation
$200,000,000
$180,000,000
$160,000,000
$140,000,000
$120,000,000
$100,000,000
$80,000,000
$60,000,000
$40,000,000
$20,000,000
$-
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
Subgrade Replacement Cost (RC)
Subgrade Depreciated RC (DRC)
Subgrade Annual DRC (ADRC)


Sub-base Valuation
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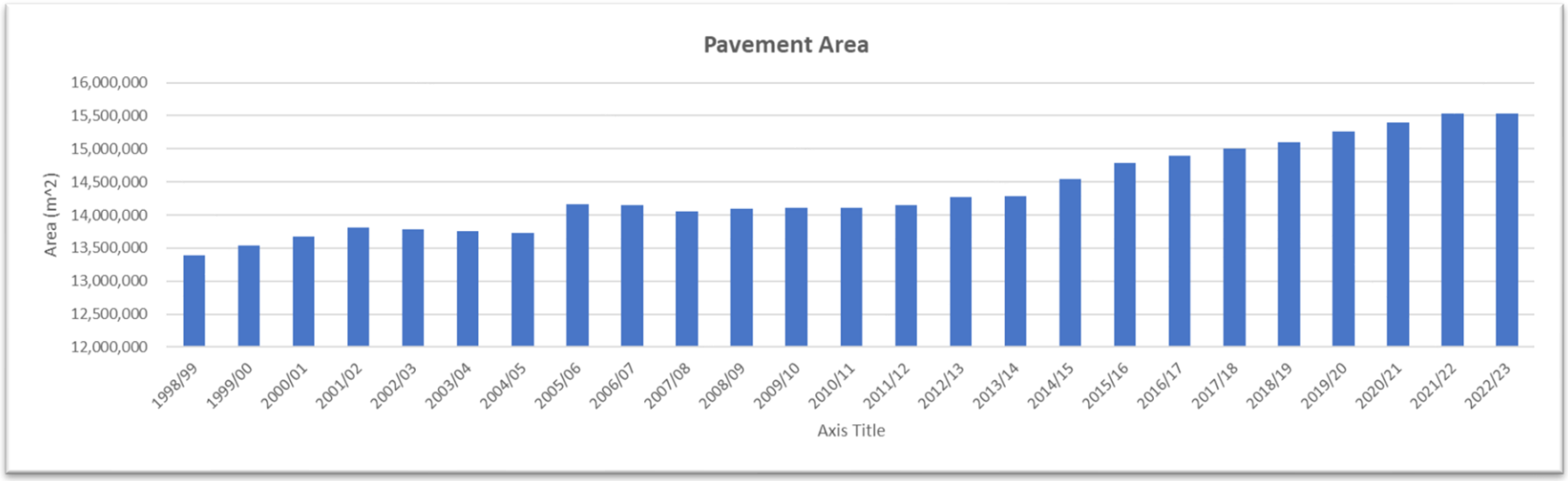
$200,000,000
$150,000,000
$100,000,000
$50,000,000
$-
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
Sub-base Replacement Cost (RC)
Sub-base Depreciated RC (DRC)
Sub-base Annual DRC (ADRC)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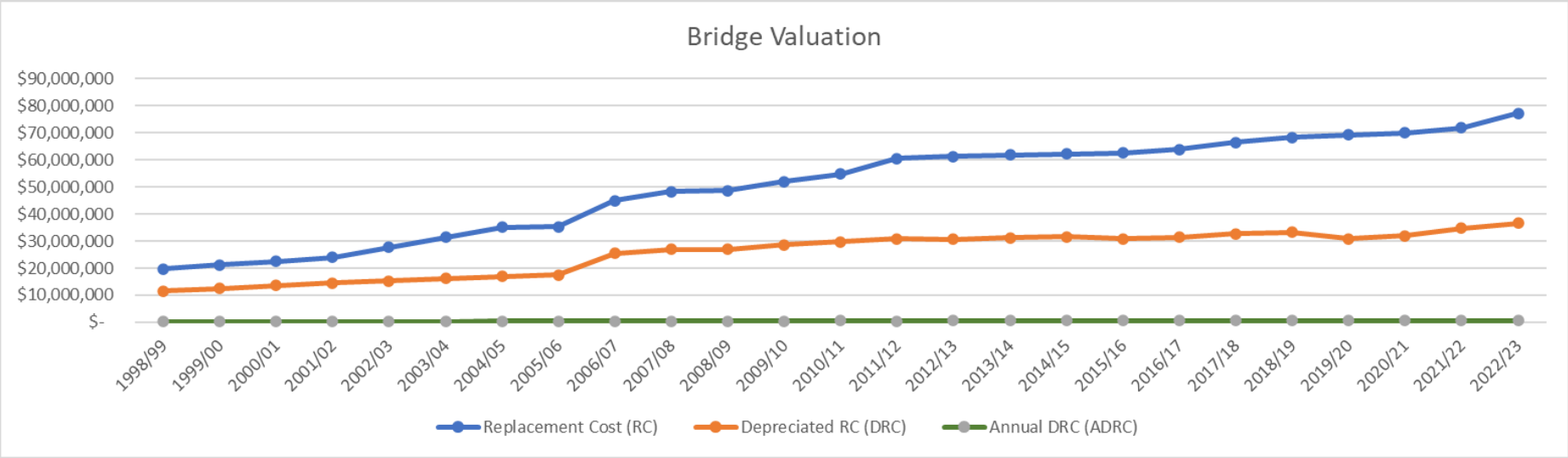
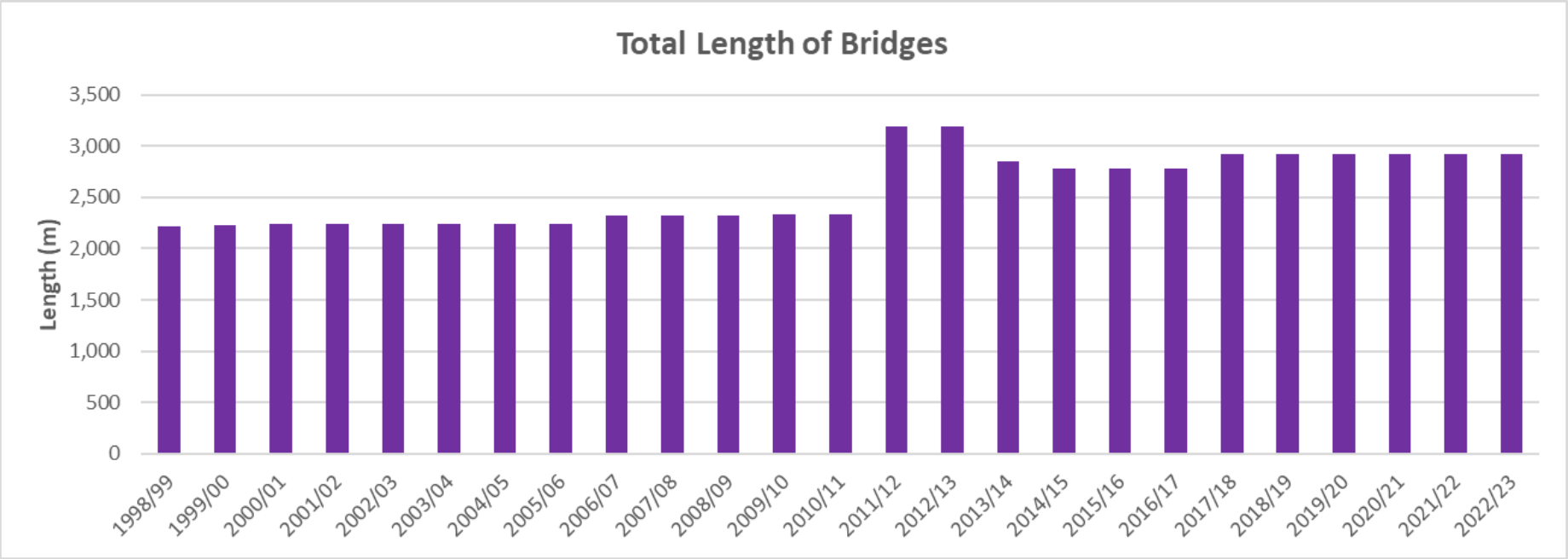
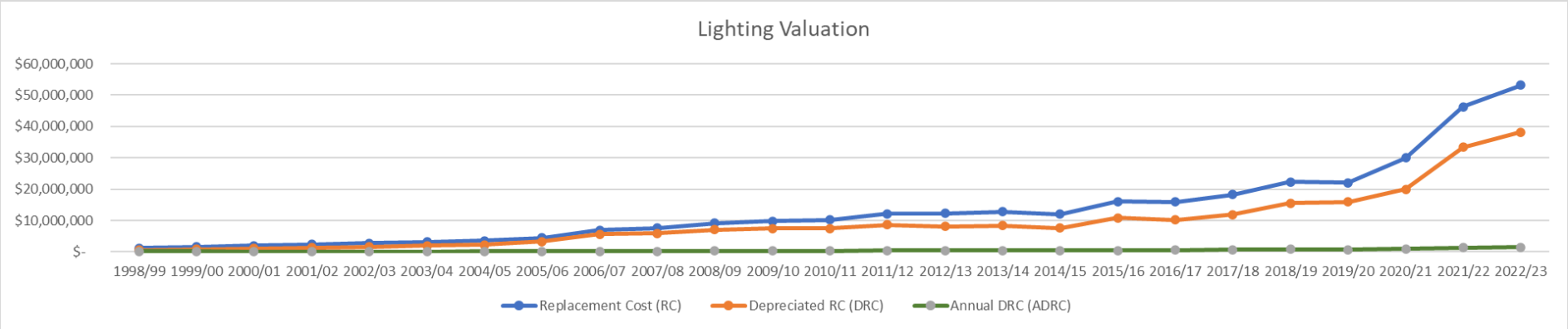
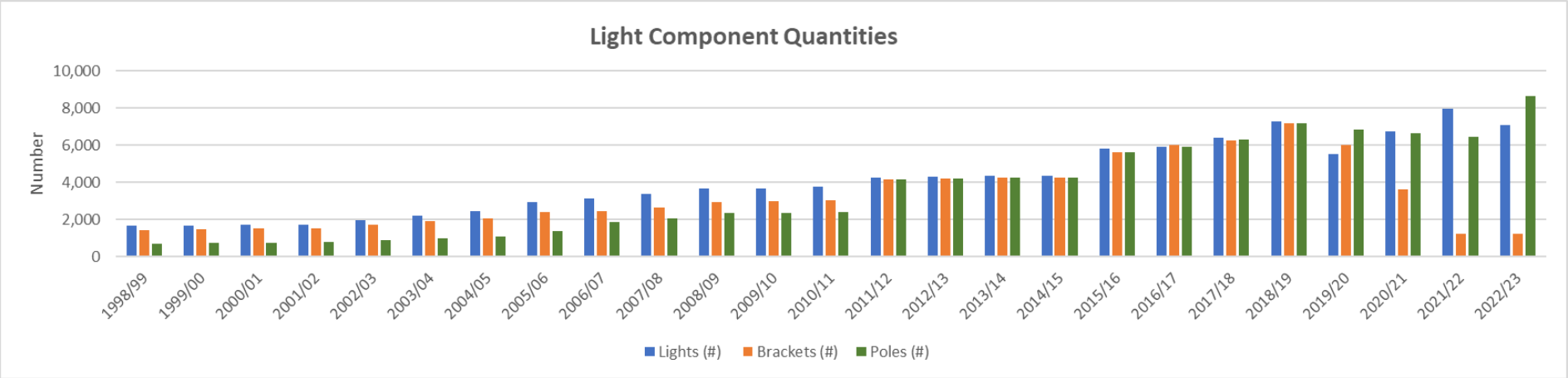
15,500,000
15,000,000
14,500,000
14,000,000
13,500,000
13,000,000
12,500,000
12,000,000
Area (m^2)
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
Axis Title


Bridge Valuation
$90,000,000
$80,000,000
$70,000,000
$60,000,000
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$-
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
Replacement Cost (RC)
Depreciated RC (DRC)
Annual DRC (ADRC)


Total Length of Bridges
Length (m)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23


Lighting Valuation
$60,000,000
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$-
1998/99 1999/00 2000/01 2001/02 2002/03 2003/04 2004/05 2005/06 2006/07 2007/08 2008/09 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19 2019/20 2020/21 2021/22 2022/23
Replacement Cost (RC)
Depreciated RC (DRC)
Annual DRC (ADRC)


Light Component Quantities
Number
10,000
8,000
6,000
4,000
2,000
0
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
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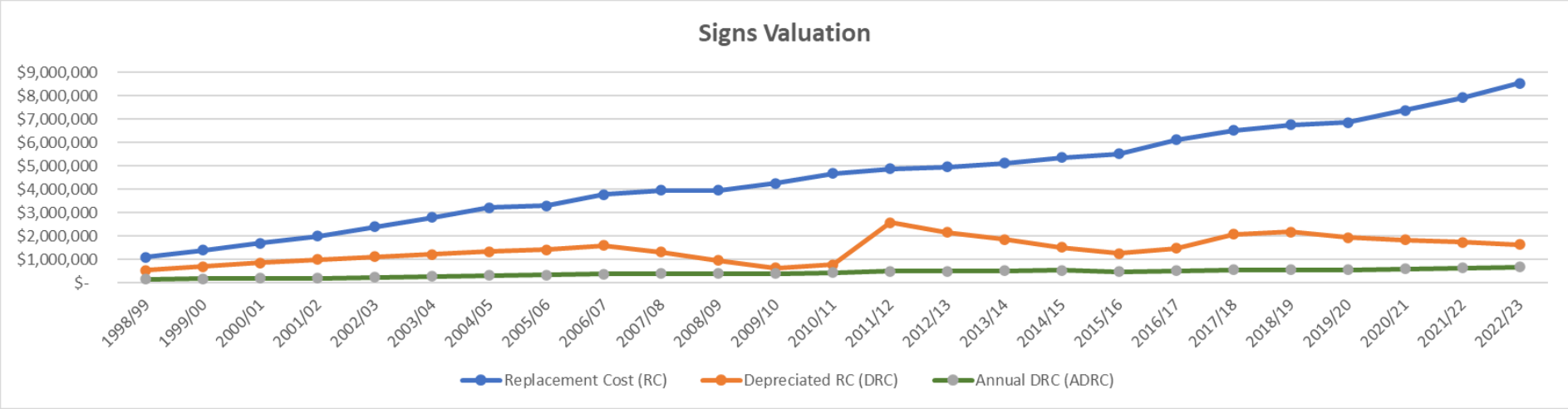
2019/20
2020/21
2021/22
2022/23
Lights (#)
Brackets (#)
Poles (#)


Signs Valuation
$9,000,000
$8,000,000
$7,000,000
$6,000,000
$5,000,000
$4,000,000
$3,000,000
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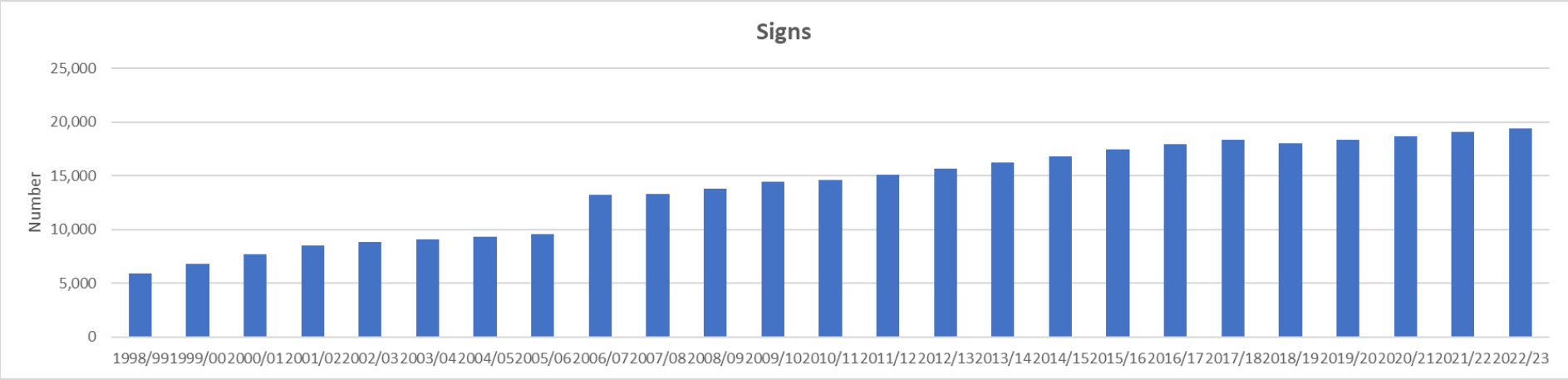
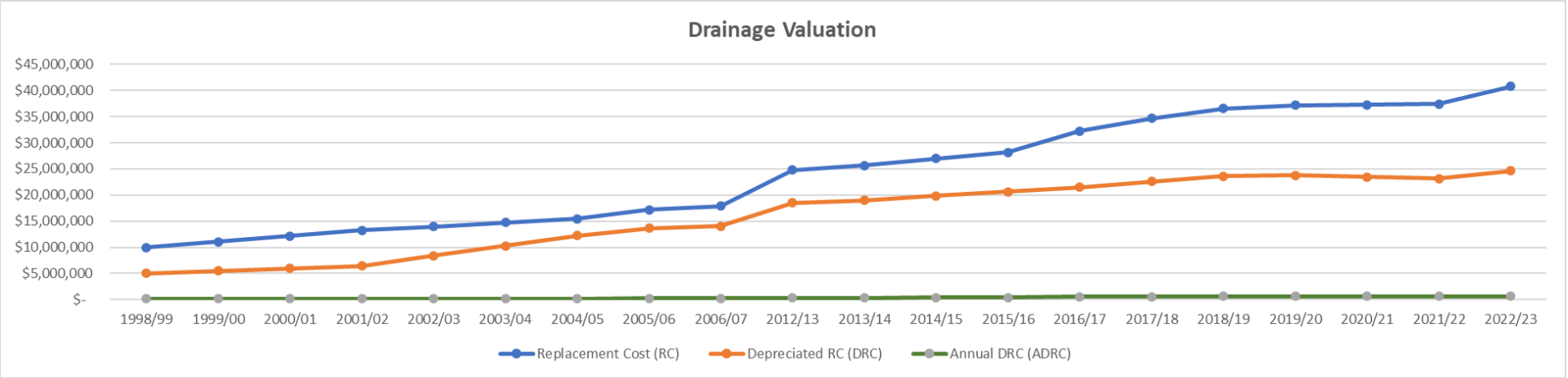
$-
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23
Replacement Cost (RC)
Depreciated RC (DRC)
Annual DRC (ADRC)


Signs
25,000
20,000
15,000
10,000
5,000
0
Number
1998/99 1999/00 2000/01 2001/02 2002/03 2003/04 2004/05 2005/06 2006/07 2008/09 2009/10 2010/11 2011/12 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19 2019/20 2020/21 2021/22 2022/23


Drainage Valuation
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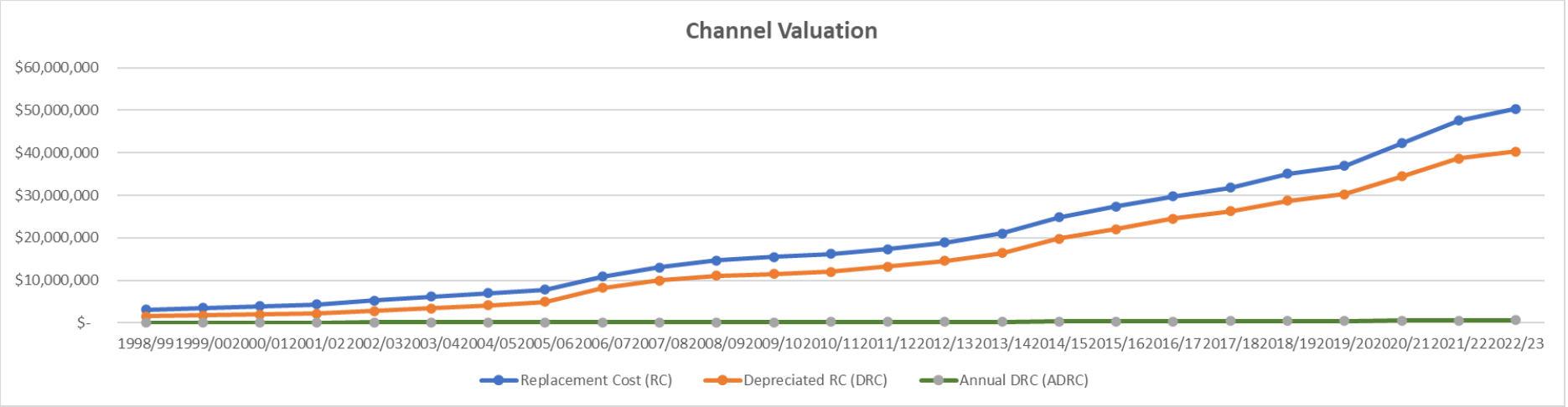
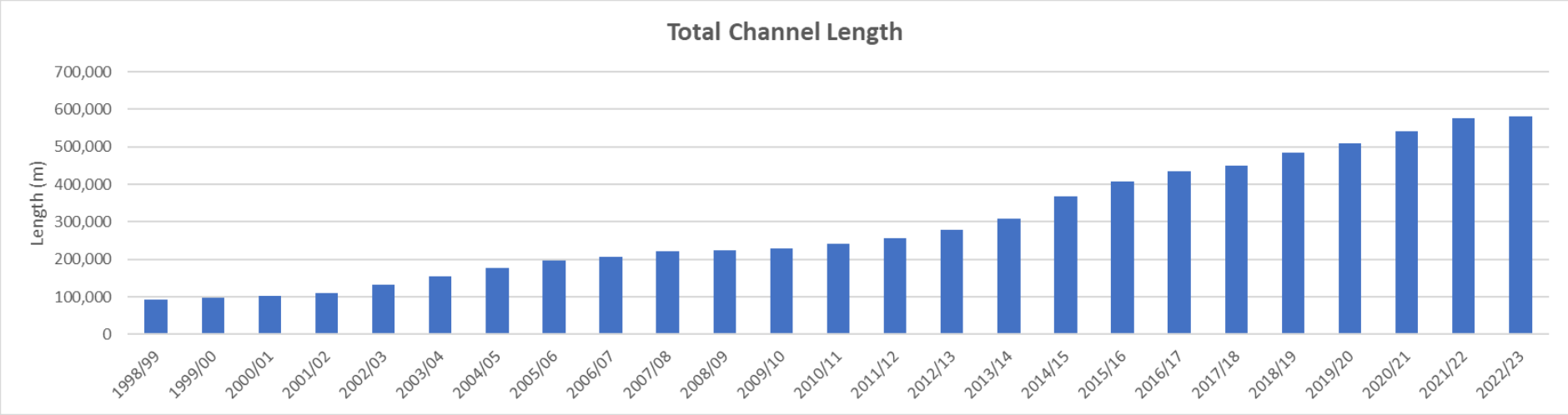
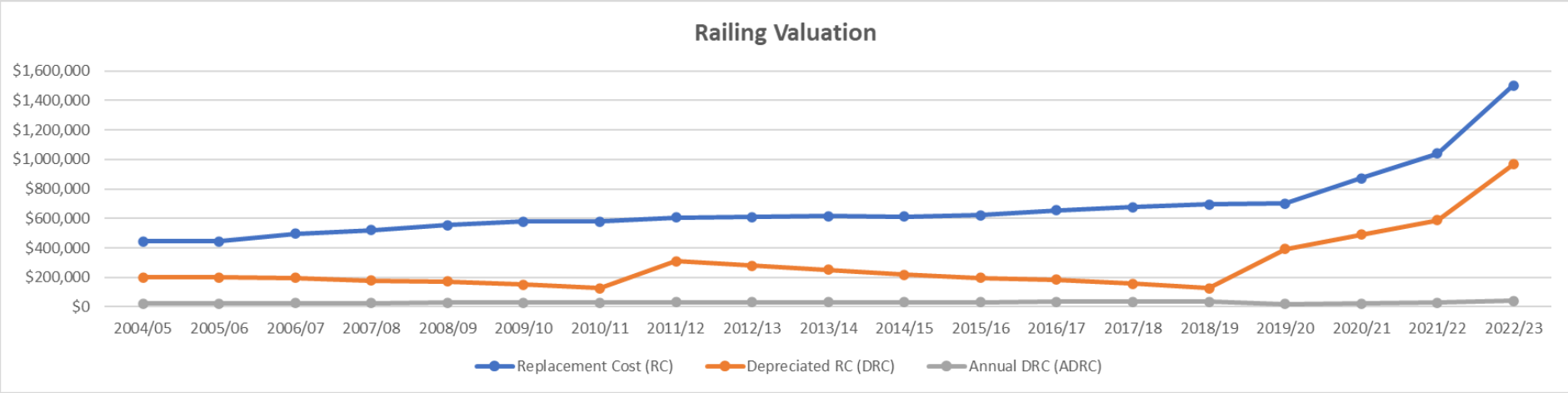
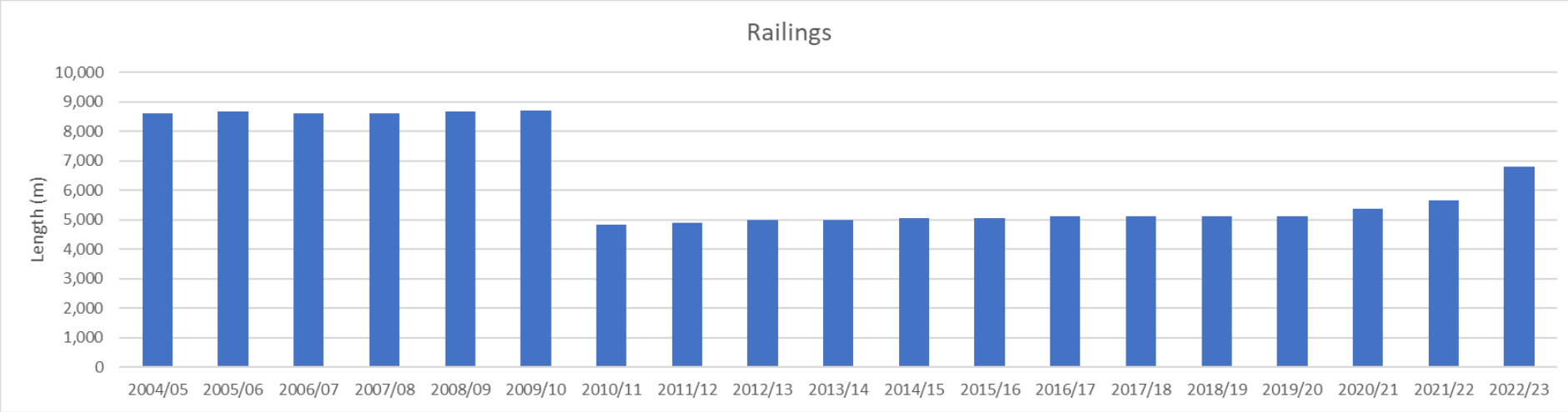
$40,000,000
$35,000,000
$30,000,000
$25,000,000
$20,000,000
$15,000,000
$10,000,000
$5,000,000
$-
1998/99 1999/00 2000/01 2001/02 2002/03 2003/04 2004/05 2005/06 2006/07 2012/13 2013/14 2014/15 2015/16 2016/17 2017/18 2018/19 2019/20 2020/21 2021/22 2022/23
Replacement Cost (RC)
Depreciated RC (DRC)
Annual DRC (ADRC)


Channel Valuation
$60,000,000
$50,000,000
$40,000,000
$30,000,000
$20,000,000
$10,000,000
$-
1998/991999/002000/012001/022002/032003/042004/052005/062006/072007/082008/092009/102010/112011/122012/132013/142014/152015/162016/172017/182018/192019/202020/212021/222022/23
Replacement Cost (RC)
Depreciated RC (DRC)
Annual DRC (ADRC)


Total Channel Length
Length (m)
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
1998/99
1999/00
2000/01
2001/02
2002/03
2003/04
2004/05
2005/06
2006/07
2007/08
2008/09
2009/10
2010/11
2011/12
2012/13
2013/14
2014/15
2015/16
2016/17
2017/18
2018/19
2019/20
2020/21
2021/22
2022/23





Source: Transportation Valuation Summary (BECA)

4.3.3 Valuation Assumptions

4.3.3.1 *Pavements*

Pavements are the most valuable asset group of the network. Pavements are depreciated on a straight-line basis using relevant RAMM data and the assumptions outlined below. Unit rates are supplied by Council.

4.3.3.2 *Footpaths*

Footpath basecourse and surfaces are depreciated on a straight-line basis in relation to asset condition.

The expected useful lives vary for materials including 30 years for asphalt and 80 years for concrete.

4.3.3.3 *Kerbs and Channels*

Kerbs and channels are depreciated on a straight-line basis in relation to asset condition.

The expected useful lives vary for materials and design. 50-80 years is typical.

4.3.3.4 *Bridges*

Bridges are depreciated on a straight-line basis. Assets have been allocated a base life of between 50 and 150 years depending on the type of material they are made of. Below is a list of bridge useful lives adopted for the recent Council road network valuation.

The bridge useful lives adopted for the recent Council road network valuation are as follows:

- Concrete before 1972- 100 years
- Concrete after 1972 – 150 years
- Steel – 100 years
- Timber – 70 years
- Armco Culvert – 50 years

The expected life of each structure has been calculated based on the known construction date and the current condition (used to calculate the remaining life).

4.3.3.5 *Street lighting*

Poles and brackets are depreciated on a straight-line basis with asset age based on known or assumed installation dates.

Lamps have been depreciated on a straight-line basis based on an assessment provided by the Contractor.

The age of the streetlight asset varies considerably.

Council is currently completing the three-year program to upgrade its non-LED streetlight to LED streetlights. Non-LED streetlight RUL have been amended to reflect the three-year program.

4.3.3.6 *Traffic Services*

Signs are depreciated on a straight-line basis assuming the asset is halfway through its expected life of 10 years.

Road markings are not valued or depreciated as these are considered a maintenance activity.

More information is included in Section 9a “Lifecycle Management” in this AMP.

4.4 Issues

Improvement Plan items

IP 4.1 Ensure ONRC length is the same as District Plan length. There is a very minor discrepancy at the moment.

IP 4.2 Review current ONRC hierarchy. Identify whether existing classification is fit for purpose given ADT growth.

5.0 ROAD SAFETY

Contents

Headline 5.1:
The Selwyn Road Safety Strategy to 2020 is the key document. It links Selwyn's approach to Safer Journeys and directs the works and actions in this AMP.

5.1 Road Safety Management

Council is very conscious of its responsibility to improve road safety and is committed to providing engineering, education and enforcement solutions to address safety issues on its network.

To this end the Council has developed a Selwyn Road Safety Strategy to 2020 (Road Safety Strategy) that aligns National and Regional safety priorities with the District's safety issues.

The Road Safety Strategy is the overall guide for road safety in Selwyn and provides a framework for "Vision Zero" that aims for "Zero deaths and serious injuries on Selwyn roads". This is underpinned by the overall goal of the Strategy to "Progressively Reduce the number and severity of Road Crashes in the Selwyn District".

The Road Safety Strategy includes an Action Plan attached that describes what targeted actions Selwyn District and our Road Safety partners will undertake to achieve "Vision Zero".

For example, Alcohol has been highlighted for priority action in the Road Safety Strategy. In the Action Plan, different activities have been identified to reduce the occurrence of alcohol related crashes. These include:

- Working with hotels and taverns to promote the use of courtesy vans and using advertising to promote awareness of the dangers of drink driving.
- Working with Police and other stakeholders to support sober driving.

These actions are reviewed to determine the effectiveness of these measures.

Additionally, Council has a Safety Management System (SMS) that ensures safety is a component of all decisions in Selwyn. This includes planning, capital works, maintenance and user services.

Progress in implementing the Strategy is regularly reviewed by Council's Road Safety Subcommittee that consist of two Councillors, Council staff, Police, ACC and a representative from New Zealand Trucking Association.

The Road Safety Coordinator fulfils a hands-on role, overseeing programmes and liaising with other stakeholders; as well as providing education programmes directly. This is a very tangible front for the road safety message which is well received throughout the district. In addition, staff deliver road safety education and work with schools to see their School Travel Plans implemented.

Crash records are kept by the NZTA, which also publishes annual road safety reports for each Road Controlling Authority (RCA). Crash records are also accessible in RAMM. Additionally, the Agency maintains a crash analysis system (CAS) that records full details of all reported crashes in New Zealand. The NZTA gives Council access to this database for extraction of relevant crash information. This is used to ascertain accident trends in the district.

Funding is available for Road Safety through the following work categories below:

- Work Category 341 – Low Cost/Low Risk (Local Road) Improvements. (up to a value of $1,000,000 per project).
- Work Category 432 – Promotion, education and advertising. This category is used to promote the safe use of the land transport network through education, advertising, raising awareness and provision of public information.

In addition, Council and NZTA undertake safety audits to identify issues across the network and/or Council's management of the network. These audits include:

- Road Infrastructure Safety Assessment (RISA).
- Safety audits before and after construction projects.
- NZTA Technical Audits.
- Maintenance Contract Safety Audits.

Council's Road Safety Subcommittee was involved throughout the development of the Road Safety Strategy. There was also a high level of integration with the Regional Road Safety Working Group (a Regional Transport Committee sub-group). Both Council's Road Safety Subcommittee and the Regional Road Safety Working Group meet regularly to coordinate actions and monitor progress.

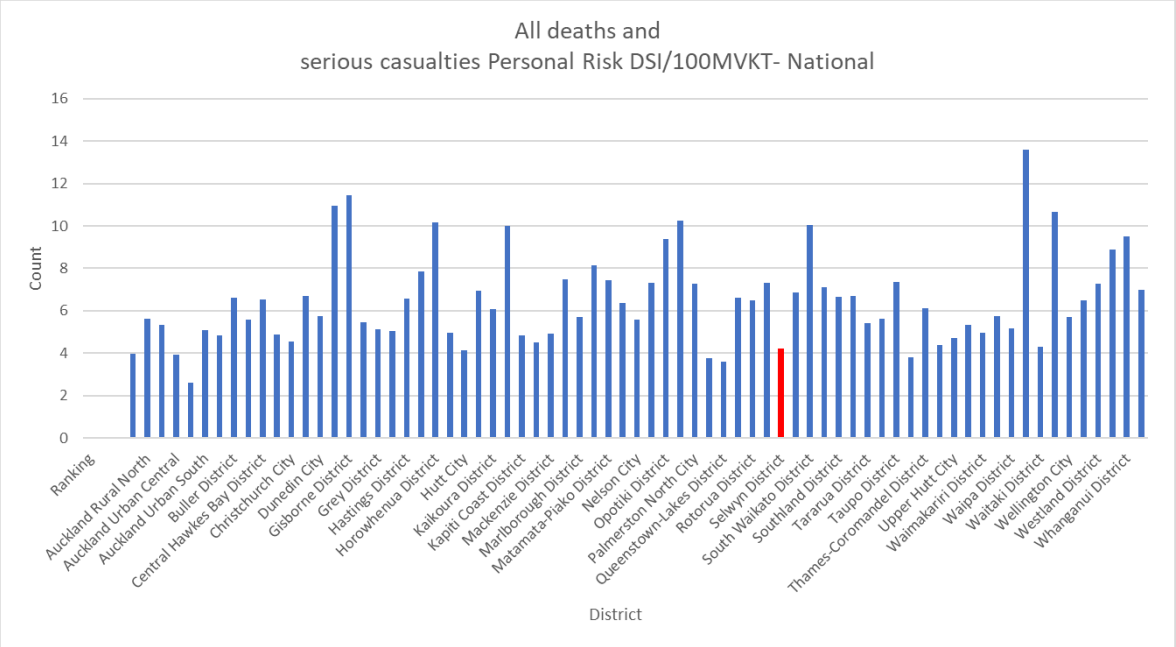
5.2 Funding of Road Safety Promotion

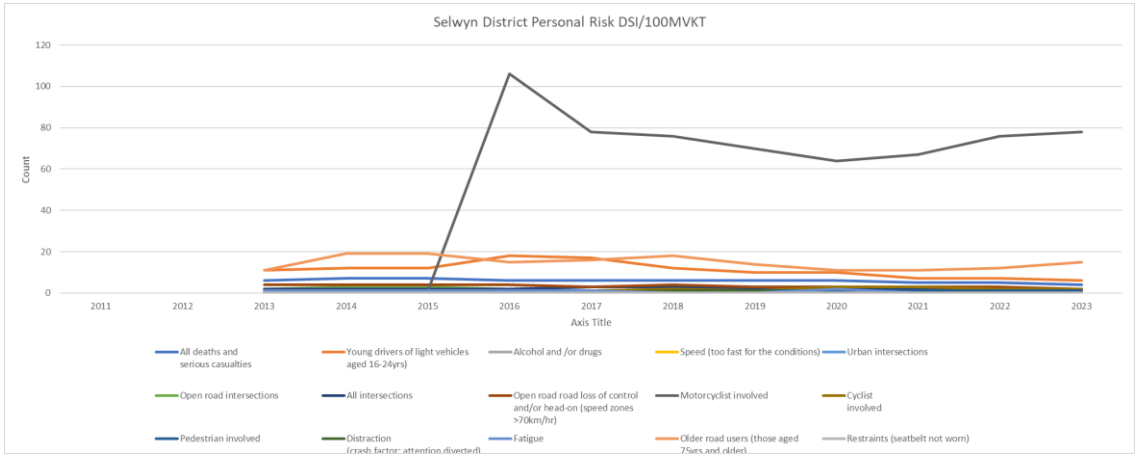
Road Safety Management activities are eligible for financial assistance from NZTA. The funding assistance levels are dependent upon alignment with NZTA objectives as detailed in 'Safer Journeys'. Council places a high priority on Road Safety and funds part of the Road Safety program directly without NZTA subsidy.

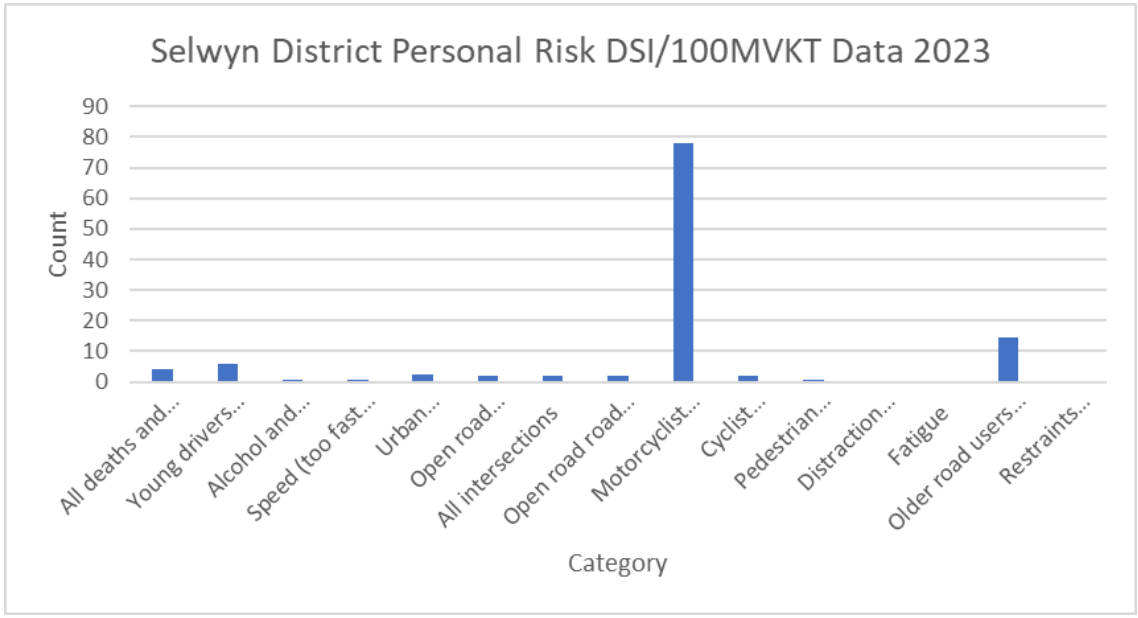
The alignment of initiatives with NZTA priorities is assessed as shown in Table 5-1 below.

Table 5-1: Alignment of Initiatives with NZTA Strategic Fit

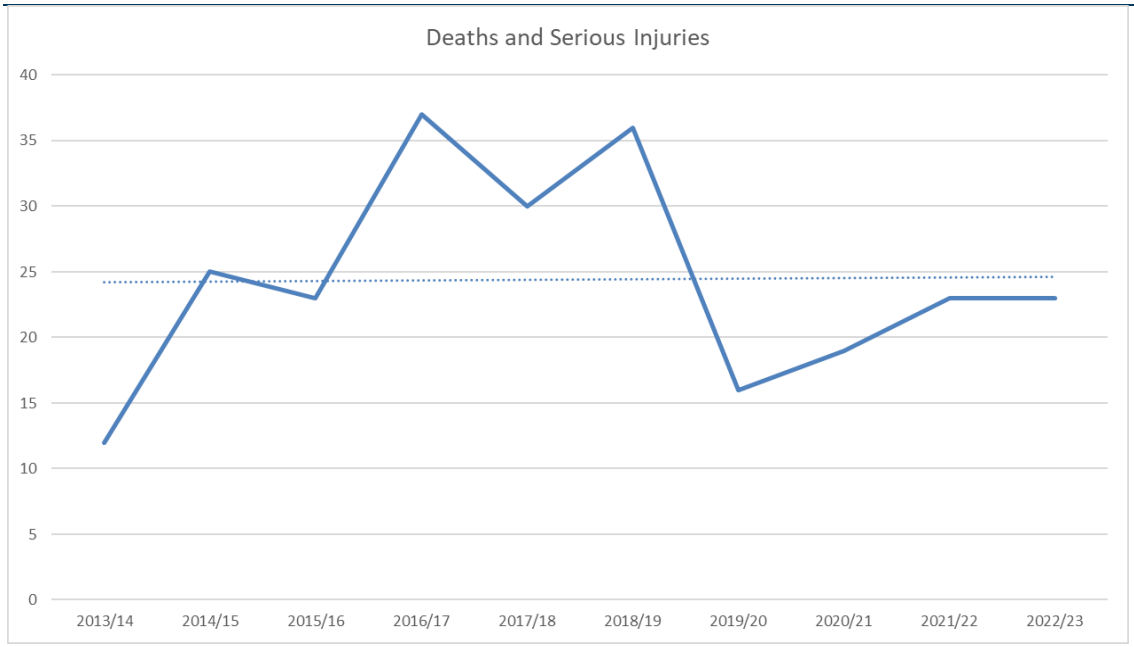
Strategic Priority	Crash Category
High	Alcohol/Drugs Intersections (Rural/Urban/All) Motorcycles Speed/Too Fast For Conditions Rural Roads and Roadsides/Loss of control/Head-on Young Drivers (aged 16-24)
Medium	Distraction/Attention Diverted Fatigue Cyclists Pedestrians
Emerging	Older road users (aged 75 and over) Restraints/Seatbelt Not Worn





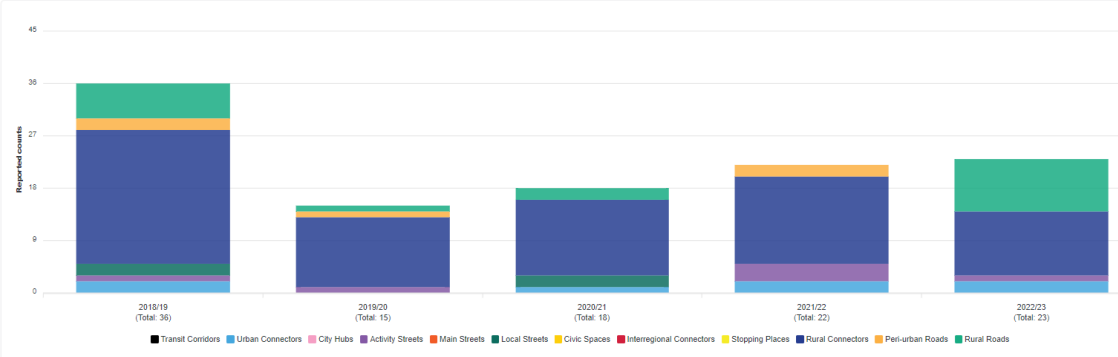


Source: Communities At Risk 2011 – 2023 (Waka Kotahi)



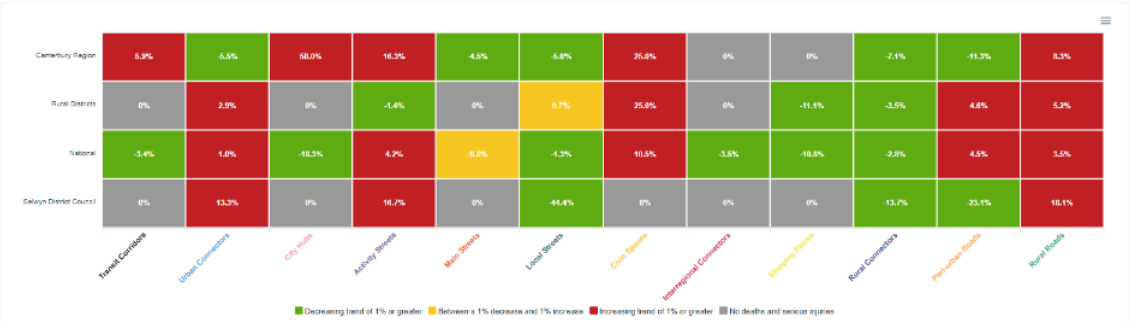
Counts by year

This chart shows the cumulative deaths and serious injuries counts for the last five years, for the categories that are selected. Select Urban or Rural or specific categories to see the combined counts for those categories.



Trend Heatmap

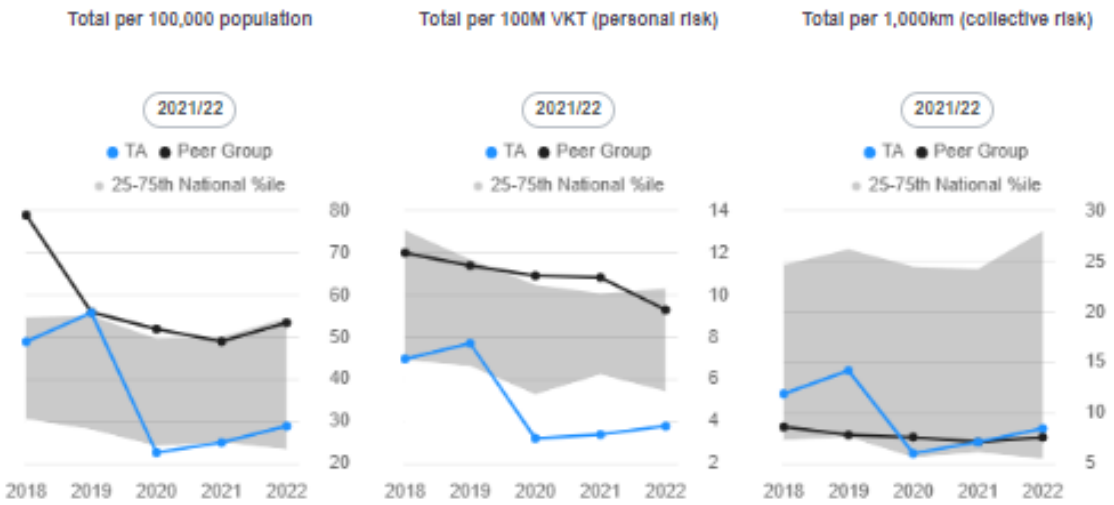
This heatmap shows whether the annual deaths and serious injuries count for each category over the last five years is getting worse (Red), reducing (Green), staying the same (Yellow), or there is no deaths and serious injuries in the category (Grey). The heatmap compares the RCA with their peer group, region and the National figures. The percentage is calculated by dividing the five year trend by the average count across the five years. E.g. if there was an average of 10 deaths and serious injuries per year and the trend is increasing by 1 per year, the percentage will be 10%.



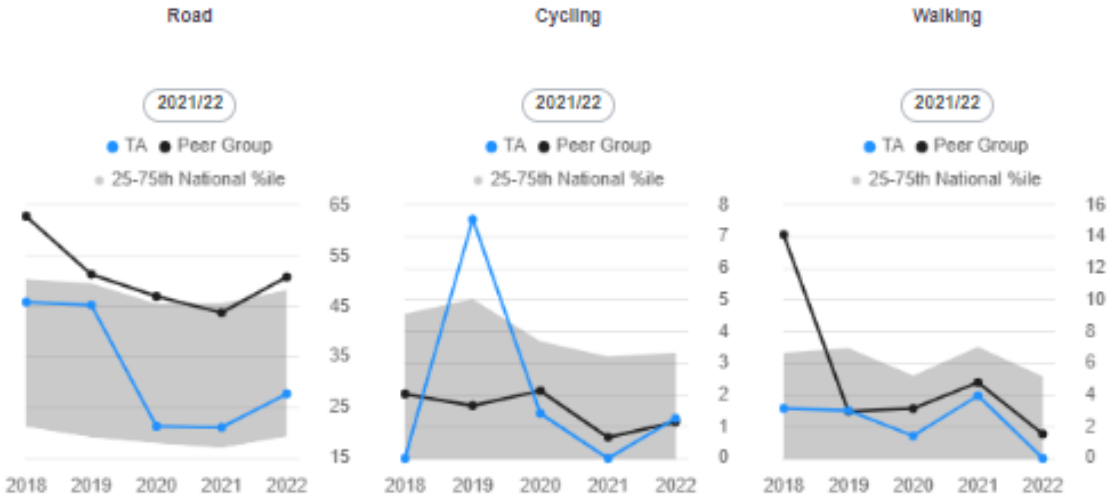
Safety

Fatal and Serious Injuries

Network

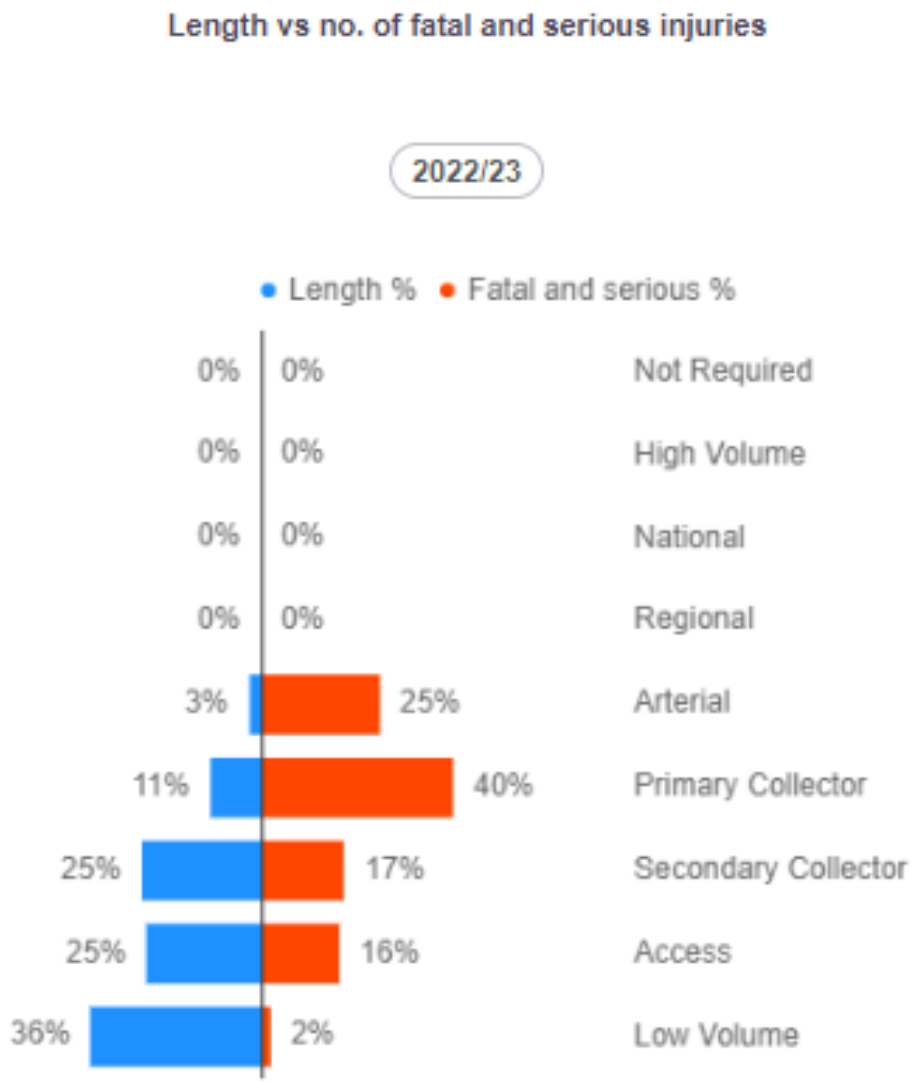


By Mode (no. per 100,000 Population)



Analysis of DSI measures (REG RCA Report)

Crash Distribution



The indicative budgets for 2024/25 to 2033/34 are shown in Table 5-2 below and the crash categories are included in the budgets.

Table 5-2: 10 Year Financial Forecast for Road Safety

WC	WC Description	Activity Breakdown	24/25	25/26	26/27	27/28	28/29	29/30	30/31	31/32	32/33	33/34
432	Road Safety Promotion	Total Cost	395,000	423,000	452,000	470,080	488,883	508,439	528,776	549,927	571,924	594,801

Source: SDC MOR & RSP 2024-34 Projection for RLTP

5.3 Funding of Low Cost/Low Risk Improvements

This Work Category (previously called Minor Improvements) provides for the construction / implementation of low cost/low risk improvements to the Transport system to a maximum total cost for approval per project of $1,000,000.

Council staff collated list of problem intersections in its Deficiency Database and Minor Improvements Database. The list has been informed from community feedback and/or Council's staff local knowledge.

It was necessary to develop a methodology to prioritise intersection improvements as it was not practical to upgrade every intersection in the Minor Improvements and Deficiency Database. This was done.

Three criteria are used to prioritise intersection upgrades. They are:

- Collective Risk (Number of Crashes or Number of Injuries).
- Personal Risk (Traffic Volumes / Crash or Injury).
- Number of Crashes or Injuries.

Additional information used to inform intersection priority are:

- % Growth in Traffic.
- % Growth in Heavy Vehicles.
- Number of intersection legs.

5.4 KiwiRAP

The 2015 AMP suggested the introduction of the KiwiRAP tool would assist in identifying intersections and midblock sections in the Selwyn District that were more susceptible to collective and/or personal risk. Council's experience is that the low crash numbers combined with long stretches of road means the predictive model does not have the required data to run effectively.

In response, Council has instead utilised a first principles approach which is outlined in Section 5.3.

5.5 Safety KPI's

Section 6, Levels of Service shows Council's performance against the relevant Safety KPI's.

5.6 Issues

Safety remains a key issue and balancing cost with delivering results is a challenge for Council. Joint initiatives are the most effective and Council will continue to work with other agencies as budgets allow.

IP 5.0 *A range of initiatives and projects are identified within the Road Safety Strategy, so few other Improvement Plan items are required.*

IP 5.3 Formalise protocols for Safety Audits

6.0 LEVELS OF SERVICE (LOS)

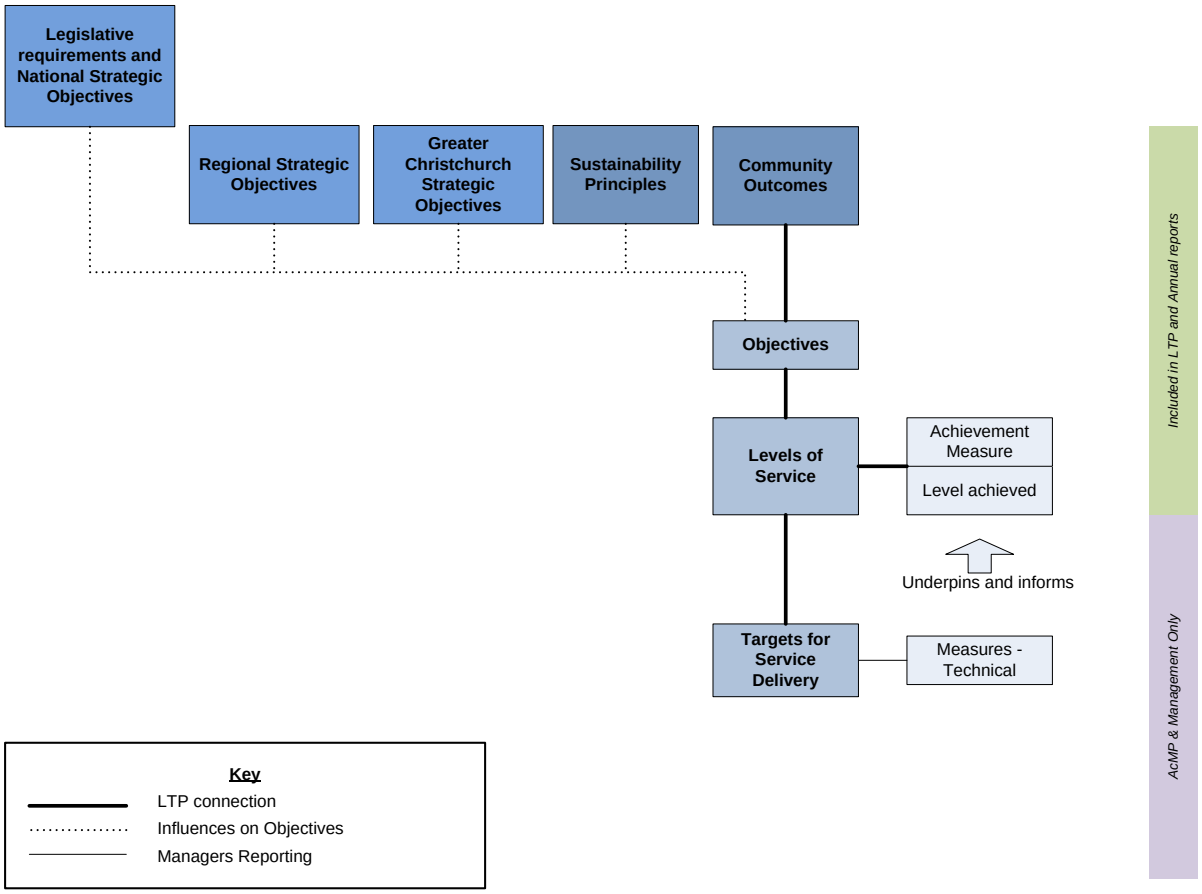
The Levels of Service LoS for the Transportation Activity are defined in this Section in addition to the performance measures by which the LoS will be assessed against. The LoS are aimed at supporting the Community Outcomes and meeting strategic goals. Included in this section is a description of how Council strikes the balance between NZTA's LoS as prescribed through the ONRC and Council LoS as prescribed through Community Outcomes.

Contents

6.1 Introduction

Objectives and LoS have been developed to reflect community and regulator expectations. Targets are established which indicate the standard that should be met. Objectives are relevant across the Transportation activity while Levels of Service statement are more specific. The following diagram details the structure and linkage via legislation, strategies, sustainability and Community Outcomes.

Figure 6-1: Linkage via Legislative, Strategies, Sustainability and the Community Outcomes



6.1.1 Objectives

The following objectives have been developed with reference to Council's existing Community Outcomes, Sustainability Principles and the Four Aspects of Well Being. They are designed to protect the wellbeing of existing and future generations.

Table 6-1: Transportation Objectives

	Objectives
1	Provide a well maintained, operated and affordable land transport system
2	Cater for any significant projected traffic increases in a sustainable manner
3	Pedestrians, cyclists and motor vehicle users can safely move around the Selwyn district
4	Contribute to an integrated and responsive local and regional transportation system

The generic wording of these objectives is intentional so as to be applicable across the Transportation activity. This ensures that they can be used to evaluate and prioritise the benefits of any proposed projects or improvement measures, across the activity.

LoS statements are more specific than objectives and may apply to one or more of the asset groups and programmes within the activity. These statements are written in a manner that can be understood by non-technical readers but are often linked with more technical definition.

LoS must be measurable. The performance measures that have been attributed to each LoS are specified to ensure:

- They can be benchmarked wherever possible and desirable.
- They are mutually independent of each other.

6.2 Community Outcomes- Relevance to LoS and Linkages

Community Outcomes are at the heart of the LTP. They are the overarching goals that the community considers important for the economic, social, environmental and cultural well-being of the area.

Everything that the Council does in its day-to-day work is focused on achieving community outcomes. All activities outlined in this Strategy aim to deliver the results required to achieve these outcomes, contribute to community wellbeing, align with Council strategies, and meet legislative requirements.

The Community Outcomes are reflected through Council's other strategic, tactical planning and operational documents such as service delivery contracts. Where the Community Outcomes are outside of Council's areas of responsibility amendments have been made.

More information on our Community Outcomes can be found in the LTP, including the roles Council will take and who we will partner with to contribute to and advance community wellbeing.

Headline 6.1:
The Levels of Service used in this include the Mandatory Performance Measures introduced through the 2013 changes to the Local Government Act.

Headline 6.2: Transportation contributes to a range of wellbeing and community outcomes.
The focus is on those identified as a "key link".

Table 6-2: 2024-34 Community Outcomes

Environmental: Waikirikiri | Selwyn's whenua | land, wai | water and Taonga o te Taiao | biodiversity are protected and enhanced. Our towns are cleaner and greener and we address climate change	
A clean | taiao environment	
We will live within our air, soil, water, and Taonga o te Taiao | biodiversity limits	✓
Healthy wai | water, wetlands, and waterways	
We utilise smart and toitū | sustainable practices	✓
Te Waihora / Ellesmere being restored	
Liveable low carbon towns	
Growth that consolidates and intensifies towns	✓
A town network supported through their strong inter-connections	✓
Protect productive and diverse land	
Important land, landscapes, and features are valued	
Our biodiversity, including indigenous Taonga o te Taio | flora and fauna, is thriving	
Social: Waikirikiri | Selwyn is a resilient district and a great place to live, work, and play; where our takata | people support each other, enjoy spending time together and feel a sense of honoka | connection	
Honoka | Connected community	
We have good health, social, and community facilities that are accessible to all residents of the district	
We have access to a range of community services and activities that support wellbeing	
We have access to housing which suits the changing needs of the diverse demographics within our district	
We have affordable ways to easily connect with the facilities, services, and communities within and outside of our district	✓
We have cohesive communities that support volunteering and build capacity.	
Strong neighbourhoods	
We are safe at home and in the community	✓
We are ready for emergency events and disasters	✓
We can effectively respond to, and recover from, emergency and disaster events	✓
Active and educated community	
We have access to good quality information and a range of lifelong learning opportunities	
Everyone who lives in and outside of the district can enjoy our environment	
We have access to resources to help our takata | people increase their bi-cultural competency and cultural knowledge	
We can participate in community life	
We can play and be physically active	✓
Economic: Waikirikiri | Selwyn is a prosperous diverse economy that employs and empowers our takata | people and invests in our towns and communities	
A district of opportunity	
Local businesses support each other	
There are employment opportunities for our takata | people	
Innovation and investment are fostered	
There is a strong diverse economy, supported by a sustainable rural sector	✓
The district is a key regional freight and logistics hub supported by an efficient freight network	✓
Quality innovative infrastructure	

Our infrastructure is adaptive and resilient	✓
Our transport system is effective and accessible with a range of choices	✓
Cultural: Waikirikiri | Selwyn is a collection of connected multicultural and diverse communities. We have mana upholding partnerships which allows our takata | people to thrive, and everyone has a place to call home	
A district which values its culture and heritage	
Our district celebrates its arts and culture; our traditions are carried with us	
Local and cultural history and heritage are preserved, shared, and promoted.	
Our wāhi taonga | places of tribal significance, wāhi tapu | sites of special association, and wāhi ingoa | place names are protected	
Inclusive communities	
Each town's unique identity as well as the rural identity, are promoted	
Active, responsive, and respectful partnerships with Mana whenua and Tangata whenua	
The identity of Mana whenua communities is promoted	

The achievement of Community Outcomes can be assisted through the delivery of required LoS. The LoS have been reviewed to ensure they adequately cover previously adopted LoS and align with the Community Outcomes.

More specific actions can contribute to the broader Community Wellbeing that the Community Outcomes aspire to. Some of these actions are listed below and may contribute to more than one well-being at a time.

Environmental	By providing dust-free surfaces on roads where economically viable. By providing an efficient and sustainable transportation system, including non-polluting transport options, that contributes to the reduction of exhaust emissions. By providing efficient and appropriate urban road stormwater collection and treatment systems (in conjunction with Utility Stormwater Activity Management practices). By installing and providing bridges and culverts in environmentally sensitive ways. By controlling the contamination of drainage and other adjoining waterways from inappropriate activities occurring in the road corridor. By allowing, in environmentally sensitive ways that do not create a hazard, areas of native and other vegetation of significance to remain on roadsides and unformed roads. By reinstating or providing vegetation to be established where practical in conjunction with specific roading, bridge and other significant projects. By designing, constructing, maintaining and upgrading: • Roads, intersections and other transport facilities to industry standards and best practice were hazards have been identified. • Bridges, culverts and stormwater structures in a manner that minimises hazards to road users. Warning, advisory and regulatory signs on the road and transportation network advising of hazards. By planning, designing, constructing, maintaining and upgrading the road and transport network in a manner that considers future needs, alongside those of existing users. By designing, constructing, maintaining and upgrading township and village streetscapes in a manner that balances the needs of transport users with the amenity values sought by those settlements. By appropriately landscaped and functioning urban streets.

Economic	By designing, constructing, maintaining and upgrading the road and transport network to achieve a robust and flexible system for the movement of people and freight, including facilities for pedestrians, cyclists, public transport and other non-motor-vehicle-based road users.
	By designing, constructing, maintaining and upgrading the road and transport network in a manner such that: • The full social and economic costs and benefits of significant projects are taken into consideration. • The transport network is reliable and affordable. • The utilisation of demand management techniques to reduce the dependence on new roads and the upgrading of existing roads resulting from growth.
	By consulting on all known and potential matters of interest to the mana whenua.
	By undertaking road and transport activities in a manner that is sensitive to the heritage of the District.
	By ensuring that people are: • Advised of, and have the opportunity to be heard on, matters that affect them. • Provided adequate information to enable informed views on matters that affect them.
	By designing, constructing, maintaining and upgrading roads, and transport facilities in a manner that minimises hazards and improves safety.
	By designing, constructing, maintaining and upgrading roads, and transport facilities in a manner that minimises hazards and improves safety.
	By undertaking and promoting educational and behaviour change initiatives to raise awareness and reduce the risk to people.
	By providing network connections that ensure access is available to recreational opportunities and facilities.

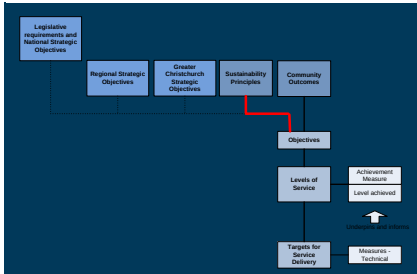
6.3 Sustainability Principles Linkage to LoS

The sustainability principles adopted by Council are inherent in the LoS developed for the Transportation Activity.

Table 6-3 below shows the link between sustainability principles and objectives. Shaded cells are used to identify instances where the link between sustainability principles and objectives are strong.

Should Council intend to amend the LoS or Objectives in future, the sustainability principles should be considered in that Review.

Table 6-3: Relationship between Objectives and Principles

 **Objectives**	**Sustainability Principles**						
	Make decisions based on the four aspects of well-being	Observe the Precautionary Principle to provide contingency and enable adaptability of our community	Seek "intra-generational" and "inter-generational" equity	Internalise environ-mental and social costs	Foster community welfare	Act to halt the decline of our indigenous biodiversity and maintain and restore remaining ecosystems	Consider, and promote the sustainability of our neighbouring communities and work with governing bodies for sustainable outcomes
Provide a well maintained, operated and affordable land transport system							
Cater for any significant projected traffic increases in a sustainable manner							
Pedestrians, cyclists and motor vehicle users can safely move around the Selwyn district							
Contribute to an integrated and responsive local and regional transportation system							

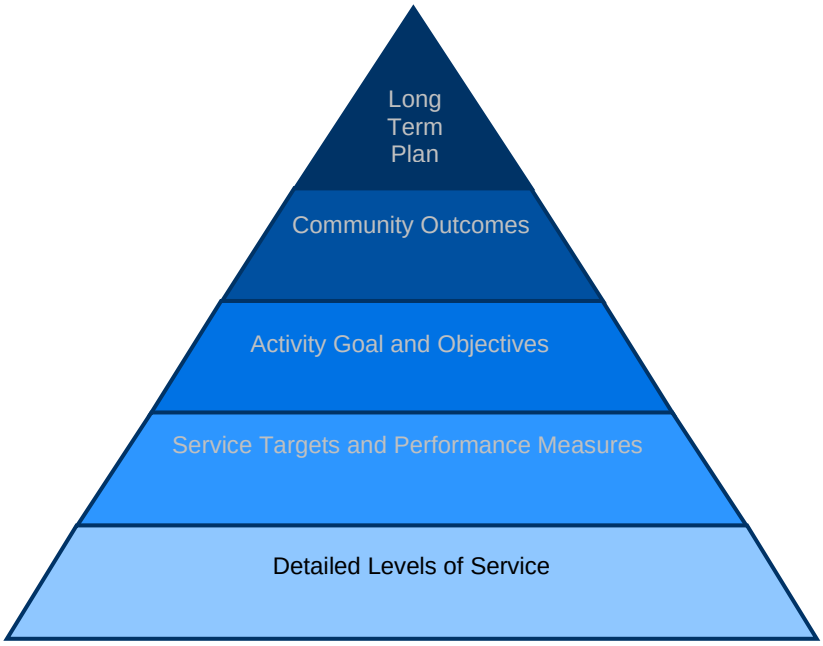
*NB These Sustainability Principles are currently under review.

6.4 LoS Linkages

LoS and performance reflect the planning hierarchy as illustrated in Figure 6-2 to **Error! Reference source not found.**.

Figure 6-2 illustrates the hierarchy of Levels of Service from the strategic level comprising the Long Term Plan philosophy and Community Outcomes through tactical planning and service delivery specific to the Transportation Activity.

Figure 6-2: Level of Service (LoS) Hierarchy



Error! Reference source not found. shows how the community wellbeing and other Council priorities are aligned through planning and LoS to specifications; while **Error! Reference source not found.** illustrates the linkages associated with LoS as a process diagram.

6.4.1.1 *Performance Rating - Residents Survey*

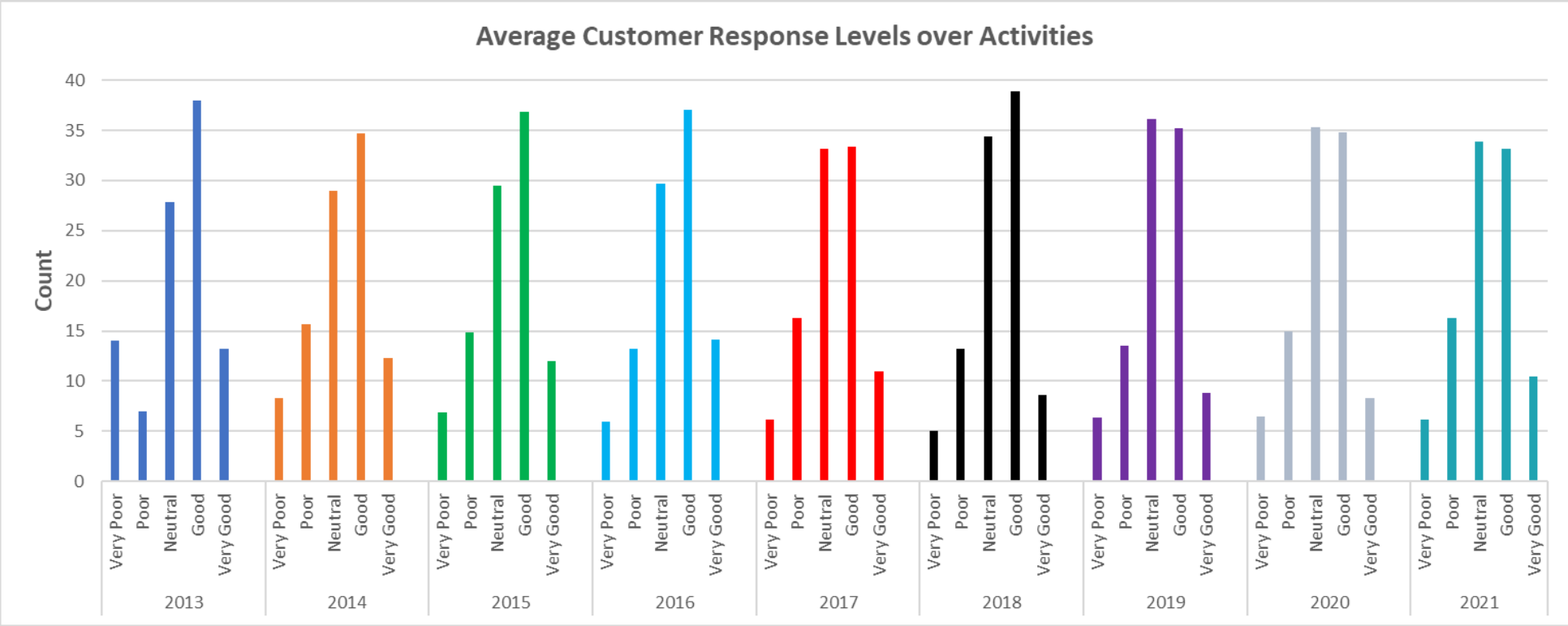
Council gains its knowledge of customer expectations and concerns using information and feedback from its annual Resident Surveys. The two most consistent sources to provide the long-term tracking and analysis are the annual resident's survey and the customer service request system.

This is because the questions asked, or the format used to record information has been roughly consistent up to 2012. This provides a basis for trend identification of resident satisfaction.
Regular resident surveys can provide a broad understanding of resident satisfaction. However, care should be taken when linking an increase or decrease in satisfaction to a specific LoS as correlation does not always equal causation.

Council undertook its first Residents Survey in 1999 to better understand how satisfied residents are with Council services. Subsequent surveys were conducted biennially until 2012 when it was decided that the Resident survey should occur annually. The methodology of the survey also changed post 2012 onwards.

While the surveys do not have an explicit activity management focus, it provides insight into customer satisfaction with different aspects Council services. The asset management function can use this information to inform how it responds to perceived deficiencies.

The responses are summarised in **Error! Reference source not found.** below.



Source: Selwyn DC Residents Survey

6.4.2 Adoption of LoS

Council adoption of LoS is via the following process:

- Any primary LoS changes are considered via the Councils LTP program.
- Changes to the secondary LoS have been considered via the LTP committee.

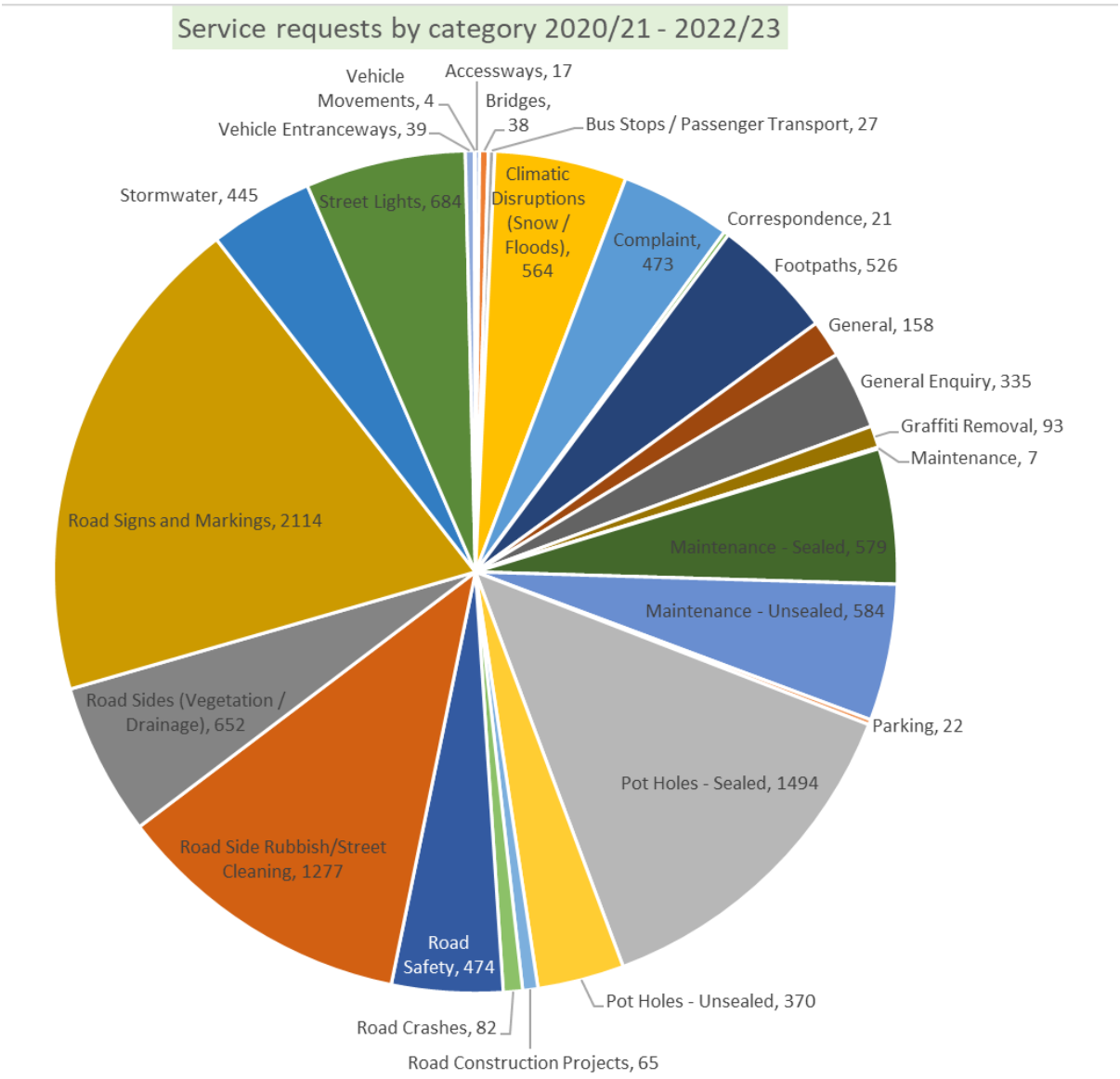
6.4.3 Service Requests

The corporate NCS Service Request system is used to record Service Request.

Figure 6-4 below shows the average number of annual Service Requests recorded between 2020/21 and 2022/23.

Headline 6.5: The number of service requests received is increasing in line with population and traffic numbers Council has promoted the system and residents are encouraged to call-in

Figure 6-3: Average Composition of Service Requests



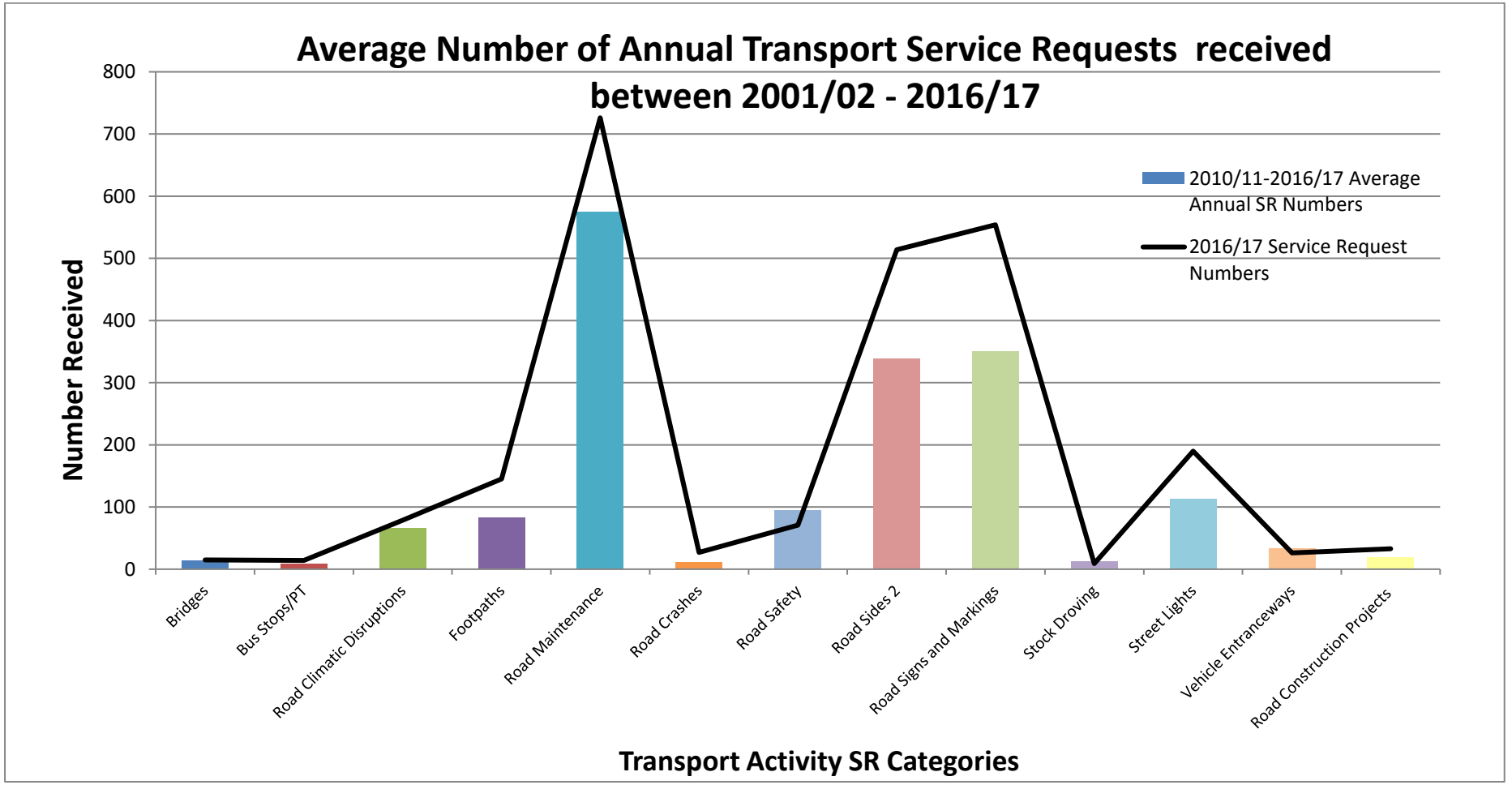
Source: Transportation Service Request Analysis Summary

Notes:

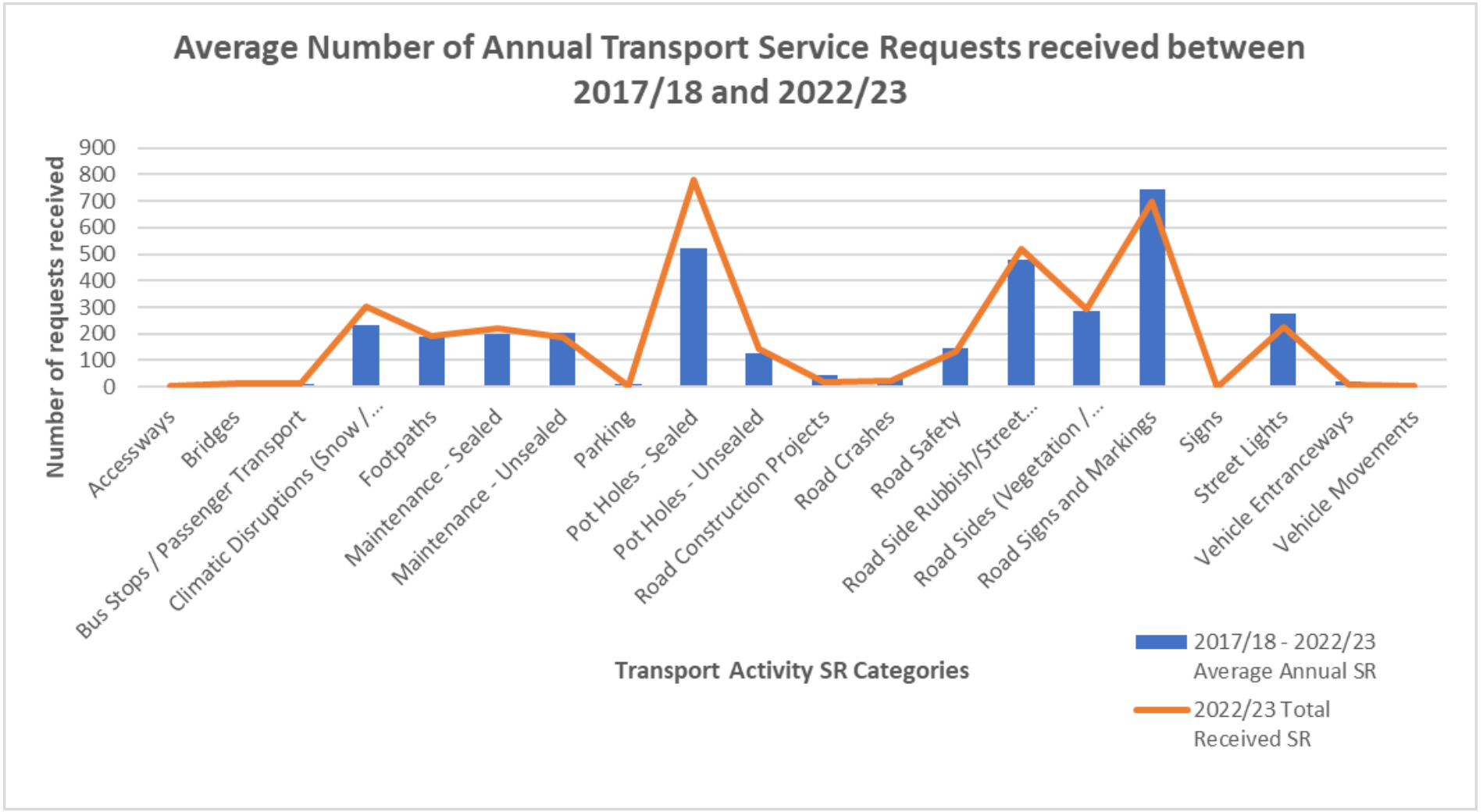
[1] Includes previous "Construction Projects" category

[2] Includes previous "Road Side Vegetation Control" and "Road Side Drainage Facilities"

Figure 6-4: Average Annual Transport Network Service Requests



Source: Transportation Service Request Analysis Summary


Average Number of Annual Transport Service Requests received between 2017/18 and 2022/23
Number of requests received
900
800
700
600
500
400
300
200
100
0
Accessways
Bridges
Bus Stops / Passenger Transport
Climatic Disruptions (Snow /...
Footpaths
Maintenance - Sealed
Maintenance - Unsealed
Parking
Pot Holes - Sealed
Pot Holes - Unsealed
Road Construction Projects
Road Crashes
Road Safety
Road Side Rubbish/Street...
Road Sides (Vegetation /...
Road Signs and Markings
Signs
Street Lights
Vehicle Entranceways
Vehicle Movements
Transport Activity SR Categories
2017/18 - 2022/23 Average Annual SR
2022/23 Total Received SR

- The highest average service request category shown is “Road Signs and Markings” where, like road maintenance, issues of concern are perhaps more immediate and easily identifiable.
- For 2022/23 alone, the highest service request category is “Potholes - Sealed” which was a result of increased traffic and bad weather. The performance rating for sealed road maintenance was also very low with only 23.66 km resealed out of a target of 75 km – just over 30%.
- Another significantly high category is Roadside Rubbish/Street Cleaning. This may have been caused by high winds knocking off rubbish bins and spilling contents in the streets.

From 2009, the LTP has utilised a grouping of these individual, but related service request areas to create more simplified Service Target Categories. This method has been continued for the 2024 AMP. The specific service target levels are summarised in the following categories:

Road Maintenance, Works and Operations

- Road Maintenance
- Road Signs and Markings
- Roadsides
- Vehicle Entranceways
- Road Climatic Disruptions
- Road Construction Projects
- Bridges

Streetlights

- Poles
- Lamps and brackets

Road Safety

- Road Safety
- Road Crashes

Walking Cycling and Public Transport

- Footpaths
- Bus Stops/PT

A summary of the contacts recorded in the Service request system, and sorted into these groupings follows:

Table 6-4: Summary of Customer Contacts – Transportation Network

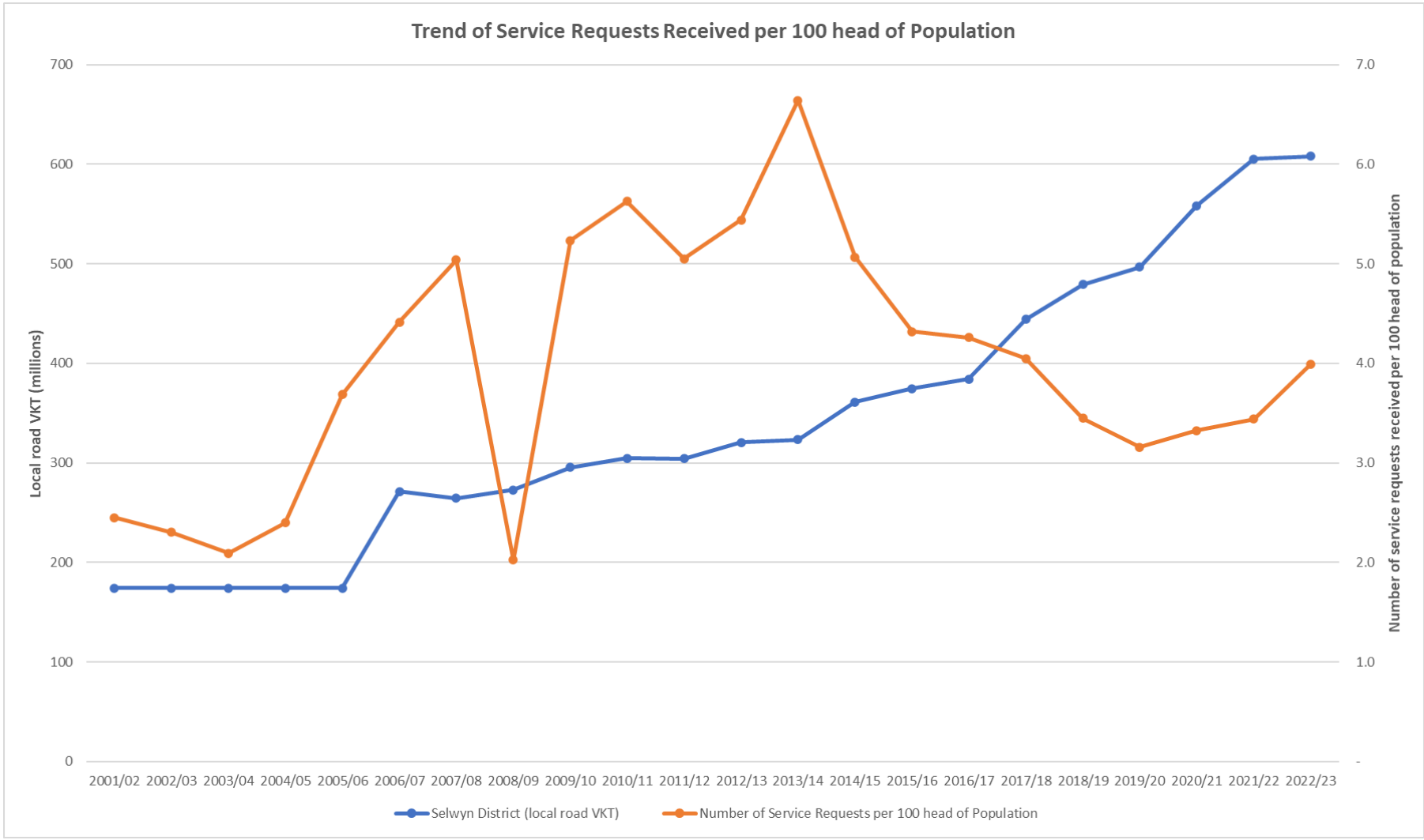
Main Category	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	Average	Percentage
Road Maintenance	589	543	505	600	940	1186	1501	623	1656	1867	1769	2018	2541	2088	1936	1947	1928	1666	1608	1689	1971	2357	1524	84%
Street Lights	23	37	48	57	88	156	113	54	128	167	138	113	197	142	146	190	232	242	212	233	224	227	144	8%
Road Safety	39	58	46	44	109	77	128	48	170	175	159	148	197	121	80	98	86	113	136	229	170	157	118	7%
Walking Cycling and PT	43	35	42	53	67	105	98	35	97	81	94	119	150	155	130	159	174	160	133	182	166	205	113	6%
Stock Droving	0	9	5	18	27	17	10	13	22	18	7	18	16	8	2	9	10	2	4	1	1	1	10	1%
Total	694	682	646	772	1231	1541	1850	773	2073	2308	2167	2416	3101	2514	2294	2403	2430	2183	2093	2334	2532	2947	1908	105%

Source: Transportation Service Request Analysis Summary

Figure 6-5 below shows the number of annual Service Requests plotted against population growth. It shows that since 2006 the service requests per head has reduced (BERL population figures used).

As the District population and distance travelled (VKT) increase, an increase in service requests is expected. Additionally, Council actively encourages residents to contact Council and use the use service request system to report faults.
It is worth noting that the number of Service Request per head of population has dropped despite the increase in VKT on Selwyn's local road network.

Figure 6-5: Annual Transport Network Service Requests per Person:



Source: Transportation Service Request Analysis Summary

6.4.4 Service Life of Facilities and Network

The service life of the Transportation system can be influenced by factors outside the actual expected lives of the individual assets within the Transportation Activity.

This is shown below where the infrastructure life is compared with the services planning documents.

Figure 6-6: Service Life of Networks and Facilities

Planning Document	Planning Window				
LTP – Committed Budgets	3 years				
Community Outcomes		6 years			
LTP		10 years			
Road Pavement Surfacing			11-19 years		
AMP			10-20 years		
Regional Land Transport Strategy				30 years	
Urban Development Strategy				30 years	
Road Pavement Structure					70 years +
Other Assets				50-100 years	

The risks associated with the service life of the network are considered at many stages and further discussed in Section 8 - Risk Management.

6.5 Transportation Levels of Service and Performance Measures

The Transportation Levels of Service statements link Community Outcomes and Service Targets.

Where possible, technical performance measures have been selected to allow for future benchmarking against other service providers. NZTA performance measures have been assessed for relevance and used where appropriate. This set of measures forms the basis of a benchmarking programme being used across a number of local authorities.

The performance measures are mutually independent of each other – this is an important consideration when prioritising improvements and work programmes.

6.5.1 Mandatory Performance Measures

Established by the Department of Internal Affairs in 2013 the Non-Financial Performance Measures Rules 2013 are to be reported by Council on an annual basis. The measures are listed below.

Performance measure one (road safety):
The change from the previous financial year in the number of fatal and serious injury crashes on the local road network, expressed as a number.
Performance measure two (condition of the sealed road network):
The average quality of ride on a sealed local road network, measured by smooth travel exposure (NAASRA).
Performance measure three (maintenance of a sealed local road network):
The percentage of the sealed local road network that is resurfaced.
Performance measure four (condition of footpaths within the local road network):
The percentage of footpaths within a territorial authority district that fall within the level of service or service standard for the condition of footpaths that is set out in the territorial authority's relevant document (such as its annual plan, activity management plan, asset management plan, annual works program or long-term plan).
Performance measure five (response to service requests):
The percentage of customer service requests relating to roads and footpaths to which the territorial authority responds within the time frame specified in the long-term plan.

All these measures can be accommodated within existing Council processes and some existing measures will be amended to reflect the Non-Financial Performance Measures Rules 2013 which are inflexible.

These measures are integrated into Council's suite of reported measures.

6.5.2 One Network Road Classification (ONRC)

In 2014, the Road Efficiency Group released a comprehensive suite of customer and technical LoS that had to be reported on as part of ONRC implementation. N.B. This is discussed further in Section 2.

The suite of KPI's were condensed in 2016 to allow the sector time to adjust to the new requirements. An online performance measure reporting tool was also developed that allowed most of the KPI results to be automatically retrieved from the RAMM system. The figure below shows the interface of the website, called the ONRC Performance Measures Reporting Tool.

6.5.3 Technical Levels of Service

Technical LoS are developed from the agreed customer LoS. These technical standards do not require specific adoption by Council, as they are interpretations of Council's expectations and decisions. They are however represented in any LoS approval process as part of the overall suite of service levels that pertain to Councils transportation activities.

The technical LoS are also important to demonstrate to NZTA that Council is maintaining, operating and improving the transport activity in a manner that provides the Agency with sufficient confidence to continue to provide investment funding from the Councils Land Transport Programme. Indeed, in many cases the technical LoS utilised directly relate to published NZTA technical requirements or guidelines.

The main source of technical LoS monitoring and assessment is through Council's Customer Satisfaction Surveys and RAMM and dTIMS outputs.

Triennial road rating and roughness surveys are undertaken to assess the condition of the sealed network. From this, Council's RAMM Professional Services Consultant produces a "Treatment Selection Analysis Report" which among other things provides an assessment of the condition of the network on specific faults and defects determined by the RAMM software.

These include:

- Road roughness.
- Shoving of the pavement.
- Cracking of the sealed surface.
- Flushing of the surface with bitumen.
- Potholes.
- Scabbing through the loss of the chip surface.
- Edge break.

Information back to 1998/99 is available to plot the trends of these faults and defects, and these are a principle technical monitoring and assessment tool. The 2018 Treatment Selection Analysis Report is provided in the Appendix and it shows the latest and historical trends. In regard to condition of the network the Treatment Analysis Executive Summary states:

"The network condition is generally in good condition."

Roughness has been adopted as the key Service Target for the sealed and unsealed network as it is a concept that can be understood by the Community and has measurability, repeatability, relevance and consistency. It also can be compared nationally to other Road Controlling Authorities.

6.5.4 Levels of Service and Performance Measures

Table 6-5: Transportation Levels of Service

Objective		Level of Service	Performance Measure	Mandatory	Service area	Current (2022/23) performance	2024/25	2025/26	2026/27	2027/28 – 20233/34
To provide a well maintained, operated and affordable land transport system		Undertake maintenance and renewal programmes to ensure the safe and efficient operation of the roading network and related transport facilities to the satisfaction of ratepayers, road users and the NZ Transport Agency	Response to service requests: The percentage of customer service requests relating to roads and footpaths to which the territorial authority responds within the time frame specified in the LTP.	✓	All	70%	≥75% resolution within the timeframe specified			
			Condition of the sealed road network: The average quality of ride on a sealed local road network, measured by smooth travel exposure. (This Mandatory Performance Measure indicates the percentage of the network that complies with a maximum roughness target for a particular level of road)	✓	Urban	88 %	≥85%			
					Rural	98 %	≥95%			
					All roads	96 %	≥93%			
			Maintenance of a sealed local road network: The length of the sealed local road network that is resurfaced.	✓	Sealed roads	23.66 km	≥75km			
			Maintenance of the Unsealed Road network: The percentage of roads to achieve “good” or “very good” grades in condition surveys undertaken that year.		Unsealed roads	63%	≥70%			

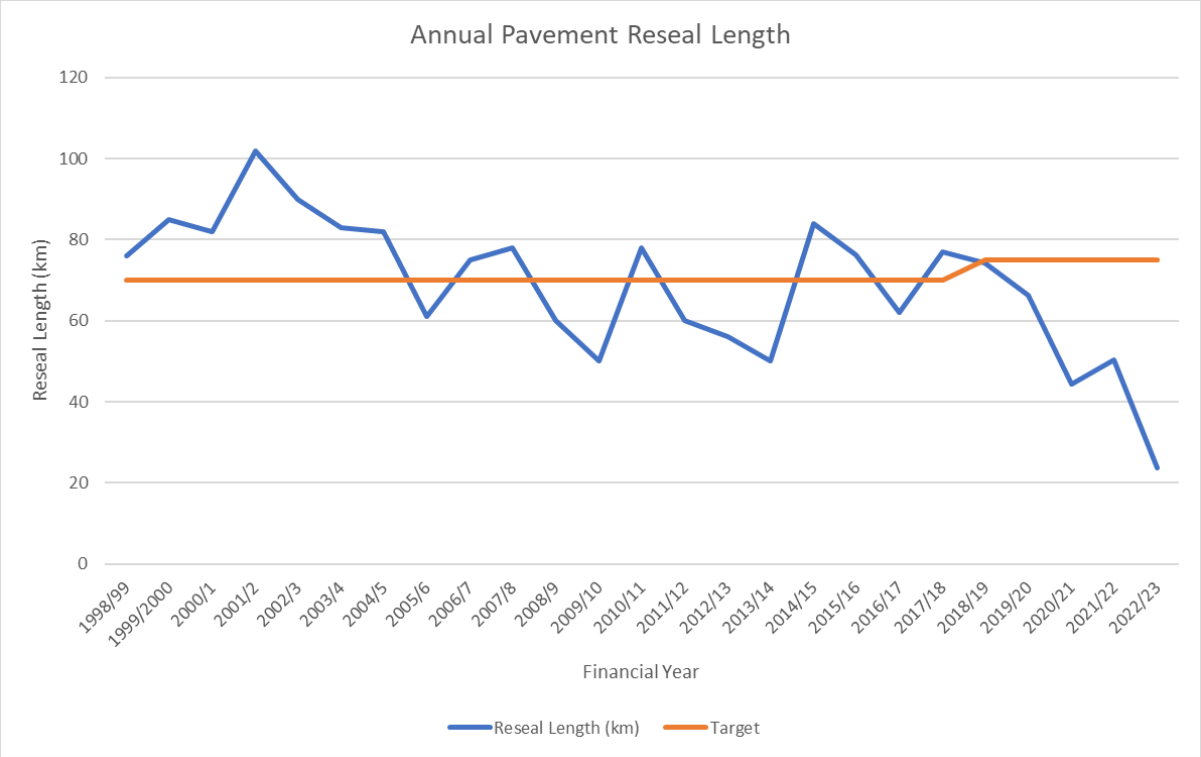
Objective		Level of Service	Performance Measure	Mandatory	Service area	Current (2022/23) performance	2024/25	2025/26	2026/27	2027/28 – 20233/34
			Condition of footpaths within the local road network: The percentage of footpaths within a territorial authority district that fall within the level of service or service standard for the condition of footpaths that is set out in the territorial authority's relevant document (such as its annual plan, activity management plan, asset management plan, annual works program or LTP).	✓	Footpaths	95%	≥80%			
To cater for any significant projected traffic increases in a sustainable manner		Complete upgrade and capital projects on an annual basis as identified mostly through strategies and forward work programmes (major projects are greater than $100,000)	The percentage of large projects which are delivered to an approved and funded programme.		Roading improvement	71%	≥75%			
To allow pedestrians, cyclists and motor vehicle users move safely around the Selwyn District		Fully utilise available funding opportunities to carry out safety improvement works in conjunction with community-based road safety, education and enforcement programmes	Road Safety: The change from the previous financial year in the number of fatalities and serious injury crashes on the local road network, expressed as a number	✓	Road safety	1 fatal and 18 serious injuries	number of fatalities and serious injuries in the current year is less than the average over the preceding 5-year period.			

Objective		Level of Service	Performance Measure	Mandatory	Service area	Current (2022/23) performance	2024/25	2025/26	2026/27	2027/28 – 20233/34
		Use travel demand management and implement infrastructure to encourage mode shift to public and active transport modes	Public Transport: The change from the previous year in the number of passenger boarding public transport within the district.		Public transport utilisation	344,845 (+90,690)	Number of passenger boardings in the current year is greater than the average over the proceeding 5-year period			
			Active Transport (Walking): The length of new footpaths constructed by Council.		Active transport	2623 m	≥1,000m			
			Active Transport (Cycling): The number of schools in the district participating in the School Cycle Skills Education Programme.			20 School	≥50% of schools			
To contribute to an integrated and responsive local and regional transportation system		Transport projects planned and implemented based on local and regional priorities	Allocate the appropriate staff and resources to represent the interests of the Council and the community in sub-regional and regional transportation planning.		Attendance at relevant Regional Transport Committee and Regional Transport Officers Group meetings and forums.	88%	≥75%			

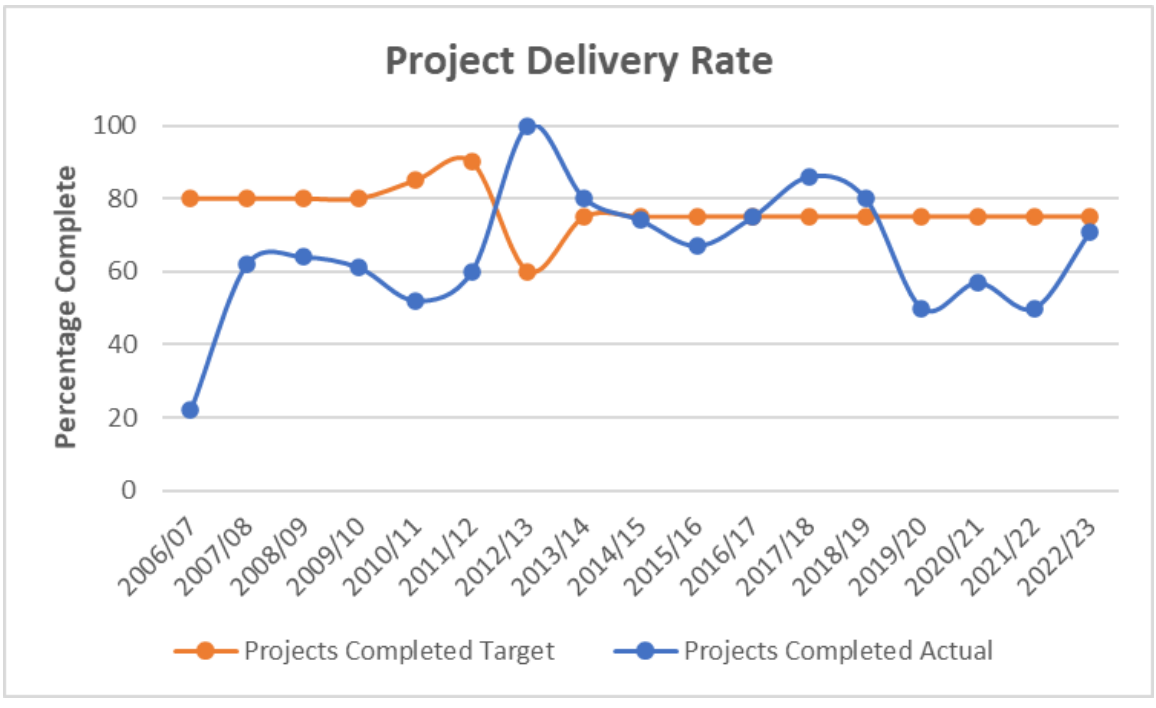
6.5.5 Performance Measurement Reporting

Currently reporting of technical measures is undertaken on an 'as-needed' basis. Examples of the reporting follow.

Figure 6-7: Technical Measures



KPI Targets enforced from 2006/07



KPI Targets enforced from 2006/07. Prior to 2006/07, this information was not recorded as part of the Annual Report process.

A robust system for measuring, recording and reporting performance is essential to tracking if Council is achieving its objectives and delivering the agreed levels of service.

In general, this can be achieved using existing systems but will require development of new processes to cover the range of measures effectively (IP 6.2).

Measurement and recording of performance will require involvement of other parties outside of the Asset Delivery Unit, both internal to Council (e.g. Customer Services) and external (e.g. Maintenance Contractor). Buy-in from these other parties, possibly requiring contract variations, will be essential to successful performance reporting.

Regular performance reviews of targeted improvement areas will be required and annual performance reporting is intended. Future AMPs will report on the current level of performance that has been achieved and this will contribute to the identification of further improvement actions that may be required.

Council Reporting
Within Council there is monthly financial reporting and the progress of projects is reported quarterly to Council's management team, while level of service achievement reporting is prepared for the Annual Report.

Community Reporting
The Annual Plan and the LTP detail the reporting directly to the community.

Less formally but more frequently information is provided through the "Council Call" - A one page section in a local weekly paper is used by Council to help inform residents in the District of items of interest for the community relating to Council's activities.

6.5.6 Operational Key Performance Indicators and Benchmarking

Council has recognised its high level objectives and LoS goals in the delivery of services through operational key performance indicators (KPIs). A suite of KPIs has been developed in collaboration with the road maintenance contractor to reflect these.

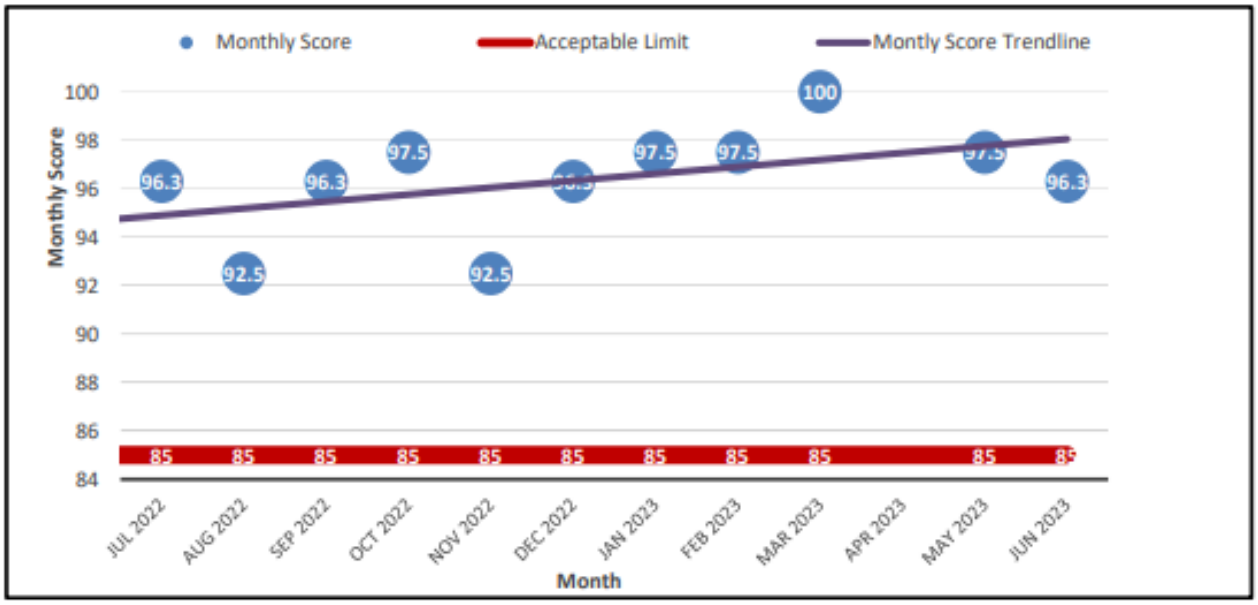
Contract 1420 – Monthly Report

HEB Constructions (HEB) is the Contractor responsible for maintaining the District's roads. SDC 1420 – Monthly Report is HEB's self-assessment of their operational performance from a Quality Assurance perspective. The table below shows what Key Performance Indicators (KPI) are in the report.

Figure 6-8: SDC 1420 Selwyn Road Maintenance Monthly KPI Summary

SDC 1420 - Selwyn Roading Maintenance Monthly Report Scorecard - FY 2022/23 - Year In Review													
One Page Summary Overview		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
High Level (40%)	KPI 1 H&S Notifiable Events - Contractor Controlled Risks												
	KPI 2 H&S Notifiable Events - Injury or illness												
	KPI 3 H&S Council Site Check Compliance												
	KPI 4 Regulatory incidents												
	KPI 5 Community Opinion												
	KPI 6 Focus Topic : Unsealed Grading												
	KPI 7 Urgent Unscheduled Response (Emergency Call Outs)												
Service Delivery (40%)	KPI 8 Routine Unscheduled Works Response (Potholes and Signs)												
	KPI 9 Response to Quotes & request for Info												
	KPI 10 Operational Inspection Reporting												
	KPI 11 Planned Works Programme Delivery												
	KPI 12 Training Plan												
	KPI 13 Technical Compliance (In Job)												
	KPI 14 Asset & 3rd Party Protection												
Managerial Processes (20%)	KPI 15 Contract Plans, Annual review												
	KPI 16 Innovations and Improvements												
	KPI 17 Accurate, timely invoicing/ contract claiming												
	KPI 18 Works Management and Asset Management												
	KPI 19 Resolution of Issues												
	Monthly Score	96.3%	92.5%	96.3%	97.5%	92.5%	96.3%	97.5%	97.5%	100.0%	97.5%	97.5%	96.3%

The table below shows the trend in HEB's performance since July 2022.



Contract 1420 – Partnering Meeting

Below is an excerpt from Contract 1420 that shows the KPI Council's Contractor is assessed against. This Report is tabled at the monthly partnering meeting where performance issues are raised and addressed. There KPI's have been further developed from the Contract 1420 KPI's and reflect and optimisation of service delivery.

Partnering meetings form a good context to discuss ONRC implementation where required and seek feedback from Contractor's around innovation. A good example is the work HEB has undertaken with Council to trial the ONRC inspections.

Council is now preparing a document on behalf of REG detailing its learnings from implementing the inspections including opportunities for improving the RAMM interface used for the trial. This is assisting the REG goal of continuous improvement in the sector.

HEB construction together @ VINCI

Selwyn DISTRICT COUNCIL

SDC 1420 - MONTHLY PARTNERING REPORT
SELWYN ROAD MAINTENANCE

September 2023

High Level

Service Delivery

Managerial Processes

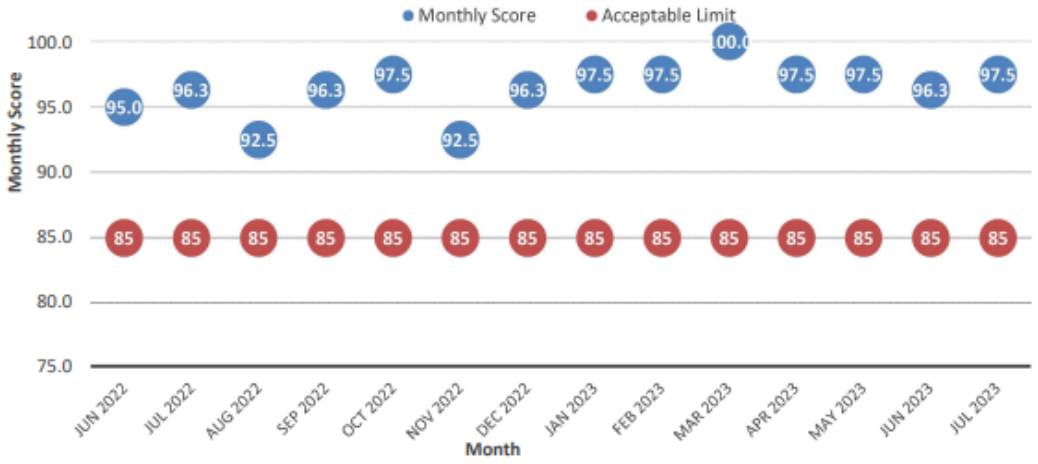
Key Statistics

Total Score **97.5%**

	Previous month		This month		Year to Date	
Number of Maintenance related Service Requests Received	197	ea.	183	ea.	706	ea.
Number of Emergency callouts/events attended	15	ea.	10	ea.	99	ea.
Sealed Pavement Potholes filled	859	ea.	946	ea.	2216	ea.
Planned Sealed Pavement Repairs completed	3213	m2	13986	m2	17199	m2
Km of Unsealed Road Graded	1025	Km	1174	Km	2838	Km
Number of Signs Fixed	126	ea.	432	ea.	1421	ea.
Km of Road Resurfacing	0.0	Km	10.2	Km	10.198	Km
Km of Sealed Pavement Rehabilitated	0.00	Km	0.98	Km	0.984	Km
Km of Unselaed Pavement Rehabilitated	23.1	Km	0.0	Km	47.05	Km

SDC 1420 - Selwyn Road Maintenance Monthly KPI Summary

One Page Summary Overview			September
High Level (40%)	KPI 1	H&S Notifiable Events - Contractor Controlled Risks	Acceptable
	KPI 2	H&S Notifiable Events - Injury or illness	Acceptable
	KPI 3	H&S Council Site Check Compliance	Acceptable
	KPI 4	Regulatory incidents	Acceptable
	KPI 5	Community Opinion	Acceptable
	KPI 6	Focus Topic : Unsealed Grading	Attention
	KPI 7	Urgent Unscheduled Response (Emergency Call Outs)	Acceptable
Service Delivery (40%)	KPI 8	Routine Unscheduled Works Response (Potholes and Signs)	Acceptable
	KPI 9	Response to Quotes & request for Info	Acceptable
	KPI 10	Operational Inspection Reporting	Acceptable
	KPI 11	Planned Works Programme Delivery	Acceptable
	KPI 12	Training Plan	Acceptable
	KPI 13	Technical Compliance (in Job)	Acceptable
	KPI 14	Asset & 3rd Party Protection	Acceptable
Managerial Processes (20%)	KPI 15	Contract Plans, Annual review	Acceptable
	KPI 16	Innovations and Improvements	Acceptable
	KPI 17	Accurate, timely invoicing/ contract claiming	Acceptable
	KPI 18	Works Management and Asset Management	Acceptable
	KPI 19	Resolution of Issues	Acceptable
		Monthly Score	97.5%



6.6 Transportation Negative Effects

The economic, environmental and social benefits from transportation do not come without cost. Carrying out transport activities of a large scale has the potential to be damaging. Council recognises these possible negative effects and takes the summarised in Table below measures to address them.

While the transport activity enables and supports much of community wellbeing, there are negative effects that need to be identified and appropriately managed, so that the positive contributions of a well-functioning, safe, and sustainable transport system can be realised.

Significant effects are recorded and assessed against the following:

- Significant Negative Effects highlight risks posed by the Transportation System, as it currently functions, or if the current management cannot be maintained.
- Mitigation of Negative Effects to describe how we manage these negative effects to minimise impact.
- Positive Effects which will result where mitigation is largely successful, and outcomes are achieved.

These are mapped against the four aspects of community wellbeing in the following table.

Table 6-21: Negative Effects

Significant Negative Effects			Social	Environmental	Cultural	Economic	Mitigation of Negative Effects	Positive Effects	
– – –	**Road Safety**	Hazardous roads and/or driving conditions, or speed limits that are not safe and appropriate may contribute to crashes, resulting in deaths and serious injuries.					Hazards are identified and reduced through engineering improvements, education, behaviour change and enforcement, with safety improvements prioritised. Timely and appropriate repairs and renewals. Safe and appropriate speeds are set based on evidence and stakeholder engagement.	The safety of all road users is prioritised, and deaths and serious injuries are reduced.	+ + +
– – –	**Mode conflict**	Increasing multi modal transport is not catered for within a safe network, resulting in mode conflicts and perceived or actual safety concerns.					Safe and appropriate and integrated infrastructure which provides for all modes of travel are prioritised to reduce conflicts and actual or perceived safety concerns.	All road users are safe and active modes are encouraged.	+ + +
– –	**Health**	Health issues arise from effects of climate change; air, light and noise pollution; obesity; road injury; and conditions associated with physical inactivity.					Utilising integrated transport systems encourages mode choice and reduces dependence on motor vehicles and fossil fuels, supporting health benefits. Light pollution to be balanced against need for safety. Use of buffer zones and planting to reduce effects.	Active modes of transport provide positive physical and mental health benefits.	+ +
– –	**Environmental damage**	Environmental degradation occurs through carbon and GHG emissions; air pollution; and dust. Runoff from roads, entering waterways may include contaminants which are harmful to the environment. Maintenance and improvement works have the potential to damage heritage and cultural sites, and vegetation or habitats. Transport routes can affect rural amenity and landscape values.					Mode shift planning and travel demand management, with supporting alternative, low emission modes, application of dust suppression and seal extensions (where appropriate), and integration of soft stormwater treatment systems into road design will minimise negative environmental effects. Planning to protect and minimise impact to environmental, historical, and cultural sites of significance.	Mode choice through integrated transport systems provides low emissions travel options. Emissions (including dust) are minimised. Access to significant sites is provided.	+ +

Significant Negative Effects			Social	Environmental	Cultural	Economic	Mitigation of Negative Effects	Positive Effects	
– –	**Affordability**	Community aspirations may exceed the ability to fund infrastructure to support aspirations – resulting is dissatisfaction and frustration (e.g. unsealed roads).					Council will attempt to balance the cost of the transportation activity with benefit and community desire, maximising co-funding and alternative funding where possible and apportion whole of life asset costs and capital expenditure over time. Provide a range of accessible transportation services so that all people and businesses can make informed choices in a timely manner.	The transport system is managed in an affordable way maximising benefit.	+ +
– –	**Infrastructure is not suitable for use**	Unsuitable infrastructure provision and management means businesses are not able to transport goods and services efficiently and communities are impacted. This could limit growth and impact on economic prosperity. Transport routes could sever/separate communities.					Review of existing infrastructure, planning and design will consider wider benefits and minimisation of negative effects, in balance with strategic objectives and purpose. Integrated multi-modal transportation infrastructure and services. Plan ahead for economic growth and population changes (including mode demand). Carry out renewals and new works in a timely manner.	The transport system is integrated, safe and appropriate for all road users. All users of transportation systems can access the services and amenities within safe and efficient transport routes.	+ +
– –	**Lack of resilience**	Infrastructure is unable to cope with increased pressure, including the impacts of climate change, reducing the resilience of the network and communities.					Identify vulnerable parts of the network, incorporate resilience capacity, based on future modelling (e.g., climate change factors).	The transport network is resilient to events, and provides appropriate resilience to our communities and economy.	+ +
–	**Inequality**	The impacts of transport on health are often inequitably distributed, as is access to safe transport modes.					Ensure all users are considered in transport planning and provision.	All members of our community are provided for in a safe and affordable way.	+

6.7 Issues

Improvement Plan items

IP 6.4 Review processes to track and report delivery (New)

7.0 GROWTH AND DEMAND

This section provides details of growth forecasts and demand drivers which affect the management and utilisation of Transportation assets.

Contents

7.1 Overview

The future demand for services will change over time in response to a wide range of influences including:

- Local population trends.
- Accuracy of predicted future populations.
- Local economic trends.
- Land use change.
- Changing technologies.
- Changing legislative requirements.
- Changing regional and district planning requirements.
- Water resource issues.
- Climate change.

Headline 7.1:
Selwyn District Council adopted its Growth Model for planning use in December 2013. The model has been revised and improved to support strategic planning since then.

Increasing demand for transport services over time generates a requirement for an increase in the scope of services and for the development of additional transportation infrastructure.

Expenditure programmes need to be planned to fund the capital works and associated on-going operational expenditure. Alternately it may be possible to manage demand within the existing system capacity or through the use of non-asset solutions.

Where a reduced demand is forecast, it may be appropriate to renew assets with a lesser capacity as operation expenses may decrease or an asset may become surplus to requirements. This situation is not predicted in the District for the next thirty years.

The land transport network is responsible for the efficient movement of people and goods throughout the District and to neighbouring Districts. The land transport network is a core facility maintained by Council to assist it in meeting its Community Outcomes.

The present road network was set up many decades ago and has been gradually upgraded to the present standard. However community expectations in the roading area are increasing which will require on-going development of the roading network.

The network is under some stress due to a large increase in light and heavy vehicle traffic. This is illustrated through congestion, traffic delays and safety issues. The impact of heavy traffic is typically illustrated through greater wear and tear in the network.

These issues are discussed in more detail in **Section 7.6**

Other factors that may force the need for change of the assets or the management of the asset are discussed below and in the following paragraphs:

An increase in population: This will result in an increase in traffic volumes which will increase congestion and reduce the customer LoS. Consequently there will be increasing wear which will increase road maintenance costs and renewal frequency.

A change in the way a road is used: The creation of a new sub-division, or the development of new industry in one part of the District, may change how a road will be used. This may mean roads will need to be upgraded to accommodate changing use i.e. unsealed to sealed road.

A change in the LoS demanded by the road users: Communities tend to expect improving LoS from their assets. Roads and the activities involved in managing the roads may need to be improved to satisfy these future needs.

A change in the strategic management of the assets: Council's policies and management strategies are in continual evolution to keep pace with the changing needs of the community, NZTA and Central Government statutory requirements.

The trend to more lifestyle blocks in the country-side has also changed the expectation of the travelling public in rural areas. These rural roads are no longer used only by local farmers but now have a much wider range of people and vehicle types driving on them. This has resulted in factors such as smoothness of ride, loose metal and higher speeds becoming more important to more road users. Changes in policies and management strategies can also have a significant effect on how assets are managed.

The direction of future land use changes and their effects on the roading network are difficult to determine with accuracy, but it is important that the roads likely to be affected are prepared in readiness for these changes.

Demand for new or upgraded assets arises from the needs of the existing population i.e. meeting the LoS standards, changing habits, and population growth. This demand manifests itself in the need for:

- New roads.
- Sealing of unsealed roads.
- Widening and alignment improvements.
- Upgraded intersections.
- New and upgraded bridges.
- Appropriate urban facilities in closely settled areas, e.g. streetlights, kerb and channel, footpaths.

Council intends to maintain its awareness of these issues and plans to provide a roading network which meets the communities' expectations. The network is showing some stress from the increasing demands of both light and heavy traffic. This will require an appropriate maintenance, renewal and new capital works response.

Funding of all these developments has been recognised in the 2024-34 LTP and associated Infrastructure Strategy.

7.2 Selwyn Growth Planning Overview

Over the last two decades, the Selwyn District has experienced rapid growth in population, from around 27,600 in 2000 to 79,300 in 2022. Population in the District has grown by 4.9% per annum, and in 2022 the Selwyn District was the fastest growing territorial authority area in the country. Selwyn District Council is a high-growth local authority which means that the population of the Selwyn District is expected to grow at or above the national population growth rate according to the projections of Statistics New Zealand (Stats NZ).

Managing growth and development is an important aspect of local government. All councils are required to undertake growth planning as part of their responsibilities under the Resource Management Act 1991 and Local Government Act 2002. Growth planning identifies the expected way that the district will grow and change over time, considering demographic and economic trends. Economic and population growth drives the need for new capital expenditure to meet that growth.

Growth planning informs Council's infrastructure programme which is included in a Long-Term Plan (section 93 of the Local Government Act 2002), associated 30-Year Infrastructure Strategy (section 101B of the Local Government Act 2002) and the significant forecasting assumptions of the Financial Strategy (Clause 17 Schedule 10 Local Government Act 2002). The Financial Strategy is a critical part of the Long-Term Plan, along with Council's Infrastructure Strategy, together these provide the strategic direction and the underpinning context for the long-term plan.

7.3 Demographic Trends

Demand for services and infrastructure may change for reasons that are not connected with an increase in population. Examples include the impact of reducing average household size and changes in demographics. A reduction of the average household size increases the demand for housing and associated infrastructure without a commensurate increase in the population. An ageing population will have implications on natural increase, however, in and of itself, an ageing population will alter the demand for certain facilities and services. As demand is also affected by demographic trends, it is important to ascertain not only likely future population growth but the composition of that growth.

7.4 The Spatial Element of Growth

Growth occurs at specific locations and one part of a district may experience a high level of development, even as other parts of that district have a declining population or minimal development activity It is critical that residential and non-residential projections are matched with areas, townships suburbs, or even specific parcels of land so that spatial plans, asset management plans and development contributions policies can make use of them. If growth occurs in different locations from those assumed in the projections, there is a risk that Council will have 'stranded' growth infrastructure with no funding source (at least temporarily). This is highly dependent on the circumstances and infrastructure in question. Council has previously acknowledged that should growth occur at different rates, it can respond by accelerating, delaying or revising planned capital works.

7.5 Selwyn District and Communities

In short, between 2024 and 2034, population projections indicate that there will be an additional 23,353 people living in the Selwyn District. This projected population increase would result in an additional 8,729 households and 9,629 dwellings.

Between 2024 and 2054, population projections indicate that there will be an additional 67,049 people living in the Selwyn District. The projected additional population for this period (2024-2054) is considerable, essentially the additional population to be accommodated by 2054 is the equivalent of

the entire population of the Selwyn District in 2020. This projected population increase between 2024 and 2054 would result in an additional 25,682 households and 28,330 dwellings.
(Selwyn District, Long-Term Plan 2024-34, Growth & Demand Report, June 2023)

7.5.1 Growth Model

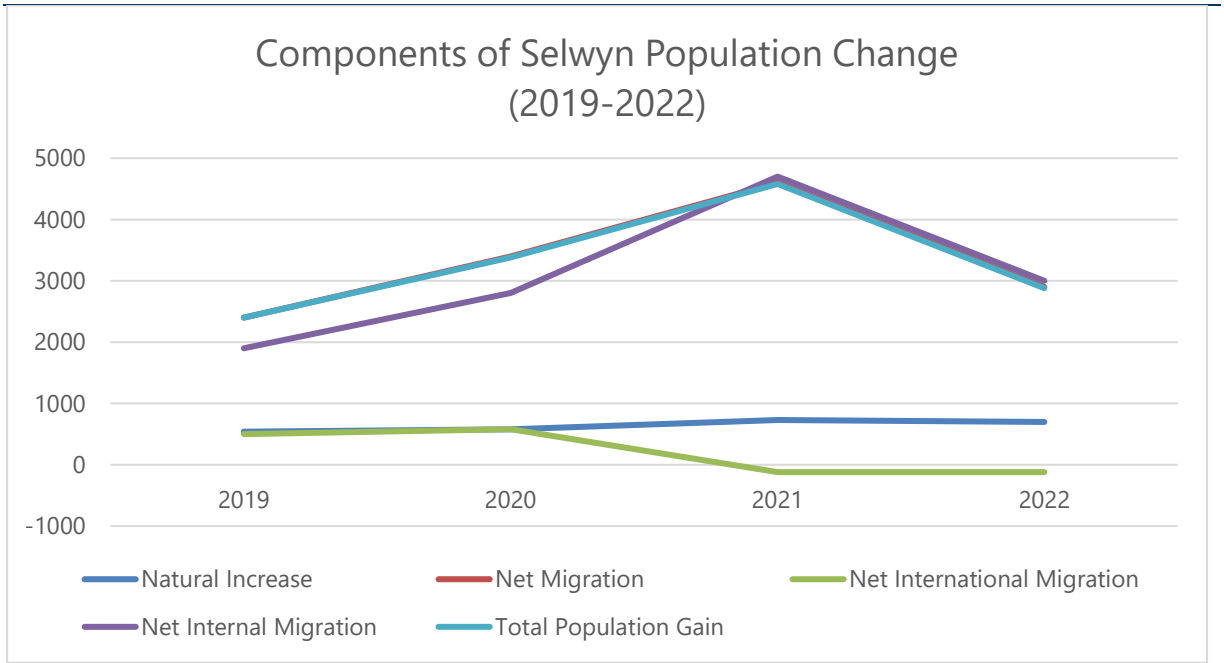
It is essential for local authorities to utilise growth modelling to discern a reasonable and realistic outlook for future growth and change to inform effective growth planning. A key output of growth models are projections of future population, households, dwellings and jobs at district and/or sub-district level. Growth projections are not predictions and are typically used as an indication of the overall trend, not exact forecasts. Growth modelling requires realistic assumptions that reflect their best information about the future. The actual level of growth, its distribution, and composition can vary significantly from the projections and assumptions. Inaccurate projections can be costly, resulting in infrastructure that is inadequate to service higher-than-expected growth or surplus to requirements when growth is lower than expected. Projections require frequent updating to maintain their relevance and usefulness, by incorporating new information.
Council continues to monitor growth and population trends, which includes maintaining and updating the Selwyn Capacity for Growth Model (SCGM) with Formative Ltd to inform growth planning in the district. The SCGM helps us plan to ensure there is sufficient infrastructure and zoned land in the right location at the right time.

The SCGM contains three distinct and interrelated modules:
Module 1 produces residential demand projections (population, households and dwellings) using a standard cohort component method and household formation model.
Module 2 produces economic projections including Gross Domestic Product (GDP), employment by industry and the demand for floorspace and business land.
Module 3 satisfies a requirement of the National Policy Statement on Urban Development 2020 (NPS-UD) by producing estimates of the amount of additional dwelling and business floorspace that can be developed on each property within the urban areas of the Selwyn District to determine whether there is sufficient development capacity for housing and business land to meet projected demand. Further information can be found on development capacity for housing and business land at the following:

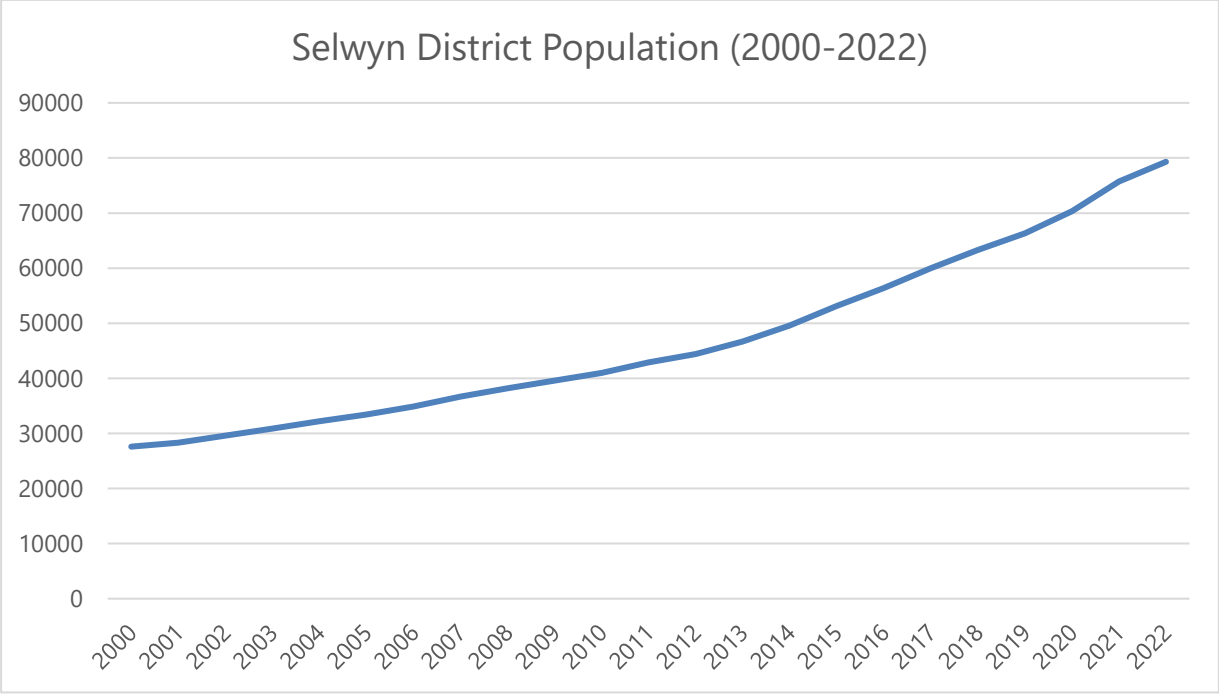
- Selwyn Residential Capacity and Demand Model Economic Assessment
- Greater Christchurch Housing Development Capacity Assessment
- Greater Christchurch Business Development Capacity Assessment

7.5.2 Population Trends

The Selwyn District has experienced immense and rapid population growth over the last few decades. Over the past six years the population of the Selwyn District has grown by 3,800 per annum, while the number of dwellings consented grown by 1,500 per annum. People are understood to 'vote with their feet' expressing locational preferences for where they live and work due to a perceived improvement in well-being resultant from locating to a particular area with higher utility in terms of amenities, job opportunities and housing. There has been a strong and sustained demand preference for the Selwyn District in the past few years in particular. Most of the population growth has been driven by net internal migration, (around 80% of total population gain) with people moving to the District from Christchurch City and other areas of Aotearoa New Zealand. The remainder of the growth is related to natural growth and to a much lesser extent international migration. Between 2020 and 2022 there has been a net international migration loss which corresponds with the national trend for that period.



According to Stats NZ subnational population estimates for June 2022, the estimated resident population of the Selwyn District was 79,300. In 2000, the population of the Selwyn District was 27,600 meaning the population has grown by 51,700 since that time. In the last ten years alone, the population has grown by 34,900 representing a 78.6% increase. Over the Covid-19 pandemic era (2019 to June 2022) the population has grown by 13,000 representing a 19.6% increase. Border closures and COVID-19 have had a positive impact on growth in the district, through continued internal migration (potentially in response to COVID and remote working / finding space) and no international migration loss.

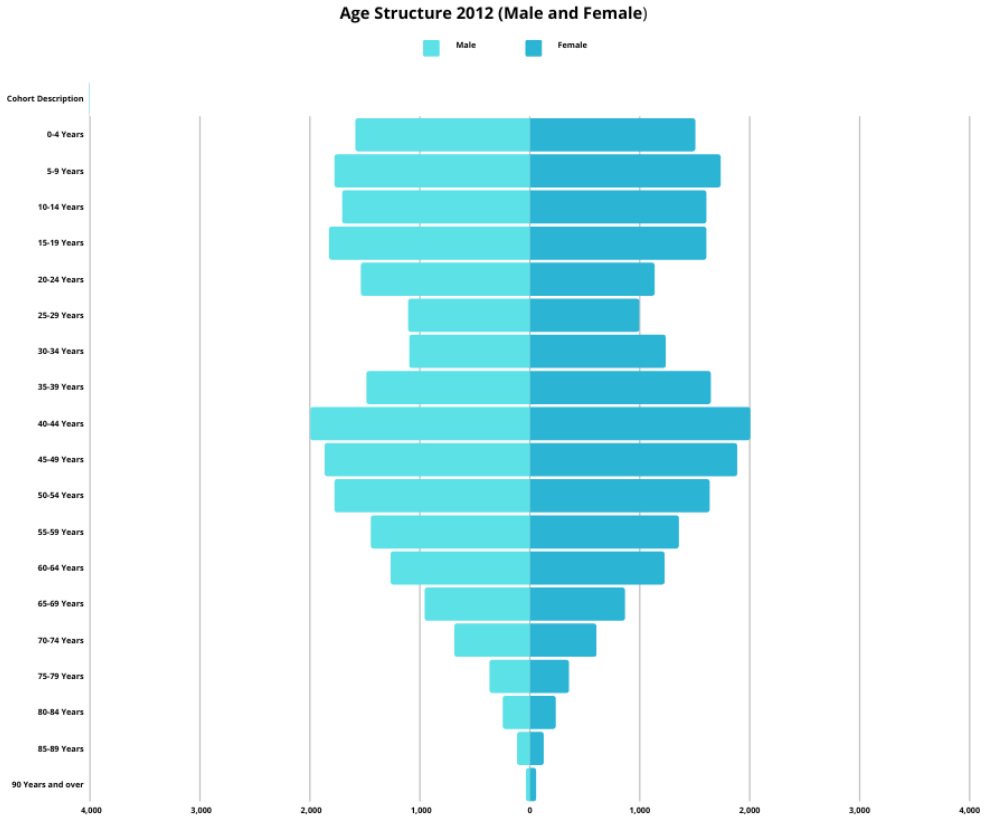


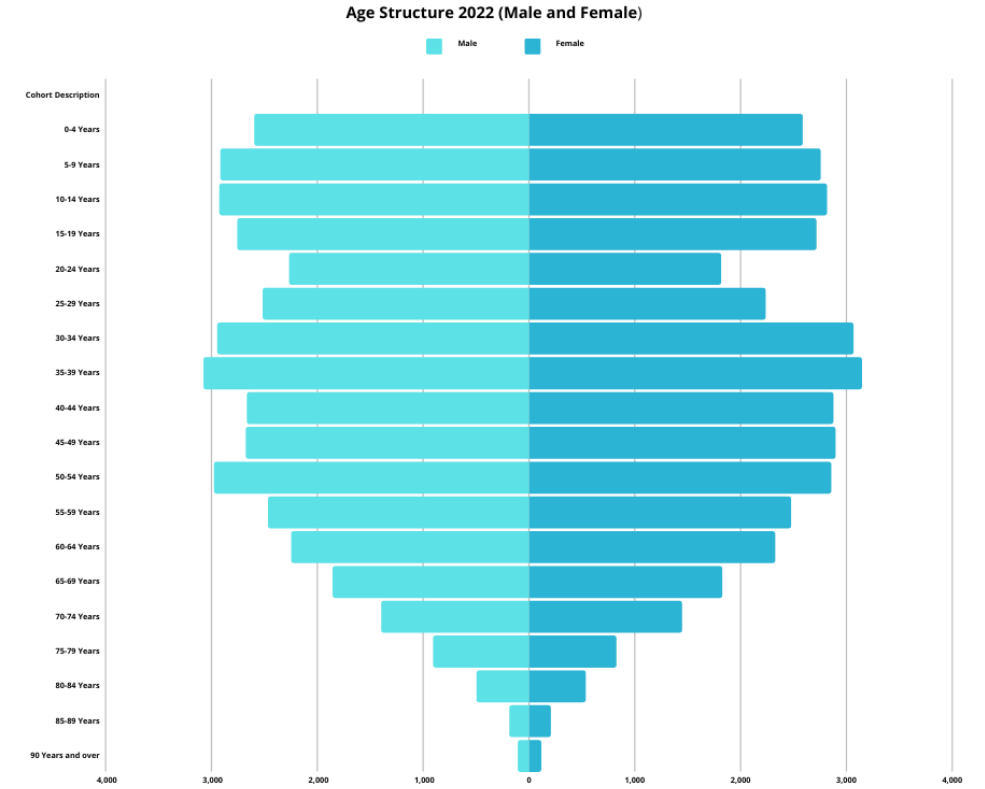
7.5.3 Demographic Trends

The components of population change births, deaths and migration, along with the age profile of migration, alter the age and sex structure of the population. The primary cause of Selwyn District's population growth is net migration comprised of migrants that are heavily located at the parental and child ages, indicating the inward movement of families. The district has also continued to experience strong natural increase which has been supplemented by its high net migration gains and relatively youthful migrant age profile. Selwyn District's net migration is heavily comprised of internal migration and uniquely for the Selwyn District, internal migration is strongly positively correlated with natural increase. As a result, the population of the Selwyn District has a much younger age structure than many other territorial authorities, presently the Selwyn District has a median age 37.3. The change in age structure can be observed through presenting demographic data visually in population pyramids. The population pyramids below present Stats NZ subnational population estimates by age and sex in 2012 and 2022. It is clear that although there has been growth across all age groups over this ten-year period, the observed change in age structure reflects the influence of migration on population growth.

Although the Selwyn District is young structurally and is likely to continue to have a younger age structure than the national average due to migration trends the Selwyn population is ageing. The population of Selwyn is ageing numerically, due to improvements in life expectancy and longevity, as well as ageing structurally, due to declining fertility which causes an increase in the numbers of elderly as a proportion.

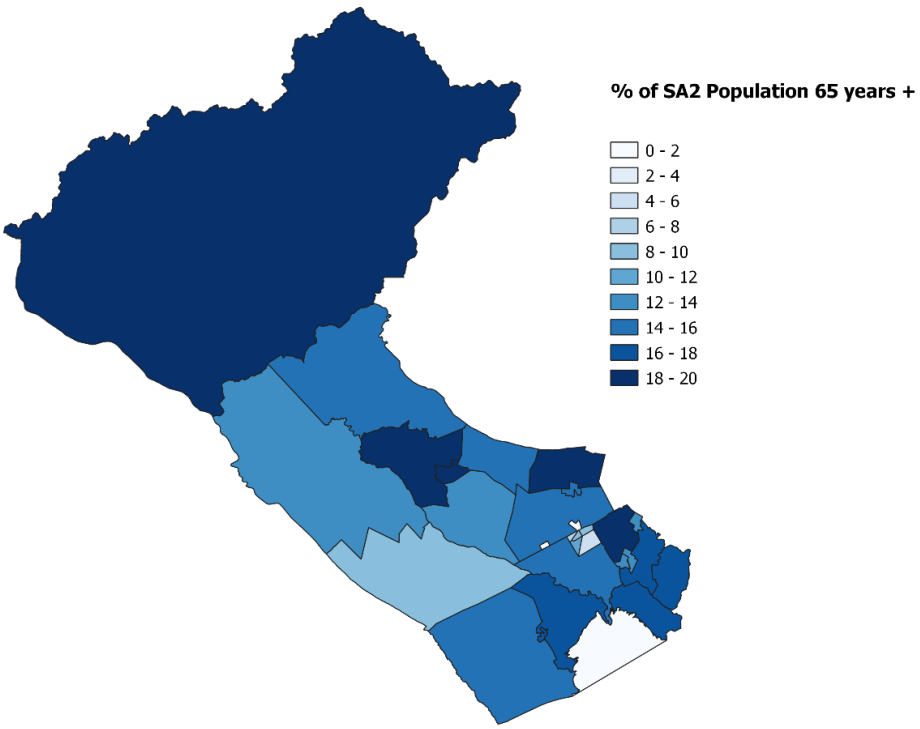
In 2012 the percentage of Selwyn's population aged 65 years and older was 10.32%, for 2022 it was 12.4%. Once a population has greater than 20% aged 65 years and above its natural increase is typically very low to negative, meaning that future growth becomes increasingly dependent on migration. Selwyn's ageing population is not presently caused by migration gains of older migrants. The migration age profile shows that Selwyn experiences very low to negative migration after age 70. The Selwyn District is experiencing 'ageing-in-place', that is, greater percentage growth in numbers at older ages, seemingly because older people tend to remain in the district as they age, or older leavers are exactly replaced by older arrivals.


Age Structure 2012 (Male and Female)
Male
Female
Cohort Description
0-4 Years
5-9 Years
10-14 Years
15-19 Years
20-24 Years
25-29 Years
30-34 Years
35-39 Years
40-44 Years
45-49 Years
50-54 Years
55-59 Years
60-64 Years
65-69 Years
70-74 Years
75-79 Years
80-84 Years
85-89 Years
90 Years and over
4,000
3,000
2,000
1,000
0
1,000
2,000
3,000
4,000

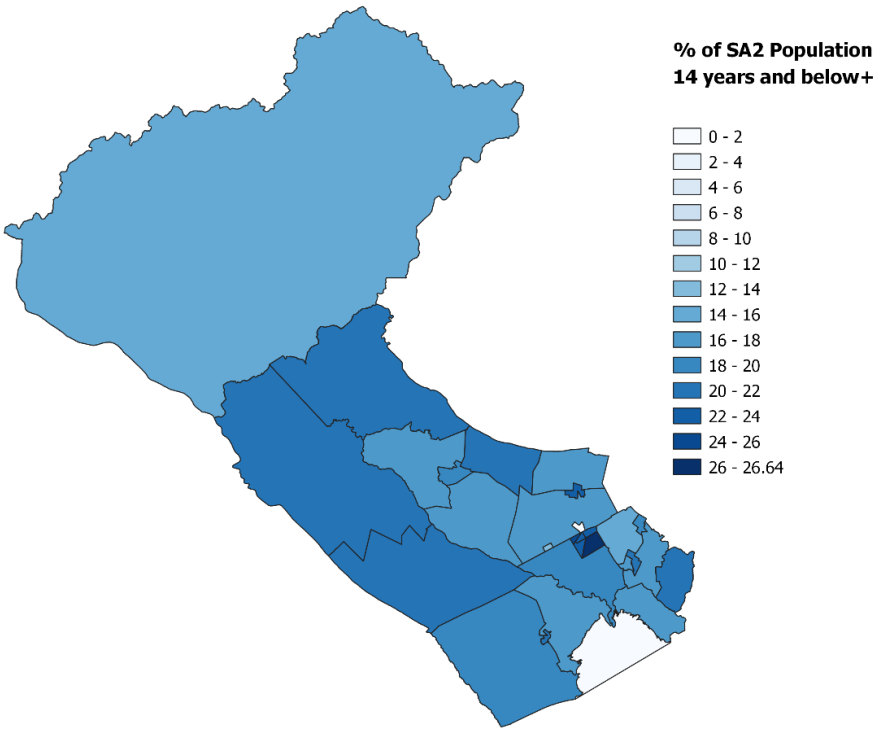

Age Structure 2022 (Male and Female)
Male
Female
Cohort Description
0-4 Years
5-9 Years
10-14 Years
15-19 Years
20-24 Years
25-29 Years
30-34 Years
35-39 Years
40-44 Years
45-49 Years
50-54 Years
55-59 Years
60-64 Years
65-69 Years
70-74 Years
75-79 Years
80-84 Years
85-89 Years
90 Years and over
4,000
3,000
2,000
1,000
0
1,000
2,000
3,000
4,000

7.5.4 Area and Township Demographics

There are diverse age structures across Selwyn District, with considerable variation in the demographic make-up of areas. These distributional differences are important for growth planning, not just to compare the population age structures of each area, but also to appropriately locate future services.
The area of Burnham Camp has a median age of 26.1, which is to be expected due to a large number of military and associated civilian personnel that live and work at the camp. Aside from Burnham Camp which has a unique make up, the next youngest areas, which consist of a number of SA2s are Rolleston with a median age of 35.38 and Lincoln with a median age of 35.85. Craigieburn has the oldest median age, 48.5 and has been ageing faster than other areas of the Selwyn District. Other areas of the Selwyn District with an older median age are Halkett 46.9, Trents 45.9 and Tai Tapu 45.9. Typically, an increasing median age is driven by the loss of young people and/or the gain of older people; a decreasing median age, the opposite.
In the SA2 areas of Darfield, Trents, Craigieburn and Glentunnel between 18-20% of the total population is aged 65 and over (June 2022). An area with more than 20% of the population aged 65 and over is said to be experiencing 'hyper-ageing'.



Not including the Izone SA2 area, over 24% of the Rolleston population is aged 14 or younger. In the SA2 areas of Rolleston South East and Rolleston North West over a quarter of the population is aged 14 or younger. West Melton has a median age of 43.3 which is well above the district average, however over 23% of the population is aged 14 or younger. Burnham has the lowest proportion of its population aged 14 or younger (13.91%) followed by Craigieburn (15%).



The data clearly show that the Selwyn District's relative youth is concentrated in a small proportion of the district.

7.5.5 Housing Trends

The growth of the Selwyn District has meant that there has been a rapid increase in residential development activity, in terms of dwelling construction, which has consistently outpaced Stats NZ projections. The significant increase in housing demand in the Selwyn District, has resulted in significant urban expansion, particularly in the larger townships. The SCGM estimated that there are 30,559 dwellings in the Selwyn District in 2022 an increase of over 6,156 dwellings since 2018.

In recent years there has been a shift from larger 800m^2 sites to smaller sites of 400-500m^2, particularly in Rolleston and Lincoln. In the townships of the Selwyn District the majority of development has occurred on the periphery of each of the towns with minimal infill development adjoining commercial centres. There has been a concerted effort by the Government through the Urban Growth Agenda, the National Policy Statement on Urban Development 2020, the Medium Density Residential Standards and the National Policy Statement for Highly Productive Land to promote greater intensification in urban areas.

Higher densities in urban areas are less land intensive, can facilitate housing choice, improve affordability, promote liveable towns, encourage economic development, locate jobs in proximity to where people live, improved walkability, reduce transport emissions, reduce infrastructure costs, lead to greater energy savings, and many other co-benefits. Higher density urban areas must be coupled with the encouragement of mixed-use land use to facilitate living locally and living sustainably. Increasing density will also require a greater provision and level of service for key amenities and services.

There are several signs that point towards a potential decline in residential dwelling construction in the Selwyn District in coming years. On an annual basis the number of residential consents in the

Selwyn District decreased by 2.1% for March 2021 to 2022 compared with the same 12-month period a year before March 2020 to 2021.
The graph below produced by Te Tūāpapa Kura Kāinga | Ministry of Housing and Urban Development on the Urban Development Dashboard shows the change in new residential building consents in the Selwyn District between 1997 and 2022.

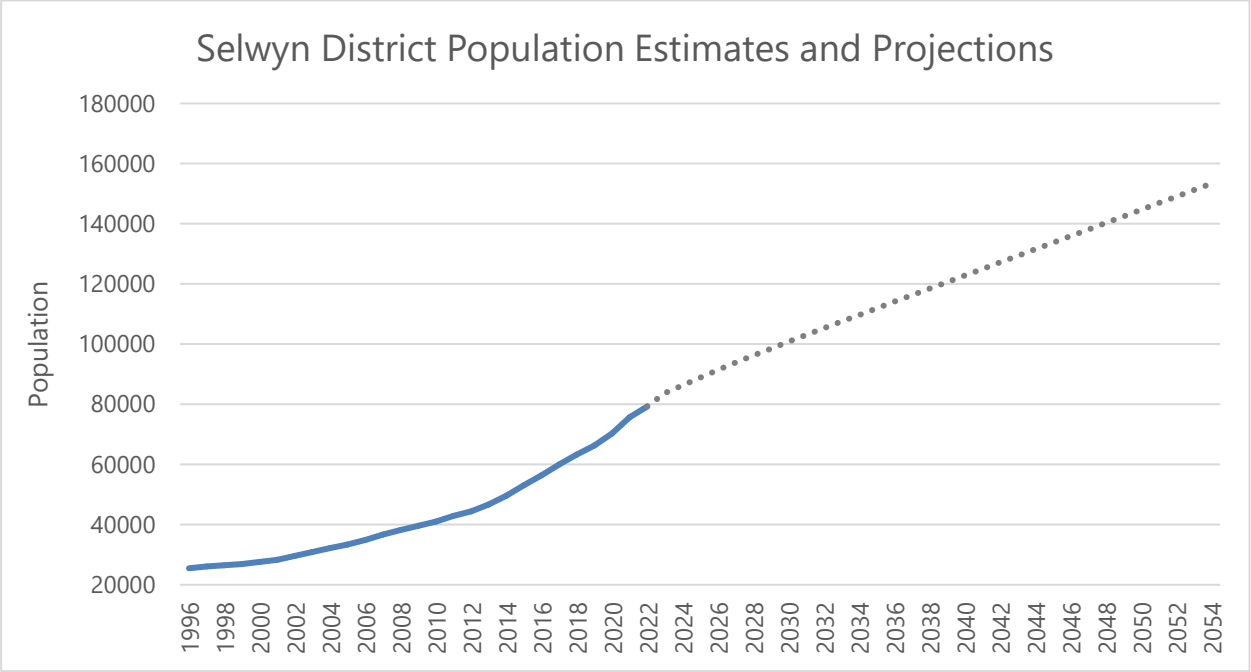
The Selwyn District has a particularly young housing stock, with a significant portion constructed from the year 2000 to present. Presently, the Selwyn District does not provide significant diversity and choice in its housing stock in terms of size, typologies, and price points. Due to strong demand preference the majority of the housing stock is defined by a particular typology being 3-to-4-bedroom stand-alone dwellings with double garaging.

7.6 Population, Households and Dwellings Projections

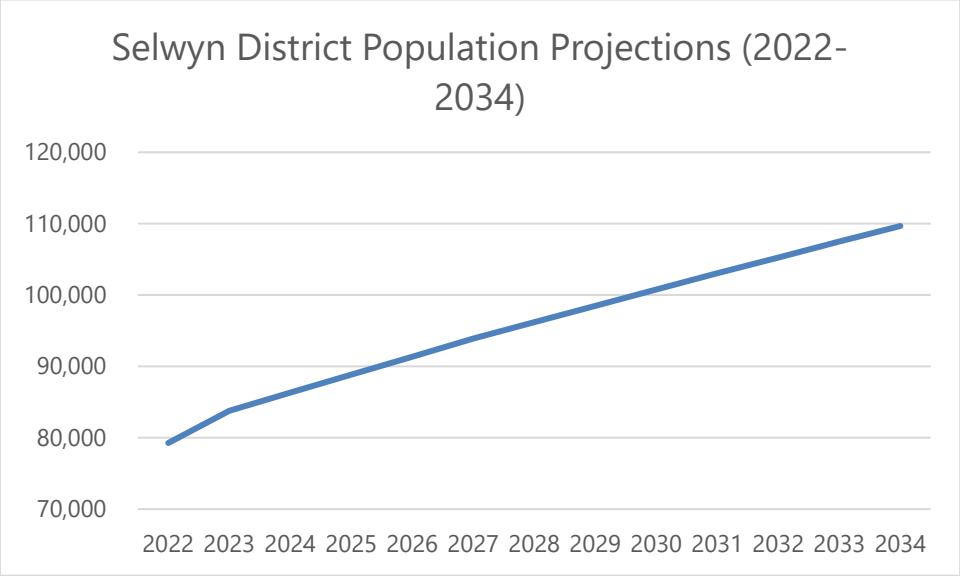
A key output of the SCGM are projections for population, households and dwellings at the district and sub-district level. These residential demand projections are critical to informing growth planning.

7.6.1 Population Projections

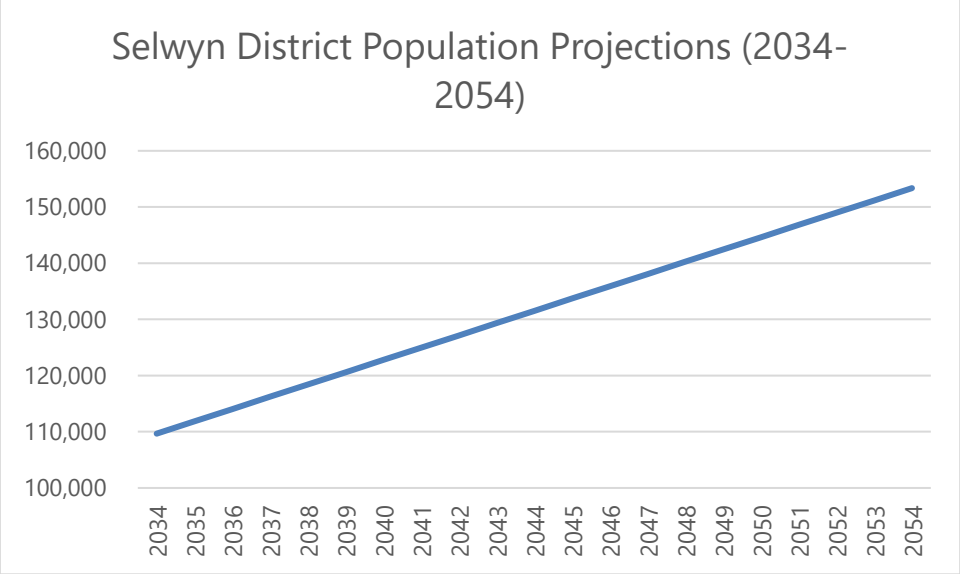
The population projections establish the number of people that are expected to live within the Selwyn District over the coming decades and the associated demand for dwellings and residential land. The population projections are important because the community generates demand for infrastructure and other Council services. The SCGM applies a standard cohort component method to project future population applying Stats NZ assumptions for fertility, mortality and net migration. Specifically, the population in a given year is equal to the population in the previous year plus births, less deaths, and plus net migration.



The SCGM projects that the population of the Selwyn District will increase from 79,300 in 2022 to 109,664 in 2034 which represents a population increase of 43,696 in the next twelve years.

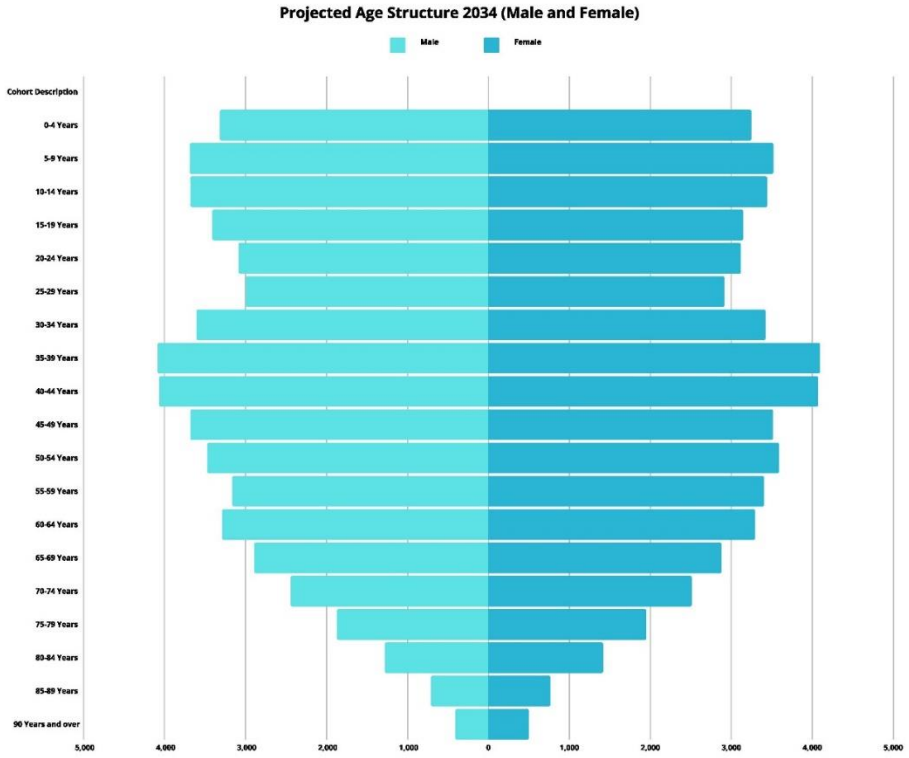


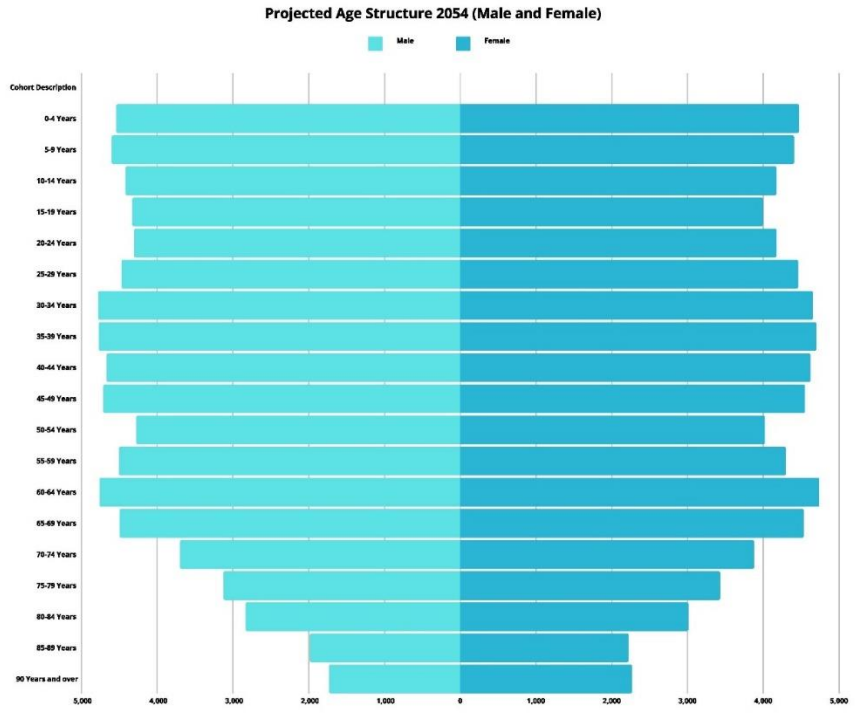
The population of the Selwyn District is expected to grow to 153,360 by 2054 which represents a population increase 74,060 in the next thirty two years.



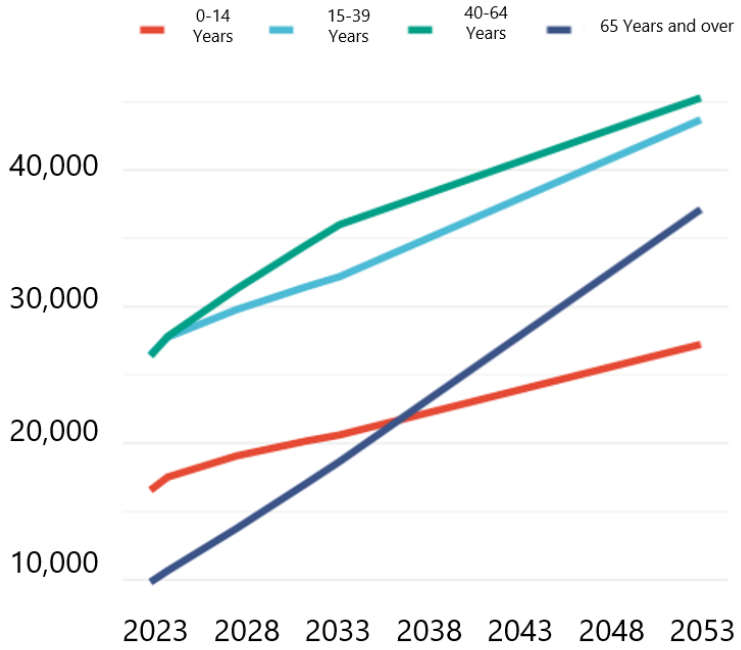
7.6.2 Age Structure

As previously mentioned, there has already been evidence of an ageing population in the Selwyn District. Stats NZ SA2 population projections, by age and sex, 2018(base)-2048 confirm that the passing of 20% aged 65+ years milestone is expected to occur around 2038. In 2022 12.4% of the Selwyn population was aged 65+, the proportion of the population aged 65+ is projected to increase to 17.82% of total population by 2034 and 24.2% of the population by 2054. The 65+ age group along with the 0-14 age group represents the dependents of a population. In 2022 33% of the total Selwyn population were dependents, the proportion of the population that are dependents is project to increase to 36.84% by 2034 and 41.54% by 2054. The 2022 working age population (aged 15-64) made up 67% of Selwyn's total population. The working age population as a proportion of Selwyn's total population is projected to decline to 64% in 2034 and 58.5% by 2054. The population pyramids below show the age structure of the projected population in 2034 and 2054.



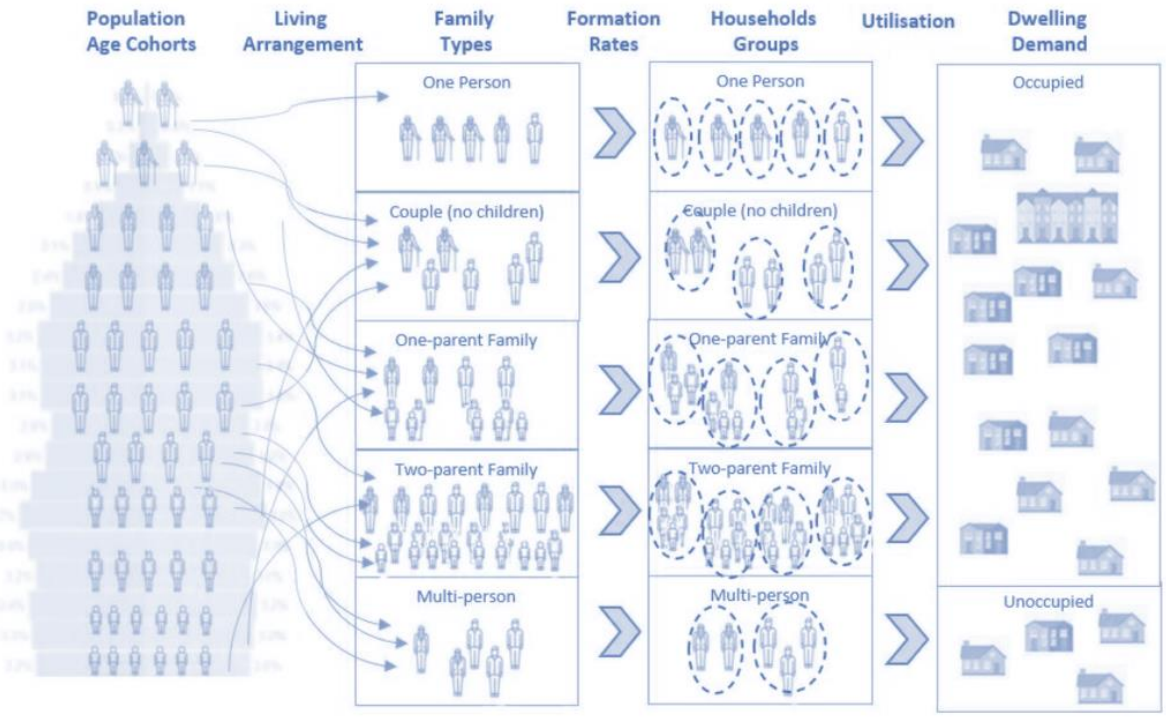


The population change between 2023 and 2054 is show on the graph below. Although population growth is anticipated across all age groups, there is strong growth in the 65 years and above age group.



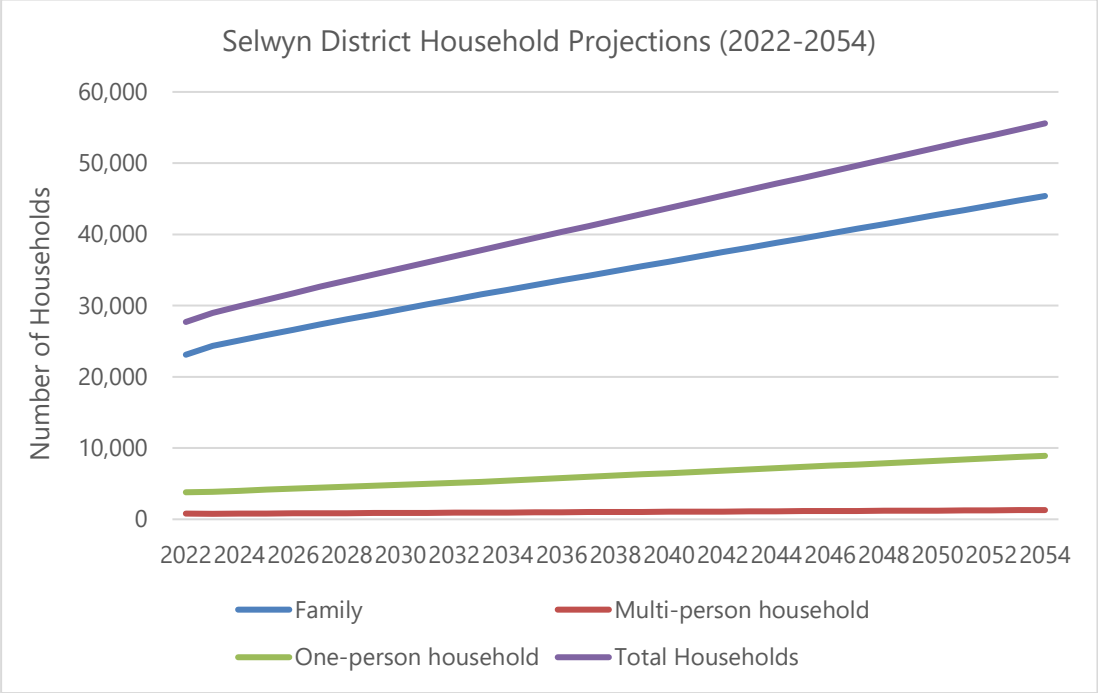
7.6.3 Households and Dwellings Projections

The SCGM estimates the number of households and dwellings that the future population will require. The SCGM uses the official Statistics New Zealand assumptions for living arrangement and household formation rates to convert the projected population to families and households. The resulting households are used to establish the number of dwellings, both occupied and unoccupied, based on utilisation recorded in the Census. The SCGM uses the official Stats NZ assumptions for living arrangement and formation rates which means that the projections are consistent with the official projections, however they have been updated to a newer (2022) base year which provides a contemporary set of projections that reflect the growth that has eventuated since 2018.



The SCGM projects that the number of households in the Selwyn District will increase from 27,703 in 2022 to 38,634 in 2034 which represents an increase of 10,931 households in the next ten years. Furthermore, the SCGM projects that the number of households in the Selwyn District by 2054 will be 55,587 which represents an increase of 27,884 households in the next thirty years. The projections indicate that there will be a doubling (over a 100% increase) in the number of households by 2054.

This level of growth and dwelling establishment has an obvious impact on transportation demand across modes.



Households consist of the following three broad household types:

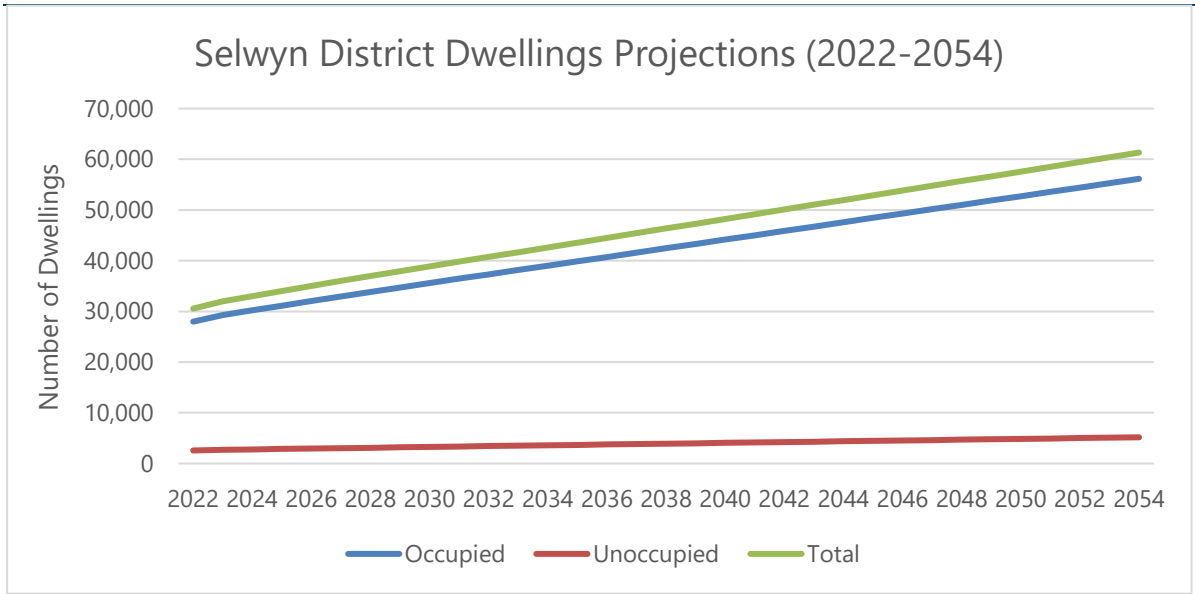
- family household;
- other multi-person household; and
- one-person household.

The SCGM projects that over the next thirty years there will be a continuation of strong growth of family households. A family household is two or more people living in the same household who are either a couple, with or without child(ren), or one parent and their child(ren). Family households represented 84% of total households in the Selwyn District in 2022. This composition is expected to remain relatively unchanged for the next ten years with family households projected to represent 83% of total households in 2034. Over the thirty years there is a projected small decrease of this household type to 81% of total households in 2054.

There is also strong growth projected for one-person households which is due to the increasing number of people at older ages. In 2022, 13.7% of total households were one-person households, in 2054 the proportion of total households that are one-person households is closer to 16%. An ageing population has will result in an increase in couple-only and one-person households as a proportion of total households. Other multi-person households, which generally include unrelated people living together in a household, are increasing more slowly over the next thirty years.

The estimate of the expected number of households in the District is important as there is close to a one-to-one relationship to dwelling demand. The relationship between households and dwellings is however never exactly one-to-one, as there will always be dwellings that are unoccupied (on the market for sale or rent, under renovation) or only occupied for short periods (private holiday homes, short term rentals).

The SCGM projects that the number of dwellings in the Selwyn District will increase from 30,559 in 2022 to 42,617 in 2034 which represents an increase of 12,058 dwellings in the next ten years. Furthermore, the SCGM projects that the number of dwellings in the Selwyn District by 2054 will reach 61,318 which represents an increase of 30,759 dwellings in the next thirty years. The projections indicate that there will be a doubling (over a 100% increase) in the number of dwellings by 2054.



7.6.4 Township Population, Households and Dwellings Projections

The spatial nature of growth is important for forward planning. The SCGM allocates demand to locations in the Selwyn District using a midpoint between the demand shares in the Stats NZ projections SA2 and recent building consents (2019-2022).

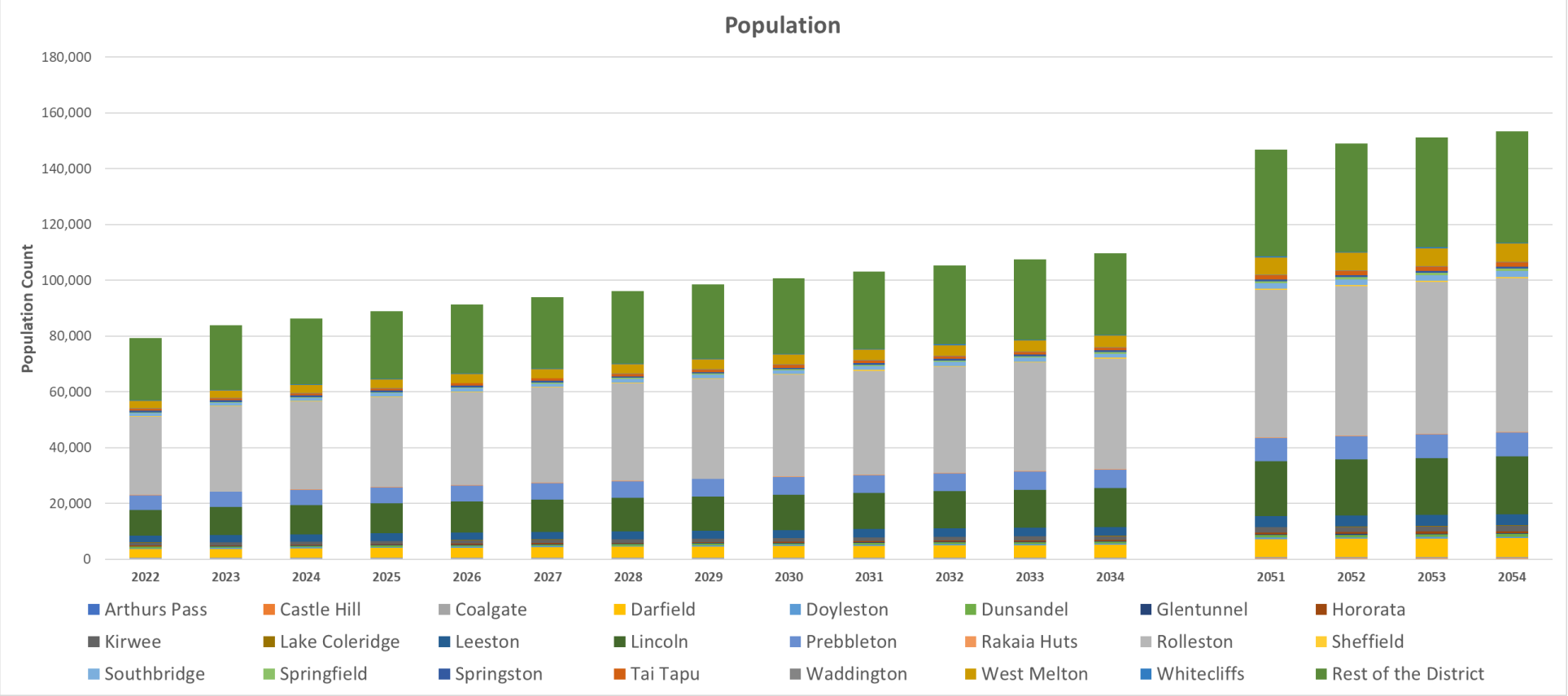
Since the projections were prepared for LTP 2021-2031, there has been sustained and immense growth in the district. The updated projections which use the Stats NZ 2022 base year have Rolleston achieving the status of city around 2050.[1] This means that Rolleston by 2050 would be comparable to present day small cities of Rotorua, Nelson, Invercargill, Whangārei, Whanganui and Hastings. Rolleston is projected to receive around 38% of the Selwyn District's total population between 2022-2034.

Strong growth is projected for all of the townships in the Greater Christchurch portion of the district. Lincoln is project to grow a population of just over 20,000 by 2054 which is comparable to Rolleston in 2019. Lincoln is projected to receive around 15.8% of the Selwyn District's total population between 2022-2034. Prebbleton is projected to grow to a population of 8,525 which is comparable to present day Lincoln. Prebbleton is projected to receive around 4.7% of the Selwyn District's total population between 2022-2034. West Melton and Darfield are projected to each receive around 4.6% of the Selwyn District's total population between 2022-2034. The population, households and dwellings projections by township are included in Appendix 4 of this report.

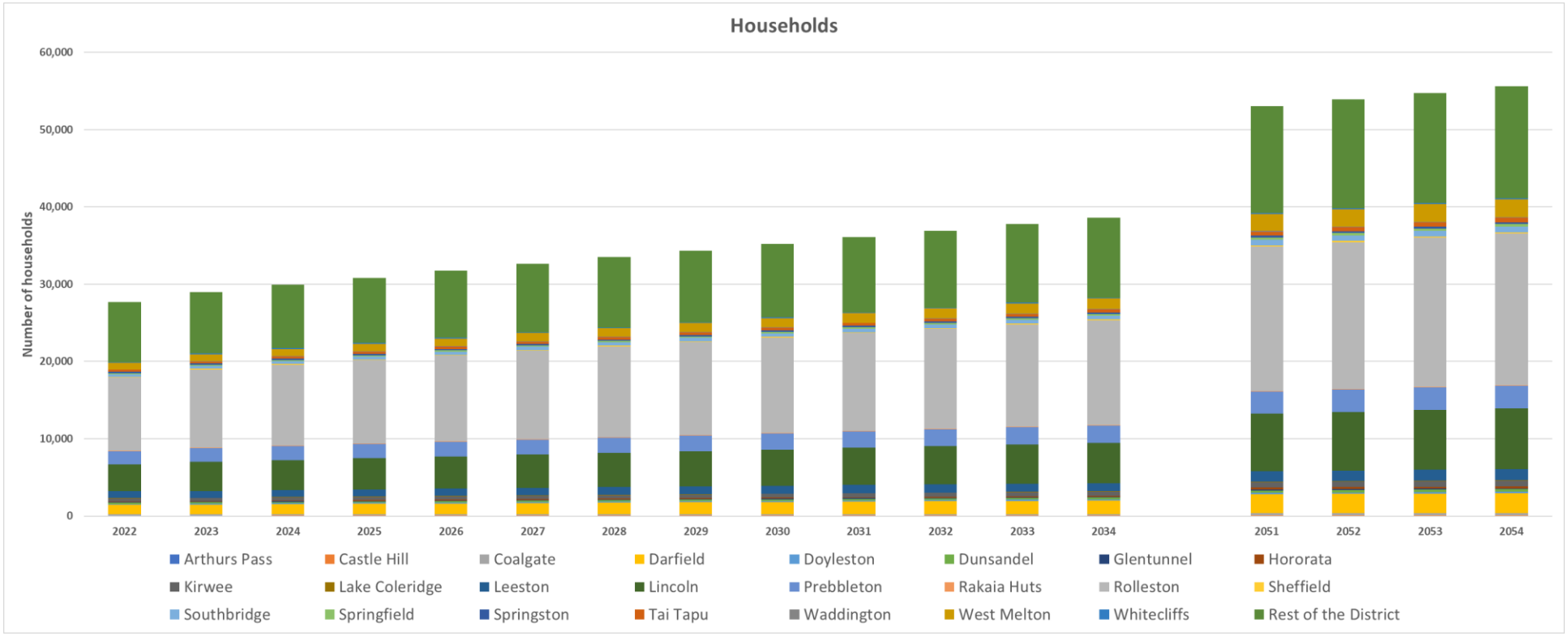
[1] Schedule 3 of the Local Government Act (2002)

Individual Community Projections

	Population																
Township	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2051**	**2052**	**2053**	**2054**
Arthurs Pass	45	49	51	53	54	56	57	58	59	61	62	62	63	67	67	68	68
Castle Hill	49	64	70	76	82	87	92	96	101	105	109	113	117	184	188	192	196
Coalgate	384	390	399	408	416	425	433	442	451	459	468	477	483	600	607	614	621
Darfield	3120	3224	3350	3476	3603	3729	3841	3954	4067	4179	4287	4395	4505	6365	6474	6584	6693
Doyleston	334	337	344	351	358	365	371	378	384	390	396	402	407	487	491	496	501
Dunsandel	491	497	513	529	546	562	578	593	608	624	639	654	669	915	930	944	958
Glentunnel	189	192	195	199	203	207	210	214	218	221	225	229	232	281	284	287	290
Hororata	254	259	276	293	310	326	343	360	376	393	409	426	441	697	712	727	742
Kirwee	1008	1047	1081	1114	1147	1180	1212	1244	1277	1309	1341	1372	1397	1817	1842	1867	1891
Lake Coleridge	74	82	85	89	92	95	97	100	102	104	106	107	108	121	121	122	123
Leeston	2490	2515	2570	2626	2681	2737	2784	2831	2878	2925	2969	3013	3059	3843	3889	3936	3982
Lincoln	9180	10060	10438	10817	11195	11574	11922	12269	12617	12964	13302	13639	13978	19751	20090	20430	20770
Prebbleton	5260	5392	5523	5655	5786	5917	6032	6148	6263	6379	6489	6599	6691	8250	8342	8433	8525
Rakaia Huts	185	186	187	188	189	190	191	191	192	193	194	195	195	203	203	204	204
Rolleston	28000	30465	31363	32261	33160	34058	34861	35665	36468	37271	38043	38814	39597	52902	53685	54467	55250
Sheffield	217	220	228	235	242	250	257	264	271	278	286	293	299	413	420	427	433
Southbridge	1058	1075	1111	1147	1184	1220	1255	1290	1325	1361	1396	1430	1460	1956	1985	2015	2044
Springfield	370	377	393	410	426	443	459	475	491	507	523	540	555	813	829	844	859
Springston	472	484	490	496	502	508	513	519	524	530	535	541	545	613	617	621	625
Tai Tapu	717	747	777	806	835	864	892	919	946	974	1000	1027	1053	1485	1510	1536	1561
Waddington	150	152	155	157	160	163	166	168	171	174	176	179	181	223	225	227	230
West Melton	2640	2744	2865	2986	3108	3229	3343	3458	3572	3687	3799	3912	4036	6152	6277	6401	6525
Whitecliffs	226	230	235	241	246	252	257	263	268	274	279	285	289	364	369	373	378
Rest of the District	22355	22993	23611	24230	24849	25468	26026	26584	27142	27700	28237	28775	29304	38303	38833	39362	39891
Total District	79270	83780	86311	88842	91373	93904	96193	98483	100772	103061	105270	107479	109664	146806	148990	151175	153360

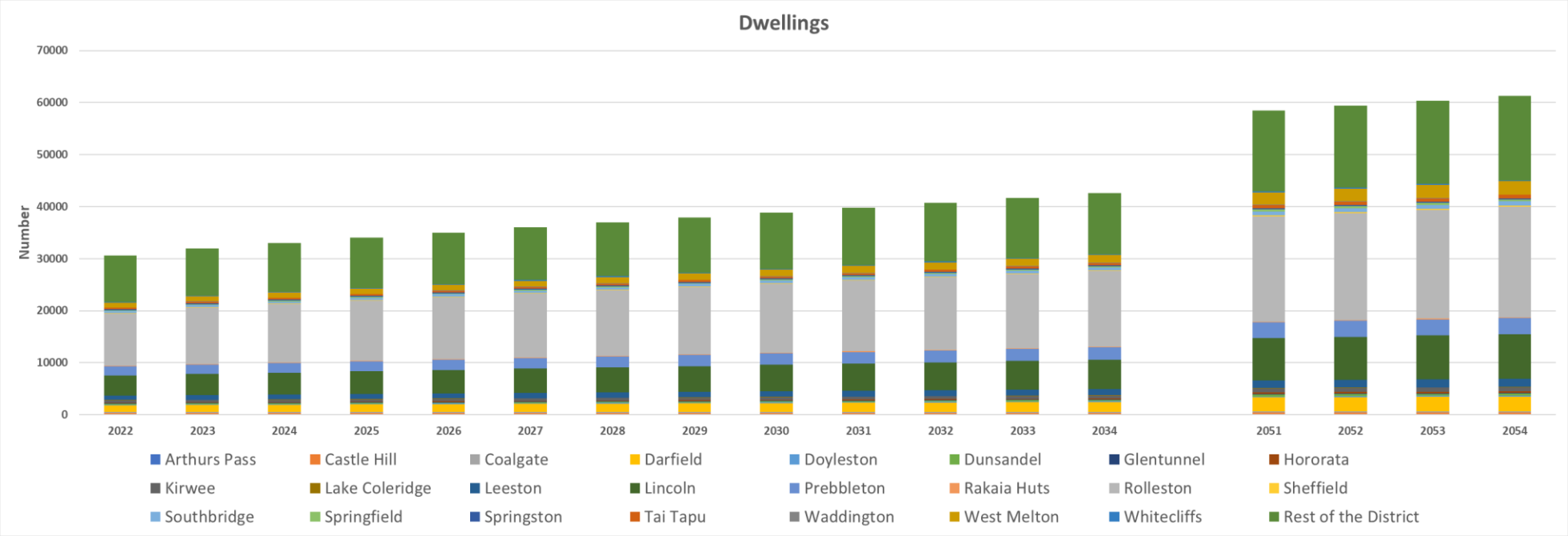

Population
Population Count
180,000
160,000
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2051
2052
2053
2054
Arthurs Pass
Castle Hill
Coalgate
Darfield
Doyleston
Dunsandel
Glentunnel
Hororata
Kirwee
Lake Coleridge
Leeston
Lincoln
Prebbleton
Rakaia Huts
Rolleston
Sheffield
Southbridge
Springfield
Springston
Tai Tapu
Waddington
West Melton
Whitecliffs
Rest of the District

	Households																
Township	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2051**	**2052**	**2053**	**2054**
Arthurs Pass	31	31	31	31	31	31	31	31	31	31	31	31	31	32	32	32	32
Castle Hill	34	40	42	44	46	48	50	51	53	54	55	56	58	87	89	90	92
Coalgate	150	151	155	158	161	164	167	170	173	176	180	183	185	233	236	239	241
Darfield	1224	1254	1299	1345	1390	1436	1478	1521	1563	1605	1647	1688	1731	2453	2495	2538	2580
Doyleston	124	125	127	130	132	135	137	139	142	144	146	148	150	184	186	188	190
Dunsandel	169	171	176	182	188	193	199	204	209	215	220	225	231	328	334	339	345
Glentunnel	74	74	76	77	78	80	81	82	84	85	86	88	89	109	110	112	113
Hororata	86	88	93	99	105	111	116	122	128	133	139	145	151	250	256	262	268
Kirwee	379	390	402	413	425	437	448	459	471	482	494	505	515	690	700	711	721
Lake Coleridge	51	52	52	52	52	53	53	53	53	53	54	54	54	57	57	58	58
Leeston	869	877	897	917	937	957	974	992	1010	1027	1044	1061	1079	1383	1401	1419	1437
Lincoln	3501	3753	3889	4025	4162	4298	4429	4560	4691	4822	4952	5081	5213	7452	7584	7716	7848
Prebbleton	1715	1753	1800	1847	1894	1942	1985	2029	2072	2116	2158	2200	2236	2840	2875	2911	2946
Rakaia Huts	64	64	64	65	65	65	66	66	66	67	67	67	67	72	73	73	73
Rolleston	9447	10152	10475	10799	11123	11446	11749	12052	12355	12658	12953	13249	13553	18717	19020	19324	19628
Sheffield	78	79	81	84	87	89	92	94	97	99	102	105	107	151	154	156	159
Southbridge	365	370	383	395	408	420	432	445	457	469	481	493	505	697	708	720	731
Springfield	133	135	141	147	152	158	164	170	176	181	187	193	199	298	304	309	315
Springston	179	181	183	185	187	189	190	192	194	196	198	199	201	232	234	236	237
Tai Tapu	245	254	264	274	284	295	304	314	323	333	342	352	362	533	543	553	563
Waddington	54	54	55	56	57	58	59	60	61	62	63	64	65	81	82	83	84
West Melton	850	880	924	967	1011	1055	1098	1141	1184	1228	1271	1314	1362	2183	2231	2280	2328
Whitecliffs	88	89	91	93	95	97	99	101	103	105	107	109	111	141	143	145	147
Rest of the District	7794	7977	8204	8431	8658	8885	9101	9317	9534	9750	9963	10175	10379	13840	14043	14247	14450
Total District	27703	28993	29905	30816	31728	32640	33503	34366	35229	36093	36939	37786	38634	53044	53892	54739	55587


Households
Number of households
60,000
50,000
40,000
30,000
20,000
10,000
0
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2051
2052
2053
2054
Arthurs Pass
Castle Hill
Coalgate
Darfield
Doyleston
Dunsandel
Glentunnel
Hororata
Kirwee
Lake Coleridge
Leeston
Lincoln
Prebbleton
Rakaia Huts
Rolleston
Sheffield
Southbridge
Springfield
Springston
Tai Tapu
Waddington
West Melton
Whitecliffs
Rest of the District

	Dwellings																
Township	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2051**	**2052**	**2053**	**2054**
Arthurs Pass	133	133	133	133	133	133	133	133	133	133	133	133	134	134	134	134	134
Castle Hill	188	195	197	200	202	204	206	207	209	210	212	213	215	247	249	251	253
Coalgate	171	173	176	180	183	187	190	194	197	200	204	207	210	263	266	269	272
Darfield	1312	1345	1395	1445	1495	1545	1592	1639	1685	1732	1778	1824	1871	2667	2714	2761	2808
Doyleston	133	134	137	139	142	145	148	150	153	155	158	160	162	199	202	204	206
Dunsandel	187	189	195	201	207	214	220	226	231	237	243	249	255	362	369	375	381
Glentunnel	98	99	100	102	103	105	107	108	110	111	112	114	115	137	139	140	141
Hororata	98	100	106	113	119	125	131	138	144	150	156	163	169	279	285	292	298
Kirwee	407	419	432	445	458	470	483	496	508	521	533	546	557	750	761	773	784
Lake Coleridge	57	58	58	58	59	59	59	60	60	60	60	60	60	64	64	64	65
Leeston	924	932	954	976	998	1020	1040	1059	1079	1098	1117	1136	1155	1491	1511	1531	1551
Lincoln	3773	4051	4201	4352	4502	4652	4797	4942	5086	5231	5373	5516	5661	8132	8277	8423	8568
Prebbleton	1780	1821	1874	1926	1978	2030	2078	2126	2174	2222	2269	2315	2354	3021	3060	3099	3138
Rakaia Huts	121	121	121	122	122	123	123	124	124	124	124	125	125	130	130	131	131
Rolleston	10062	10839	11196	11553	11910	12267	12601	12935	13269	13603	13930	14256	14591	20287	20622	20957	21292
Sheffield	87	88	91	94	97	99	102	105	108	111	114	116	119	168	171	173	176
Southbridge	392	398	411	425	439	453	467	480	494	507	520	534	546	758	771	783	796
Springfield	160	162	169	175	181	188	194	201	207	213	220	226	232	342	348	355	361
Springston	188	190	193	195	197	199	201	203	205	207	209	211	213	247	249	251	253
Tai Tapu	281	291	302	313	324	336	347	357	368	378	389	399	410	598	609	620	632
Waddington	60	60	61	63	64	65	66	67	68	69	70	71	72	90	91	92	94
West Melton	890	923	971	1019	1068	1116	1164	1212	1259	1307	1354	1402	1455	2360	2414	2467	2520
Whitecliffs	121	122	124	127	129	131	133	136	138	140	142	144	146	180	182	184	186

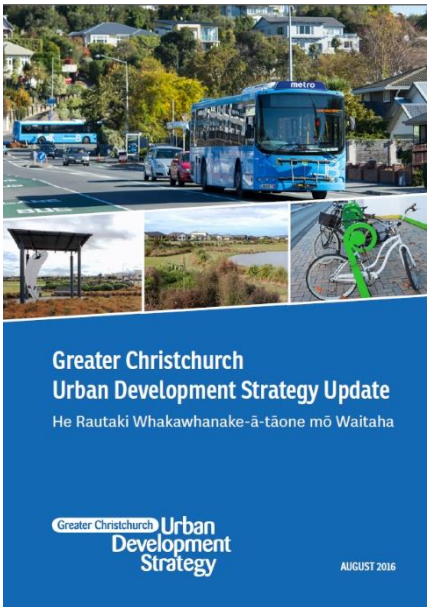
Rest of the District	8936	9139	9391	9638	9889	10139	10378	10617	10856	11095	11328	11562	11790	15607	15830	16054	16278
Total District	30559	31982	32988	33994	34999	36005	36957	37910	38862	39814	40748	41682	42617	58513	59448	60383	61318



7.7 Greater Christchurch Urban Development Strategy and Wider Planning

7.7.1.1 *Greater Christchurch Urban Development Strategy*

The Greater Christchurch Urban Development Strategy (UDS) has a significant influence on Council's planning and actions. The UDS area includes the Springs and Selwyn Central Wards of the District.



The Greater Christchurch Urban Development Strategy (the Strategy) is a bold and ambitious plan for managing urban development that protects water, enhances open spaces, improves transport links, creates more liveable centres and manages population growth in a sustainable way.

The Strategy vision is for a greater Christchurch for the residents of the area (living south of the Ashley River and north of the Selwyn River) and the Strategy partners, Environment Canterbury, the Christchurch City Council, Selwyn and Waimakariri District Councils and the New Zealand Transport Agency.

The Strategy provides the primary strategic direction for the Greater Christchurch area, including the location of future housing, development of social and retail activity centres, areas for new employment and integration with transport networks. It also establishes a basis for all organisations, not just the Strategy partners, and the community to work collaboratively to manage growth.

The Strategy was created through a three-year long consultation and development process initiated in 2004 due to rising concerns over the lack of collaborative planning and leadership to manage growth in the area in a sustainable way. Community consultation undertaken by the Strategy partners resulted in over 3,250 submissions on growth management options for the area.

In 2016 the Strategy was revised to align with post-earthquake priorities and legislation. The key changes were the establishment of new guiding principles and strategic goals. This led to new implementation methods and the support of the "Resilient Greater Christchurch Plan". The actions have been updated, with Council having a role as UDS partner.

Greater Christchurch Urban Development Strategy

Strategic goals

Healthy communities

- The distinct identities and sense of place of the towns, suburbs and city areas are recognised and enhanced.
- Ngāi Tahu is able to reinforce and re-establish connections with ancestral land, waterways and other taonga, and enhance the Ngāi Tahu sense of identity and belonging in the region.
- People and communities have equitable access to a range of integrated community infrastructure, facilities and services, including education, health, sport, recreation and core council services.
- Individuals, whānau and communities are empowered to participate and engage with strategy partners.
- The increasing diversity of the population and communities is recognised, and reflected in strategies, plans, programmes and projects.
- With good urban design, neighbourhoods and their centres include communal spaces, are liveable, walkable, safe and attractive, and have good connectivity and accessibility.
- Buildings and homes incorporate sustainable building principles and innovative design so that they are warm, safe and accessible.
- Housing offers a more diverse range of types and sizes. Affordable housing provides for the needs of different people and groups.
- Ngāi Tahu whānau are able to develop papakāinga/kāinga nohoanga, and use Māori reserve land to provide for their economic, social and cultural wellbeing.

Enhanced natural environments

- Groundwater quality and quantity are maintained or improved.
- Indigenous biodiversity, ecosystems and mahinga kai values are protected and enhanced.
- The many values of the coastline, estuaries, wetlands and waterways are recognised and restored, and their ecosystem services are recognised.
- Resource efficiency is supported by energy and water conservation, waste minimisation and local food production.
- Air quality is improved and maintained.

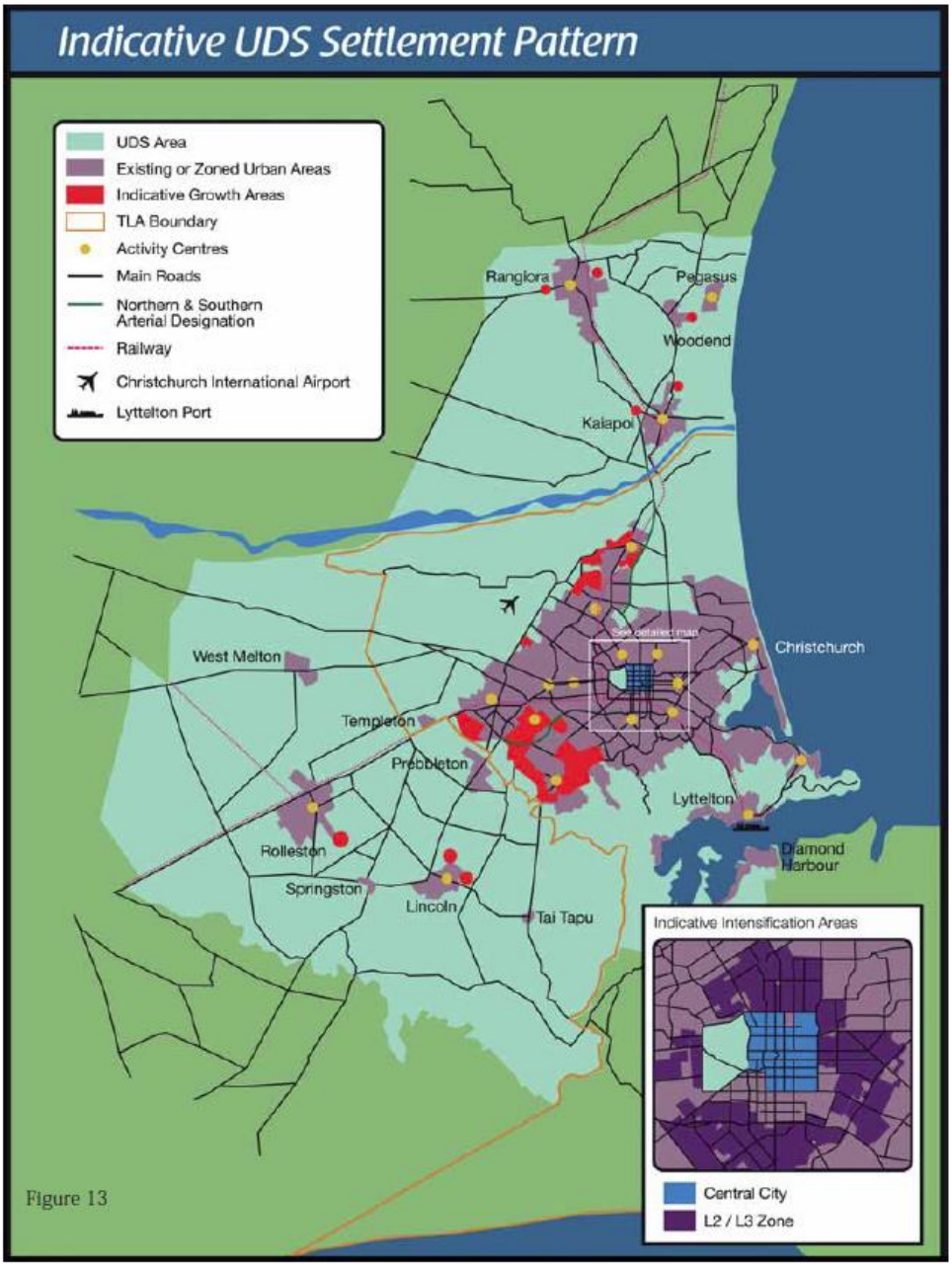
Prosperous economies

- Land, water and other valued resources are able to be used sustainably and within agreed limits.
- Adequate land for commercial and industrial uses is available in appropriate locations. The rebuilding and regeneration needs of businesses are well addressed.
- Economic development embraces innovation and technology, and is supported by effective and efficient transport and infrastructure.
- A collaborative and connected business environment supports workforce education and retention.

Integrated and managed urban development

- Clear boundaries for urban development are defined and maintained. The urban area is consolidated by redeveloping and intensifying existing urban areas.
- New urban development is well integrated with existing urban areas. Sufficient land is available to meet needs for regeneration and future land use.
- We understand and plan for risk from natural and other hazards, including flooding, seismic activity, sea level rise and climate change.
- A network of vibrant and diverse key activity and neighbourhood centres supports the Christchurch central city, incorporates mixed-use and transport-orientated development, supports increased density and diversity of housing, and provides access to community facilities.
- An efficient, reliable, safe and resilient transport system for people and businesses reduces dependency on private motor vehicles, promotes active and public transport, and improves accessibility for all people.
- Key public transport corridors and routes are identified and protected. The transport network can readily adapt to new technology and modes.
- Infrastructure, including transport, is resilient, timely and affordable, and comprehensively integrated with land use planning.
- Strategic regional and sub-regional infrastructure, including Lyttelton Port and Christchurch International Airport, service and utility hubs, and existing and future corridors, is protected.

Figure 7-1: Indicative UDS Settlement Pattern



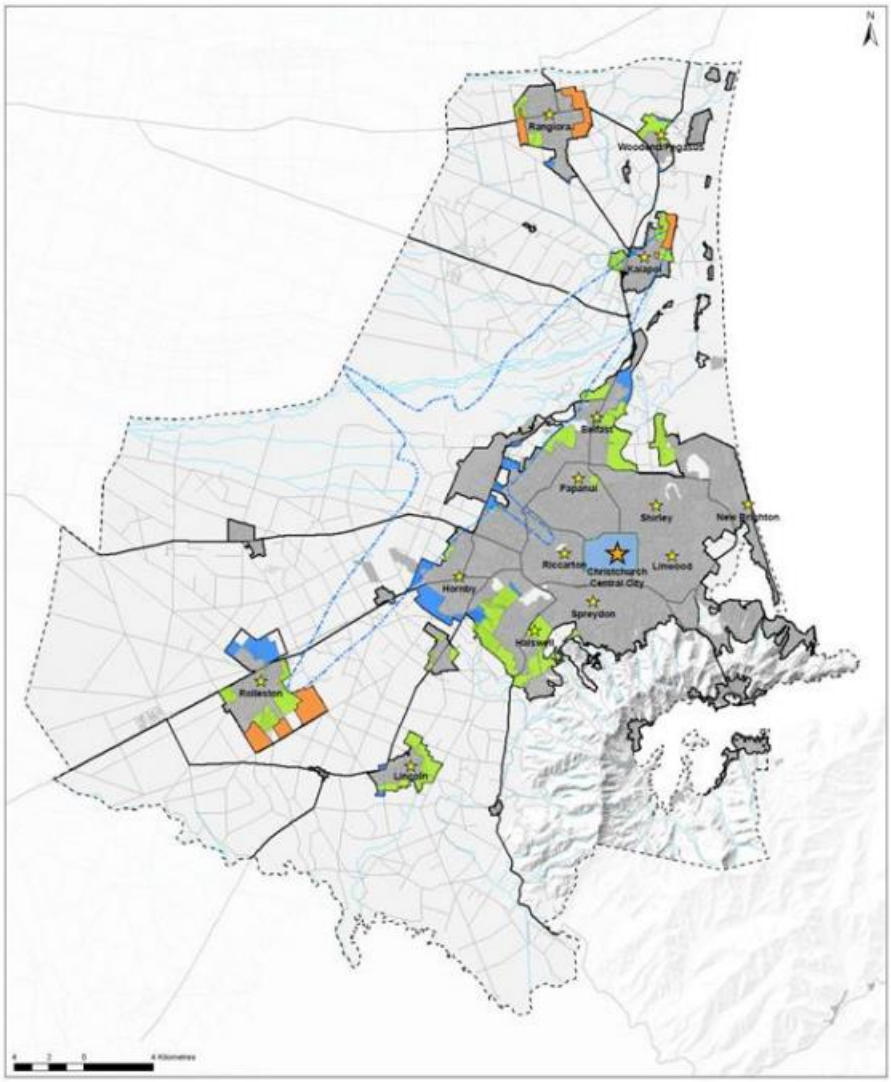
7.7.1.2 *Regional Policy Statement Proposed Change 1 (Urban Development Strategy)*

Proposed Change 1 was developed to address land use and urban growth management in Greater Christchurch until 2041. It introduced a new Chapter 12A (Development of Greater Christchurch) to the Regional Policy Statement which sets out the land use distribution, household densities for various areas and other key components for consolidated and integrated urban development. It also sets out which land is to remain rural for natural resource protection or for other reasons.

The Minister for the Environment, the Hon David Parker, approved Change 1 to Chapter 6 of the Canterbury Regional Policy Statement (CRPS) under the Streamlined Planning Process on 28 May 2021.

7-2: Canterbury Regional Policy Statement Proposed Change No.1

Map A - Greenfield Priority Areas and Future Development Areas (viewable in more detail at www.ecan.govt.nz)



7.7.1.3 *Land Use Recovery Plan*

The Land Use Recovery Plan (LURP) took effect in December 2013. It is a statutory document and directs Christchurch City Council, Waimakariri and Selwyn District Councils and Canterbury Regional Council (ECan) to make changes to District Plans, the Canterbury Regional Policy Statement and other instruments. Some of these changes take effect immediately and others are to be developed by the relevant Councils within specified timeframes.

In particular, the LURP addresses:

- the location and mix of residential and business activities.

- priority areas for residential and business land development.
- ways to provide for a range of housing types, including social and affordable housing.
- ways to support recovery and rebuilding of central city, suburban and town centres.
- ways to support delivery of infrastructure and transport networks to serve the priority areas.

Action 18(i) to (vii) identified seven greenfield priority areas for future residential development. The Council has developed Outline Development Plans (ODPs) with associated text amendments through an extensive consultation process with landowners, affected parties and stakeholders. The ODPs have been developed in accordance with best practice urban design and subdivision criteria and will facilitate the provision of up to 4,500 additional residential sections in the District.

Accordingly, the LURP has considerable influence on the scale and pattern of growth in Selwyn District in the immediate timeframe.\

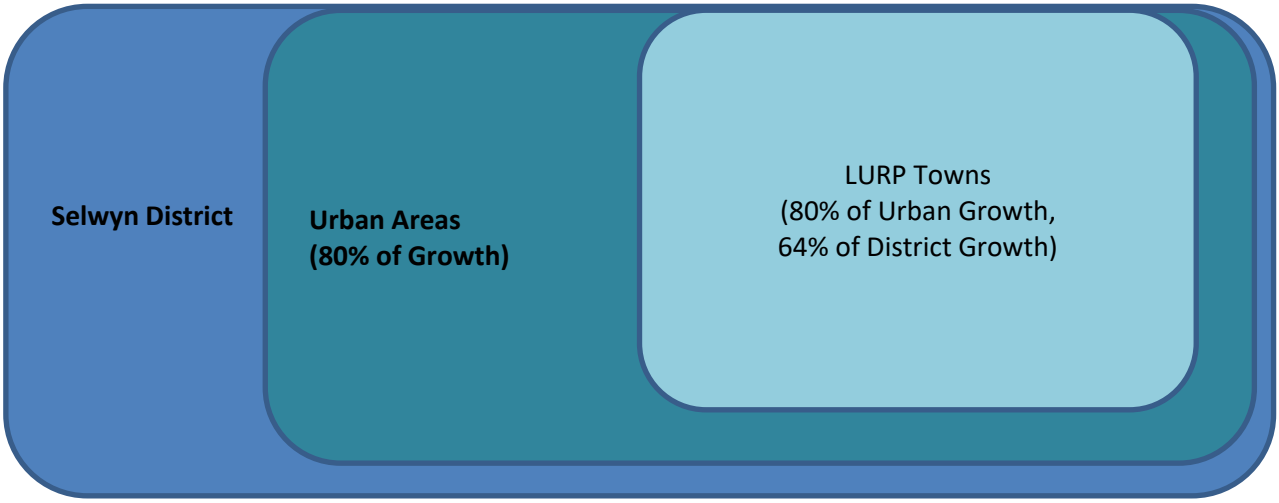


Figure 7-3: UDS Greenfields (indicative) Priority Areas

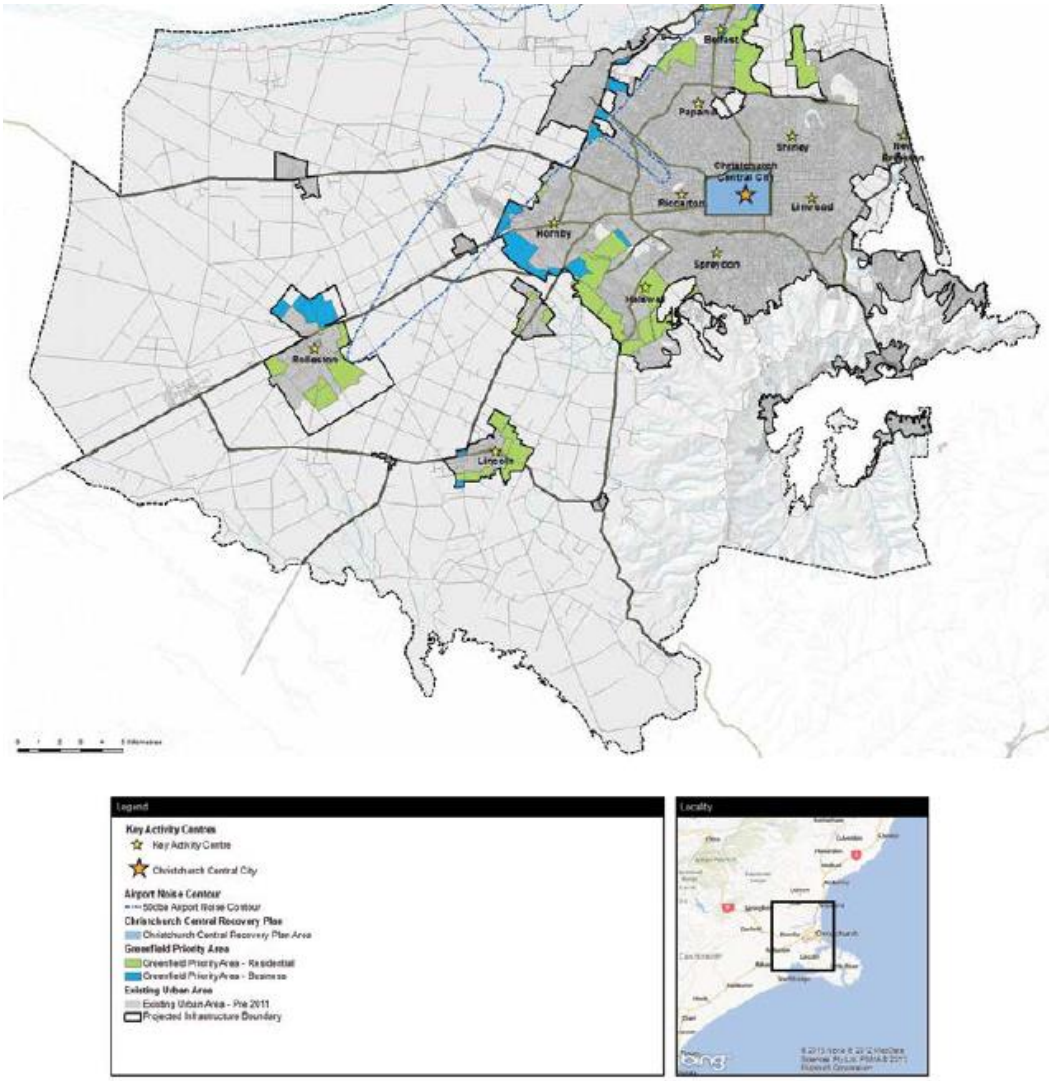


Figure 4: Map A Greenfield Priority Areas

Figure 7-4: UDS Key Regional Infrastructure requirements

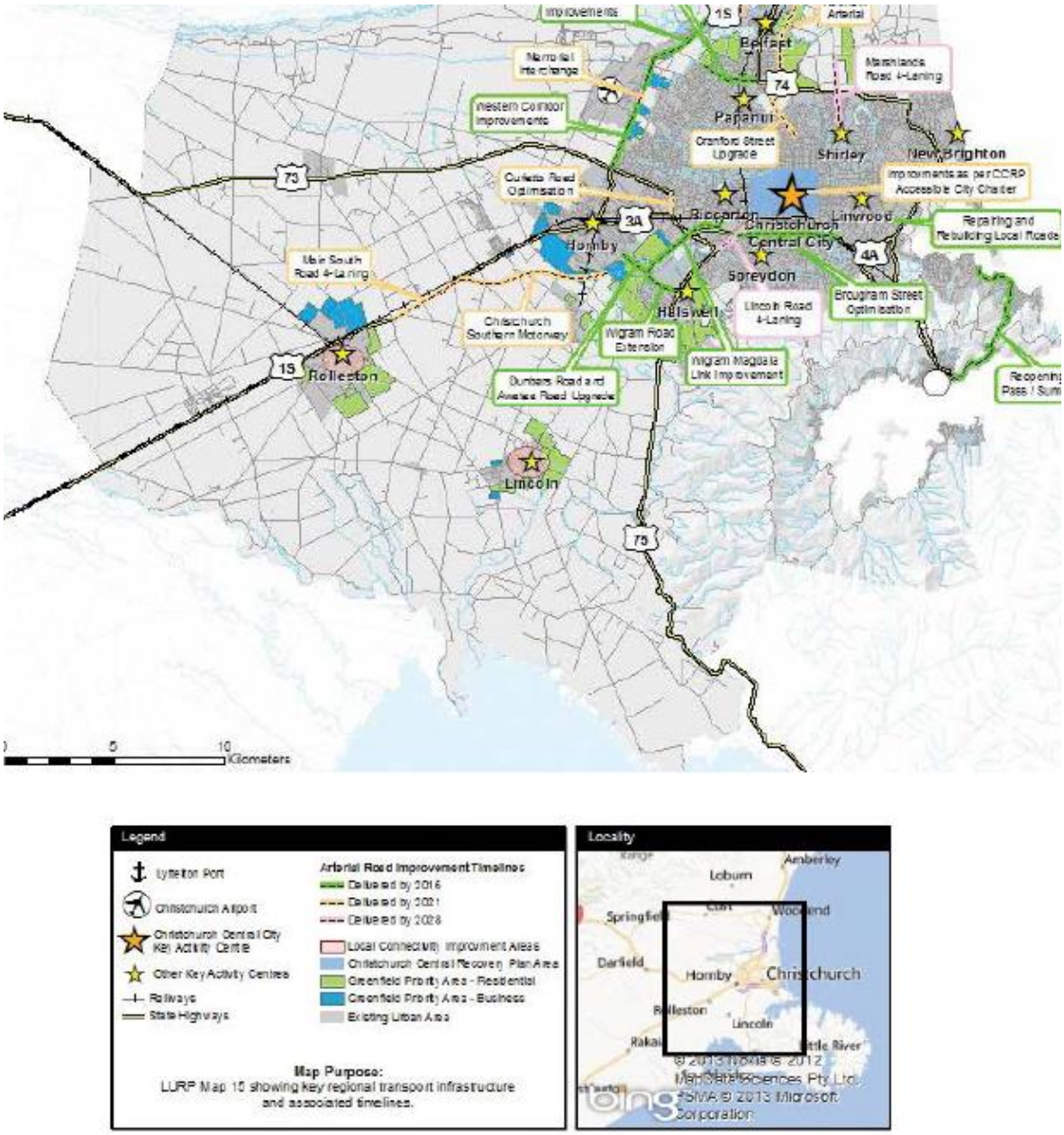


Figure 6: Key regional infrastructure requirements through to 2028

7.7.1.4 *District Plan Review*

The Resource Management Act 1991 (RMA) requires all operative provisions of a plan to be reviewed every 10 years.

The current District Plan was notified in two volumes (Rural Volume in 2000 and Township Volume in 2001) and remains in this two-volume format. While the Plan has yet to be made fully operative, there are large parts of the Plan that have not changed since 2004 when decisions on submissions were released. It is therefore timely to undertake a holistic appraisal of how to improve the Plan, with the aim of the review to produce a 'second generation' District Plan.

At a broad level, it is recognised that the existing District Plan has become unwieldy, with a total of 1500 pages and an excessive number of zones and appendices, including zones within appendices. A number of plan changes have also lead to various approaches to different issues within the Plan, most notably being the way in which urban growth is managed within and outside the Greater Christchurch area. In addition, the Resource Consent team have identified a range of issues in administering specific parts of the Plan that could be improved through a District Plan Review.

Council agreed to undertake a full review of the District Plan as a matter of priority at a Council meeting held on 27 May 2015. The District Plan review is expected to take three to four years, but this will be longer if there are complex submissions to work through.

Alignment of the District Plan Review and Long Term Plan processes has been pursued where possible. For 2018, the Long Term Plan will use 'Community Outcomes,' while the 2021 Long Term Plan may align more closely with the objectives in the District Plan to reflect the aspirations of the community for the District.

7.8 Influences on Transportation Growth and Demand

There are a number of issues that influence demand forecasting and improvements. These issues include:

- local population trends.
- accuracy of predicted future populations.
- local economic trends and the diversity of industries.
- changing technology.
- changing legislation requirements.
- changing community service requirements.

7.8.1 Population Growth and Zoning Changes

Particular trends that have a significant impact on the road asset include:

- On going growth of the satellite townships closer to Christchurch, such as Rolleston, Lincoln and Prebbleton and the travel between and within communities.

- Proposed Plan Change 7 provides for the strategic residential growth around townships within the Greater Christchurch Area, including Rolleston, Lincoln, Prebbleton and West Melton. It is a key method for giving effect to Proposed Change 1 (PC1) to the Regional Policy Statement in Selwyn. The broad objective and policy framework put in place by the Plan Change will manage business and well as residential growth, however the zoning of specific blocks of land primarily relates to new residential development areas around each of the existing townships. Outline Development Plans (ODPs) have been developed for inclusion into the District Plan as part of the plan change process. These seek from the outset to achieve good urban design and sustainable outcomes by establishing how each block will spatially develop across all infrastructural assets, and how these developments will link to existing and other new areas.

  One of the key elements required to be shown on the ODPs are roading, walking and cycling routes and networks. Figure below is the ODP for Area 1 in Rolleston and shows the integrated planning across the Water, Transport and Reserves Asset group.

- Plan Change 7 is rezoning over 600ha of Greenfields land and has a requirement to achieve a minimum net density of 10 households per hectare under PC1. It is expected that nearly 12,000 new households will result by 2041 under current growth predictions.

  Central Plains Irrigation Scheme – The ongoing development of this integrated water supply scheme to irrigate the central plains area of the District has the aim of increasing agricultural production.


Legend
ODP Boundary
Parcel
Recreation Reserve
Green links
Roads
Noise Abatement Zone
Waterway / Water race
40m noise abatement
Zone
SH 1
Main South Road
Newman Road
Stonebrook Drive
Grace Way
Realigned water race
Dunns Crossing Road
Burnham School Road
East Maddisons Road
Emerson Lane
Melville Crescent
Brookside Road
Lowes Road
N
0
112.5
225
m
Outline Development Plan
Area 1 - Rolleston
Green Network

7.8.2 Economic Trends

The main industry groups in the district are:

- Agriculture.
- Tourism.
- Education and Research.

7.8.2.1 *Agriculture*

Farming has and is expected to continue to have, a significant impact on the District's economy, with a number of District towns being service centres for the rural community. One of Council's objectives is to ensure that this industry will not be adversely affected by changes in Council policy and planning requirements.

Farming in the District has responded to climatic and trade uncertainties in recent years by diversifying and, in some cases, subdividing and selling land for residential development. As a result dairying, deer farming and residential development have increased while sheep farming has declined. Viticulture and olive growing are also expanding in response to the more Mediterranean climatic conditions of recent years (hot summers, mild winters).

Synlait
In 2008, Synlait opened a new dairy factory outside Dunsandel. Currently, the Synlait Milk facility processes more than 550 million litres of milk each year. It is capable of processing 3.2 million litres of raw milk per day, from which up to 340 metric tonnes of milk powder can be produced along with other high-value functional ingredients.

Fonterra
In 2012, Fonterra opened a new milk processing plant, located on SH 73 just west of Darfield.

Darfield produces regular and instant whole milk powder. At full capacity, it processes 7.2 million litres of milk per day, adding up to an annual production of 220,000 tonnes. Upon opening the facility employed more than 230 staff and involves a fleet of 37 tankers.

Westland Milk Products
Westland Milk Products is New Zealand's second biggest dairy co-operative and has a production facility in Rolleston.

In 2015 the West Coast's dairy co-operative increased its Canterbury presence by building a $40 million plant to make "long life" milk at Rolleston. The plant's development relates to the company's first venture into retail-ready liquid milk at the Izone industrial park.

Central Plains Water
Central Plains Water when completed will have capacity to provide water to an irrigable area of 60,000 Ha. The scheme utilises run-of-river water from both the Rakaia and Waimakariri rivers supported by Lake Coleridge. Central Plains Water will increase the productive capacity of Selwyn land which will mean more heavy vehicles moving within the District.

The combination supplying goods to dairy farms and collecting milk is a major contributor to heavy traffic on the Selwyn Network

7.8.2.2 *Tourism*

Tourism is a significant industry supported and encouraged by the Council. Tourist numbers have continued to grow nationally and within the Canterbury region. The growing trend to independent travellers has become more common in recent years.

A number of the small settlements such as Arthurs Pass, Rakaia, Castle Hill, and Lake Coleridge are popular places for holiday homes and recreational facilities. Arthurs Pass, Darfield and Springfield in particular support summer and winter-sports in the Craigieburn Basin, Arthurs Pass National Park, Lake Coleridge, the Rakaia Basin and Mt Hutt. These settlements also service long-distance traffic and provide tourist facilities on main tourist routes.

7.8.2.3 *Higher Education and Research*

Lincoln University is located on the outskirts of Lincoln Township. Education and Research Institutes located around Lincoln provide significant employment, in the District and Lincoln is widely regarded as a centre of excellence in agricultural and related research industry.

The crown research institutes located at Lincoln include AgRearch, Landcare Research, Plant & Food research.

7.8.2.4 *Rolleston Industrial Zone*

In 2000 Council looked to attract new commercial and industry ventures to the District. This prompted the development of the Rolleston Industrial Park, which has been established to promote and provide for this type of activity and growth. In recent years development has expanded beyond Izone, with a wider Rolleston Industrial Zone becoming established. Izone is now one of the larger industrial parks in New Zealand.

7.8.2.5 *Inland Ports*

Two inland transport hubs have been established in Rolleston, both on Jones Road in the Izone locale.

- Midland port - operated by the Lyttleton Port company
- MetroPort within the Izone development – operated by the ports of Tauranga and Timaru

Both facilities have access to road and rail and generate considerable freight movements.

The Rolleston Industrial Zone and inland ports generate significant heavy traffic.
While some is directly transported by rail, other freight is trucked to SHs via local roads.

7.8.2.6 *Other Industries*

Other industries that provide a varied source of employment in the district include:

- Commercial and Industrial (e.g. The Warehouse's distribution centre).
- Golf Courses e.g. Terrace Downs.
- Department of Corrections facilities.
- Hospitals.

- Dairying.
- Lake Coleridge Hydro Scheme.
- NZ Defence Force (Burnham Military Camp).
- Various Small to Medium industry e.g. Meadow Mushrooms.

In the long-term **transport**, postal and warehousing is projected to experience strong growth, which reflects the strong indicators of agglomeration in the industrial areas of Rolleston. The two inland ports in Rolleston are currently dominated by employment in the manufacturing, construction and wholesale trade industries, however the largest growth of employment in the inland port environs over the last few years has been in the transport, postal and warehousing industry.

7.8.3 Subdivision Development

Developers pay the full cost of development within new subdivisions, with new assets being vested in Council upon completion and the issuing of subdivision titles. However, on-going maintenance and renewal of the new roads and associated assets built in these developments is the responsibility of the Council.

Improvements will often be made to the existing road network in association with subdivision, for example new footpaths and kerbs and channels, access improvements, increased seal width, improved sight lines, etc. Typically, these are works that are directly associated with the subdivision itself, and have been 50% Council funded, 50% developer funded.

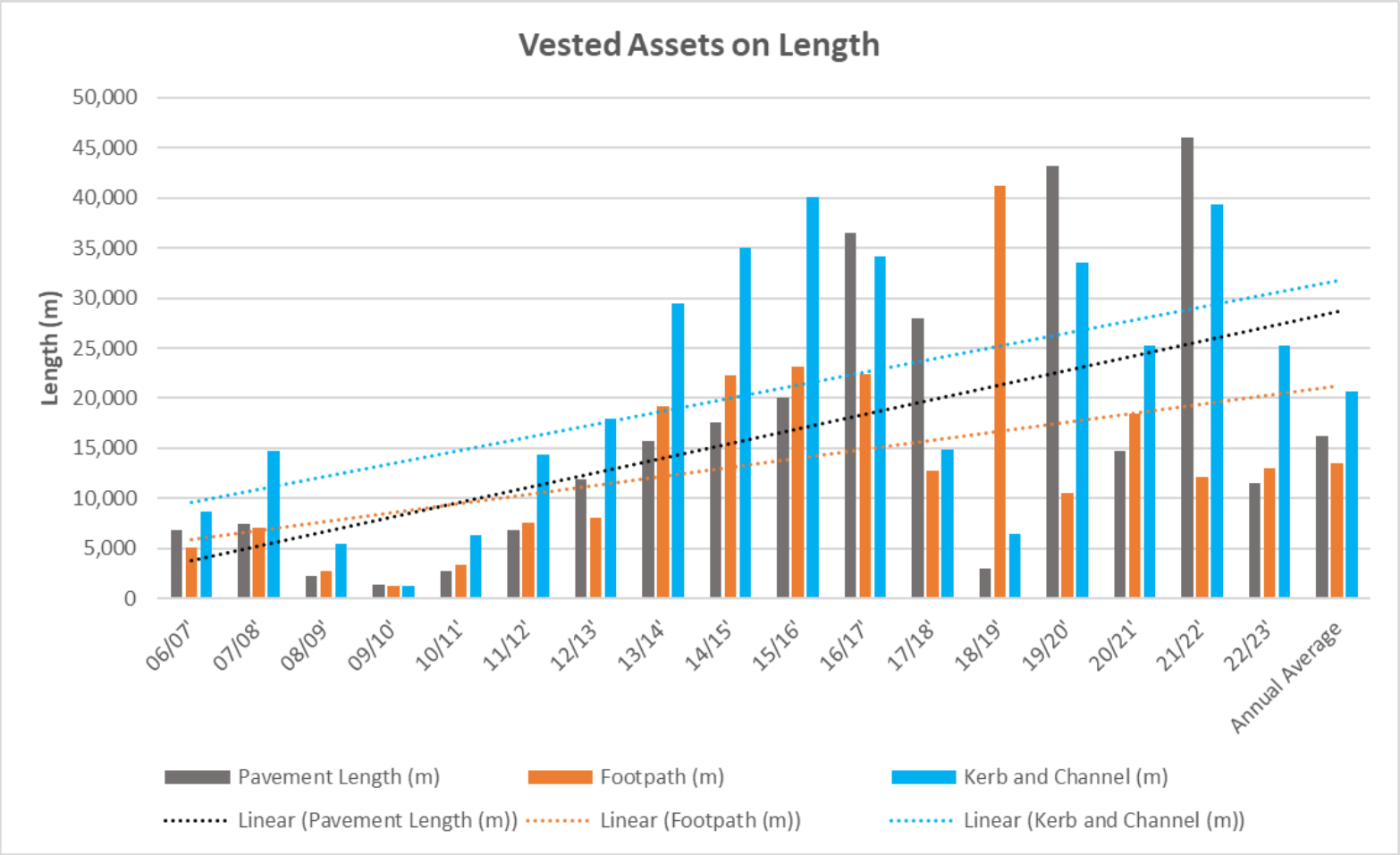
The policy for development contributions that may be charged for future subdivisions is established at a Council wide level, as provided for under the Local Government Act 2002. This Plan identifies those works that are known to be growth related, in whole or in part, and sets appropriate charges for development contributions under this policy.

Significant development is proposed around Lincoln and Rolleston. This was signalled in the Greater Christchurch Urban Development Strategy and its effects on wider road network were considered in the CRETS Study. However, local effects, such as the need for new footpaths on the existing roads fronting these developments, were not.

In addition, new commercial and industrial development could result in further new roads being vested in the Council. Maintenance and renewal costs will increase for all assets as new developments are completed and vested in Council.

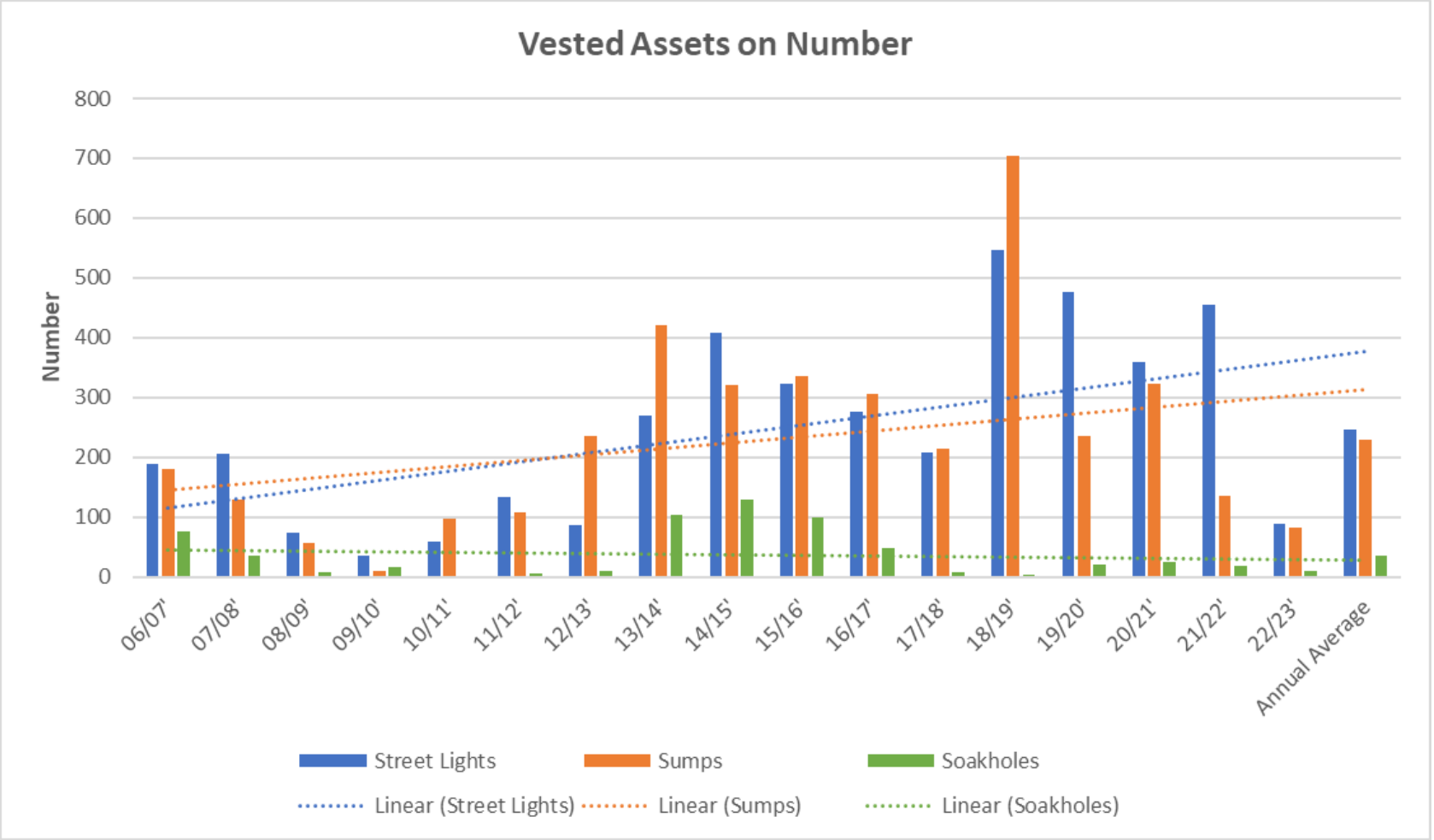
The quantities of new assets received from development since 1999 are shown in the following two charts.

Figure 7-5: Vested Assets – by Length



Source: RAMM (SW Channel)

Figure 7-6: Vested Assets — by Number



Source: RAMM (Carriageway)

7.9 Growth in use of the Transportation System

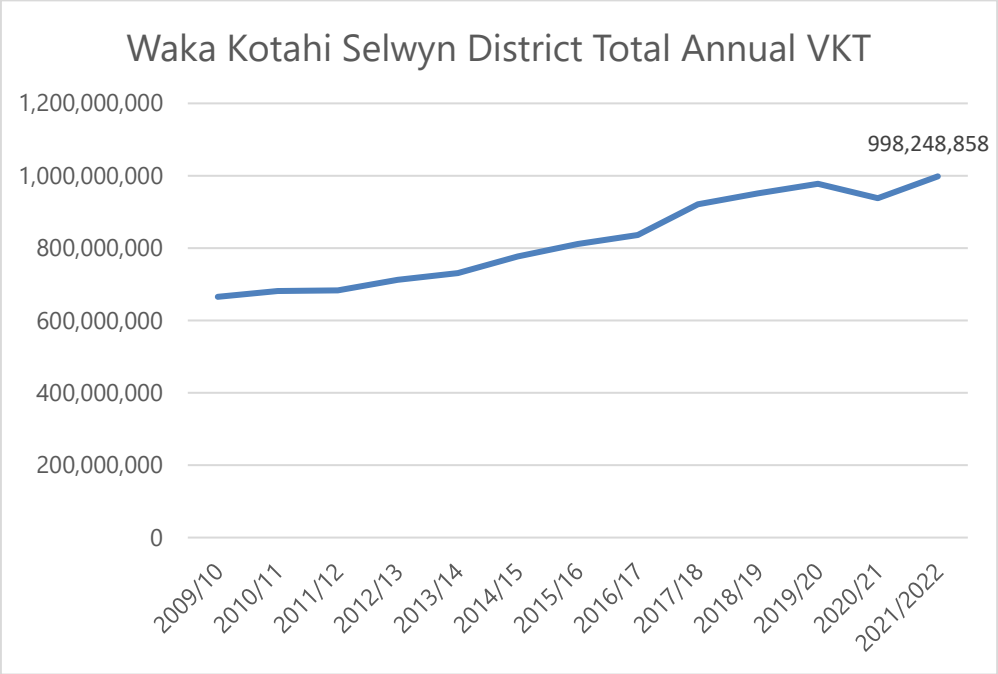
The transport system supports mobility, prosperity and overall wellbeing of communities. It connects our communities, allowing people to travel safely and efficiently across our diverse landscapes, and enables the safe and efficient movement of freight.

Transport is one of our largest sources of national greenhouse gas emissions. The latest national Greenhouse Gas Inventory, published in April 2023 contains data from 1990 to 2021, and found that emissions from road transport, a sub-category of the energy sector, made up 16% of national gross emissions in 2021. Stats NZ greenhouse gas emissions by region (industry and household): year ended 2021 found that for Canterbury 90.5% of household emissions were from transport.

In the Selwyn District, previous land use and transport investment decisions have encouraged high levels of private car use with consequentially low uptake of public transport. This has caused increasing traffic congestion, rising emissions, reduced amenity and has resulted in increased safety risks and poor health outcomes for local communities. Two-thirds of transport emissions come from the light vehicle fleet. Reducing reliance on fossil-fuelled vehicles is at the heart of the transport emissions challenge. In recent years there has been a greater effort to reduce reliance on cars and support people to walk, cycle and use public transport.

Vehicle-kilometres travelled (VKT) is a measure of the total annual vehicle kilometres travelled in an area and indicator of vehicle usage. The Government has set a target to reduce total kilometres travelled by the light fleet by 20% by 2035. Achieving this target would mean that national light vehicle VKT in 2035 should be about the same as it was in 2019, in spite of expected changes in population and economic growth. A National VKT Reduction Plan will and sub-national VKT reduction targets for Tier 1 urban areas will be released later in 2023. Territorial authorities use the Road Assessment and Maintenance Management (RAMM) database for estimating annual VKT. Estimating annual VKT using RAMM requires a number of assumptions and is often unable to produce VKT estimates by vehicle class (light and heavy). Waka Kotahi has produced estimates of VKT for the Selwyn District, using RAMM. The data is shown in the graph below.

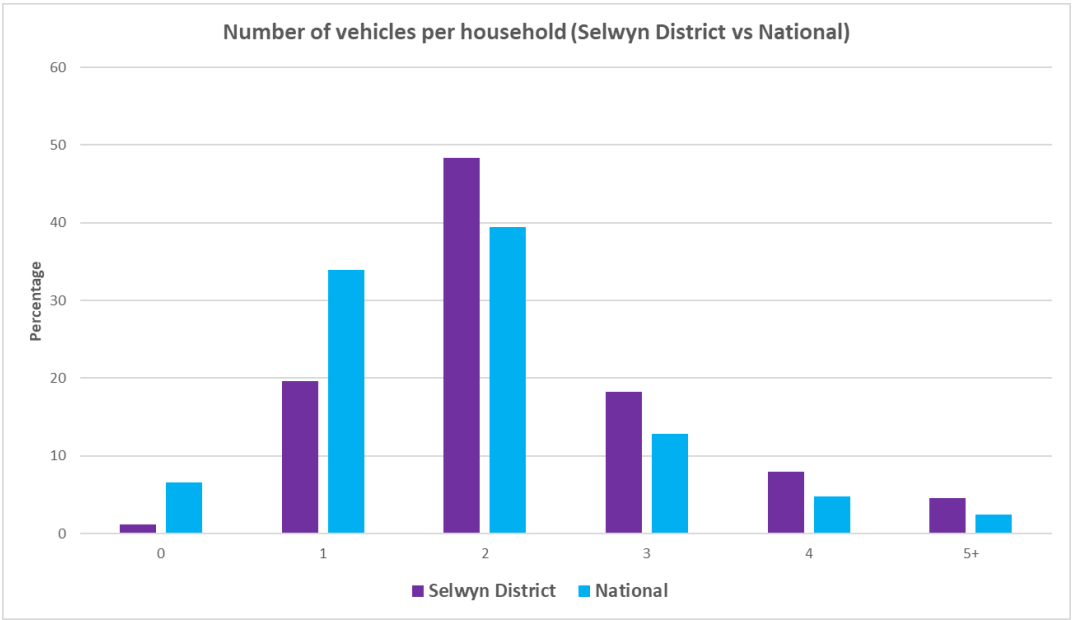
Total Vehicle Kilometres Travelled



Between 2011/12 and 2021/22 VKT in the Selwyn District has increased by 46%. This is line with both national and regional trends of increasing VKT. VKT is strongly correlated with GDP growth and the number of people in full time employment. The projections produced by the SCGM indicate that VKT could continue to trend upwards without significant and sustained mode shift interventions and initiatives.

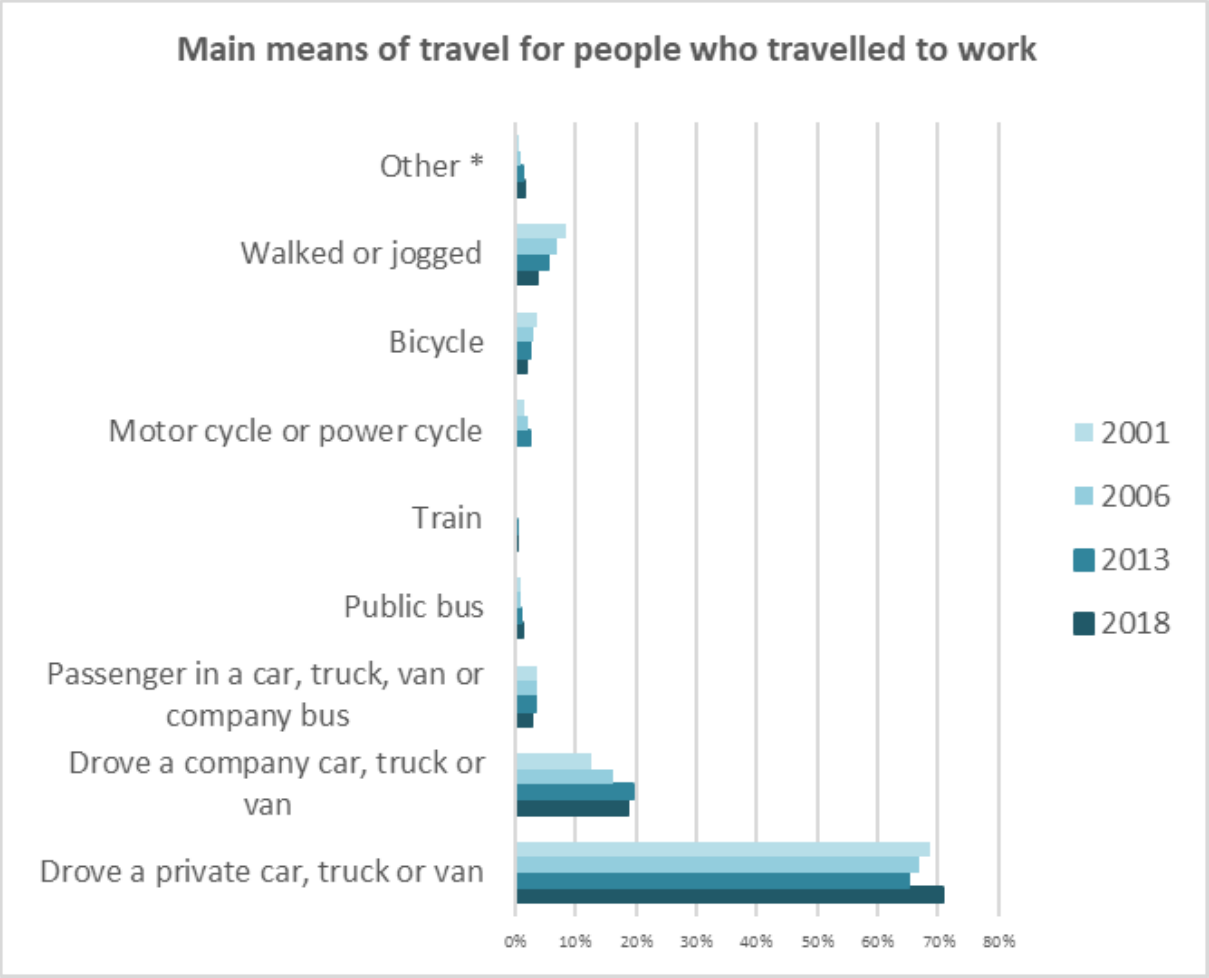
One notable feature affecting the demand for services is the high level of commuting and vehicle ownership. These rates are amongst the highest in NZ, and this has a real effect on the transportation network.

Figure 7-7: Selwyn District Access to Motor Vehicles



Furthermore, the main means of travel to work on Census Day for people in Selwyn District was driving a private car, truck or van followed by driving a company car, truck, or van (19.4 percent). Combined, this means around 90% drove to work.

Figure 7-8a: Main Means of Travel for People Who Travelled to Work



The main Arterial and Collector roads connecting Rolleston, Prebbleton and Lincoln to Christchurch have increasing demands placed on them. This is to cater for those who wish to live outside of Christchurch, but still travel to Christchurch for work and errands.

As CSM2 travel patterns become established this will show up in traffic counts and VKT numbers. Ongoing data collection and analysis is needed to be understand the effects of this.

As the Rolleston CBD grows there is a greater range of services available, again affecting travel patterns.

7.10 Development Contributions

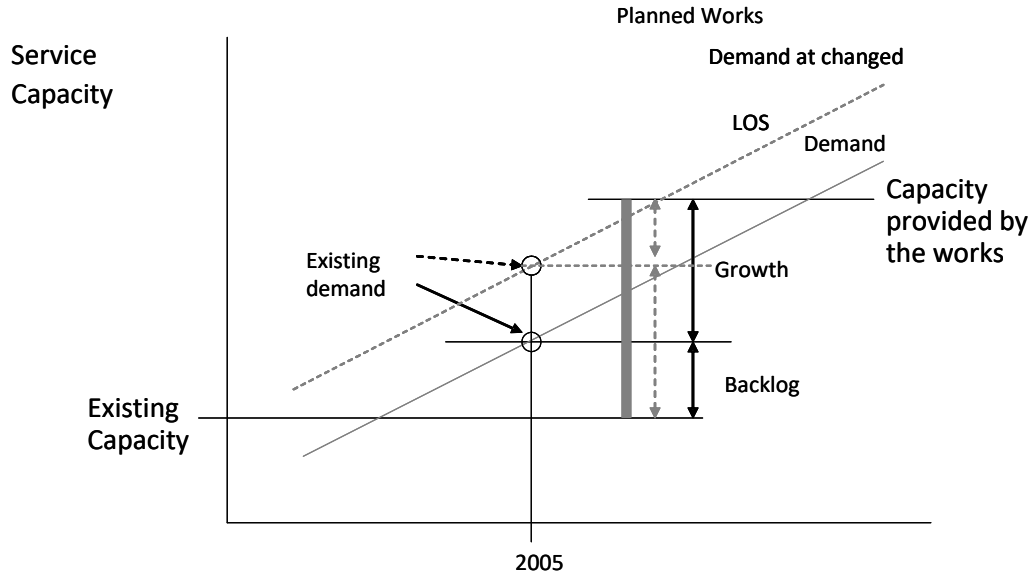
7.10.1 Introduction

Development contributions are contributions required from developers to help offset the effects of growth they have induced on the network. They are levied under the Local Government Act 2002.

Financial contributions are amounts or works required of developers to avoid, remedy or mitigate the adverse effects of their developments on the environment, built or natural. They are levied under the Resource Management Act 1991

The relationship between capacity, growth, LoS and the delivered-capacity of new works is shown diagrammatically below.

Figure 7-9: Service Delivery Shares



Works that include a growth component can be considered for a development contribution – based on the cost of providing additional capacity for growth. Providing additional capacity for an enhanced LoS as well, shown here as the higher of the two sloping lines, may still attract a growth component but it will be of a lesser proportion.

Council's updated Development Contributions Policy was adopted 23 June 2021 and amended 22 June 2022.

The Policy details the Purpose of Development Contributions as follows:

The Selwyn District (the District) has experienced strong population growth since the early 1990s. -.
In order to ensure that the projected population growth does not adversely affect existing and new residents of the District, the Council will need to undertake a number of infrastructural developments.
Territorial authorities may require contributions to the cost of new or additional assets or assets of increased capacity required as a consequence of developments in the District under the Local Government Act 2002 (the Act) in the form of development contributions and the Resource Management Act 1991 in the form of financial

contributions. A territorial authority cannot require development contributions under the Act for the same purpose for which it has required financial contributions under the Resource Management Act.
The Council has decided that development contributions are an appropriate tool to fund some of the capital expenditure incurred in providing new or additional assets or assets of increased capacity required to provide appropriately for reserves and network infrastructure in the District.

Schedule of Roading Development Contributions from 1 July 2023.

Roading	
Eastern Selwyn Development Area	$1,472
Rest of District	$695
Lincoln ODP4	$12,311
Lowes Road ODP Area: North High	$27,542
Lowes Road ODP Area: North Medium	$19,326
Lowes Road ODP Area: North Low	$6,260
Lowes Road ODP Area: Fairhurst High	$26,667
Lowes Road ODP Area: Fairhurst Low	$10,101
Lowes Road ODP Area: Jozecom High	$24,781
Lowes Road ODP Area: Jozecom Low	$12,256

7.10.2 Rolleston Town Centre and Master Plan

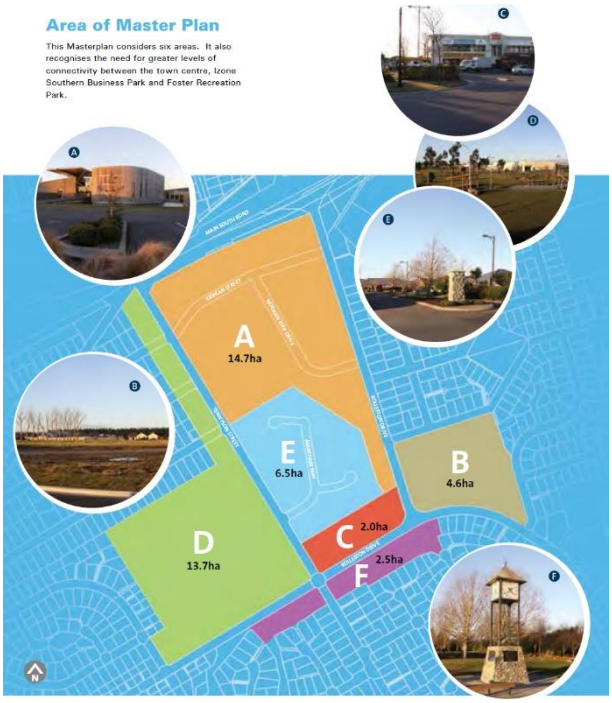
It is important that Rolleston continues to be seen as a desirable place to live, work and play. To date Rolleston has been able to exist reasonably well with the separation of the residential and industrial areas by State Highway 1. However as both these areas grow and develop, the pressure to connect these two areas together to accommodate the increasing number of people needing to move between them will increase.

The rationale for a link between the Industrial North and Residential South is detailed in the Rolleston Industrial Zone Business Case. This is now part of the NZUP programme.

Flyover map

Further investment in improvements to local roads, community facilities and parks are occurring as Rolleston's population grows. These improvements are also important to ensure that Rolleston continues to be an employment and business hub for Selwyn and that people want to continue to live in Rolleston and can enjoy a high quality of life in the town.

The Rolleston Town Centre Masterplan was adopted on 23 April 2014.



It is in recognition that the evolution of the town centre is essential to provide a social and economic heart for the town and the District.

The community requested that the Masterplan include:

- *Entertainment, cultural and community activities and facilities.*
- *Town square and indoor/outdoor dining and opportunities for a market.*
- *Quality and range of shops.*
- *Pedestrian-friendly streets which are well connected.*
- *A distinctive town centre which is compact, modern and green.*
- *Green space with opportunities for play facilities, water features and high quality amenity space.*

Based on this vision the Masterplan introduces key 'projects' as follows:

- *Development of a two-sided retail 'high street' along Tennyson Street.*

- *Reinforcing Tennyson Street as the key 'spine' route through the town centre from SH1 to the Foster Recreation Park.*
- *Introducing a 'fine grain' built form by creating new streets to improve legibility and connectivity and a range of building sizes and forms.*
- *Introducing a new multi-purpose library/ community/ technology centre and town square at the heart of the centre as a key attraction and landmark development.*
- *Integration of the Reserve into the town centre as a high amenity park adjacent to the 'high street' and town square.*

Figure 7-10: Rolleston Masterplan Key Projects

Traffic volumes in Rolleston are increasing as the town's population grows and more shops and services locate in the area to service the new population. Investment in roading improvements are required to ease congestion in and around the Town Centre area. This will also make a more liveable town centre that supports movement by active modes like walking and cycling.

Proposed changes include consolidating Tennyson Street as a "main street" for the town centre area when retail shops begin to move to this area. Upgrades to Tennyson Street are needed to both provide for the extra traffic expected and to create areas with attractive paving, street trees and furniture and parking in conjunction with the proposed new library building and retail areas.

One of the key parts of the upgrade will be piping the existing water race south from the Primary School to Lowes Road so a footpath can be installed to improve pedestrian safety.

New sections of road are also needed to provide key connections for vehicles, pedestrians and cyclists to the town centre.

Future public car parks are identified off Tennyson St to the north of the reserve and off the proposed Wordsworth Extension near Rolleston Drive. A "Park and Ride" facility is planned next to the Council Headquarters. This is being worked through with ECAN

7.10.3 Planning for Lincoln's Growth

Lincoln will be experiencing increased traffic demands from population growth. There are intentions to redevelop the existing town centre to create a more pedestrian friendly area. In addition the Lincoln University and Crown Research Institutes are planning to create an "Innovation Hub" that will combine and expand existing teaching and research facilities that will have a significant impact on the western end of the township and place further demands on the key Arterial roads and intersections such as on Springs Road and Gerald Street.

Gerald Street will need to cater for a number of different functions such as catering for cyclists, more retail activates, and through traffic as part of its role in the wider route that connects SH1 at Burnham and SH75 at Tai Tapu together.

On 5 May 2016, Council acknowledged the receipt of the submissions made on the draft Lincoln Town Centre Plan and adopted the Lincoln Town Centre Plan, including a cost estimate and implementation plan.

The Plan has been designed around five key elements, which together create the built environment. They affect the way that the public uses a site or the surrounding area and can be thought of as the components of development. The five elements are:

1. Buildings Lines and Active Frontages
2. Public Space
3. Moving (Walking, Cycling and Driving)
4. Car Parking
5. Use of Streets

The document developed projects within each of the identified three precincts, and subsequent actions for Council to undertake to support the traditional village character of the town centre as it grows. A comprehensive consultation process was undertaken. The purpose of consultation was to determine the level of public support for the various measures and projects proposed and to give people an opportunity to state their preferences, as to which project should be implemented first.

Traffic volumes along Gerald St are expected to double over the next 20 years, which puts more pressure on existing intersections and how the town centre can both accommodate this and other outcomes like improving walking and cycling.

Implementation of the Town Centre upgrade has been boosted with funding from the DIA "Better Off Funding" with design work underway in 2023-25 and construction to follow pending adequate funding.

7.11 Other Demand Drivers

7.11.1 Climate Change

The Resource Management Act 2004 Amendment Act defined climate change as "a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to the natural climate variability."

It is necessary to consider climate change issues in relation to the Transportation Activity to ensure the sustainability of this activity and the agreed LoS are maintained.

The main threats to infrastructure from climate change come from extreme weather events: heat, cold, rain and wind. Flooding and storm damage threatens bridges and culverts, some of which also carry water assets.

Climate modelling, including assessment of high-level impacts to key infrastructure activities (Five Waters, Transportation and Community Facilities) was undertaken by Aqualinc in 2023 (*Impact of Climate Cycles and Trends on Council Assets - 2023 Update*), updating an earlier report focused on Five Waters.

The risk assessment of climate change impacts is summarised below.

Table ZZ1: Summary risk assessment of climate change impacts on SDC assets projecting to 2050. Aqualinc. 2023.

	All zones					Alpine hills and high-country				Plains			Coastal and lower plains		
	Temperature (excl. ET impacts)	Annual rainfall	Drought	Evapotranspiration (ET)	Wind (excluding ET impacts)	Alpine rivers flows	Extreme rainfall events (foothills and alpine)	Foothills-sourced river flows	Snow levels and ice	Extreme rainfall events (Plains)	Snow levels and ice	Ground water levels (upper/mid/plains)	Sea level rise	Extreme rainfall events (Coastal)	Groundwater levels (Lower Plains)
Transportation	H	L	L	L	L	M	H	H	L	H	L	L	M	H	L

Climate change impacts on infrastructure include:

- Under all emissions scenarios, the incidence of extreme events is expected to increase resulting in more frequent road closures and repairs.
- Flood events previously categorised as 1 in 100 year events may become 1 in 10 year events

7.11.2 Legislative Change

Changes to legislation may introduce changes to the demand for transport services, typically such changes will affect the characteristics of the traffic (e.g. truck weight limits) or the management of the transportation activity (e.g. Government Policy Statement). The change in government suggest the GPS will be amended to match the new government priorities.

The current suite of legislation that impacts on the transportation activity is described in Section 3 of this AMP.

Headline 7.4:
Excavations within the road corridor for utility projects are expected.
Roading programmes will be revised to match wherever possible.

At the time this AMP was prepared there is no future legislation pending that is expected to have a significant impact on the transportation activity.

It is accepted that legislative change can occur at any time and that the impacts of such changes can be either broad or quite specific. Council's assumptions for strategic planning accepts the legislative framework that is in place at the time of planning.

7.11.3 Utilities Access to the Transport Corridor

The transport corridor provides an essential conduit for a range of utilities including Council's 5 Waters, Telecommunications, Electricity and Stock Water/Irrigation.

The design and timing of capital projects and renewal works are to be integrated with extensive excavations.

The population increase expected in Darfield is linked with the development of a sewerage scheme. The establishment of a scheme will have similar impacts on management of the transportation activity.

7.11.4 Traffic Growth/Heavy Vehicles

Based on population growth and traffic counts to date, indications reinforce the traffic growth patterns in the Greater Christchurch area will continue to change.

The main impacts of known future growth and demand trends on Council's roading assets are:

- Increased trip making for work, social and recreation purposes – resulting in demand for better pavements, signage, delineation and footpaths.
- Changing needs and expectations as the population ages – demand for "easier to read" roads, better footpaths, better lighting.
- Increasing customer expectations and levels of service – resulting in a demand for better surfaces (especially unsealed – e.g., grading frequency of unsealed roads to reduce dust.
- Significant heavy traffic associated with the development of the two inland ports in the Rolleston Industrial Zone.

- Growth in tourism is creating pressure for the sealing of more unsealed roads, enhancement of signage for navigation purposes (e.g., information signs), a “no surprises” driver environment, and increased safety.
- On-going need to subsidise the construction of new assets associated with residential subdivision and land development adjacent to existing roads.
- Maintenance costs increasing due to the assets acquired by Council from subdivisions.

The effects of growth in Lincoln, Prebbleton, Rolleston are considerable and traffic modelling is used to predict capacity issues.

Rural part of the district and where growth is gradual do not have capacity issues and improvements tend to be more safety focussed.

Given the strong agricultural base of the district and its proximity to Christchurch there are a significant proportion of heavy vehicles using the network. While the State Highways carry the highest numbers of heavy vehicles, there are roads managed by SDC that also carry large numbers of heavy vehicles. These routes include:

- Arterial routes.
- Izone feeder routes.
- HPMV approved routes.

Classified traffic counts are used to identify parts of the network carrying proportions of heavy vehicles that are higher than average. This may occur on local and low volume routes where a disproportionate impact on the asset condition may occur. Those most notable are listed below.
N.B. In a situation where there are two ONRC hierarchies that make up the length of the road, the hierarchy that appears most frequently is noted down. Both hierarchies are noted if there is an approximate 50-50 split.

HPMV Routes
The 2010 amendments to the VDM rule include:

- Road controlling authorities would be able to issue overweight permits to cover the transport of divisible loads such as general freight and cargo. Currently, overweight permits are only issued to indivisible specialist loads generally limited to 44 tonnes.
- High-productivity vehicles would be allowed long-term permits to operate on approved routes at weights up to 53 tonnes and lengths up to 22 metres.
- Vehicles below 44 tonnes would be able to operate at higher axle limits without permits.
- Operation over 53 tonnes and 22 metres would require overweight and over dimension permits.
- Overweight permits.

The high productivity freight routes identified within Selwyn District are listed in **Table 7-3** below.

Table 7-2: Heavy Traffic Routes

Road Name	From	To	Hierarchy	ONRC Hierarchy	Reason
ARDLUI RD	RAKAIA TERRACE RD	END OF SEAL	LOCAL	Access	HPMV ROUTE
AYLESBURY RD	SH 1 (MAIN SOUTH RD)	BEALEY RD	ARTERIAL	Primary Collector	HPMV ROUTE
BEALEY RD (PLAINS REGION)	SH 73 (WEST COAST RD)	PLANTATION RD (RHS)	ARTERIAL	Primary Collector	HPMV ROUTE
BOUNDARY CREEK RD	RAKAIA SELWYN RD	SH 1 (MAIN SOUTH RD)	LOCAL	Access	HPMV ROUTE
BREADINGS RD	START OF SEAL	SH 1 (MAIN SOUTH RD)	LOCAL	Secondary Collector	HPMV ROUTE
BURDONS RD	AYLESBURY RD	THOMSON RD (PP LHS)	LOCAL	Secondary Collector	HPMV ROUTE
BURNHAM RD	BROOKSIDE RD	SH 1 (MAIN SOUTH RD)	ARTERIAL	Primary Collector	HPMV ROUTE
BURNHAM SCHOOL RD	DUNNS CROSSING RD	NORWOOD RD	LOCAL	Secondary Collector	REFUSE TRANSFER
CLINTONS RD	TELEGRAPH RD	BEALEY RD (START OF SEAL)	LOCAL	Secondary/Access	HPMV ROUTE
COALTRACK RD	TELEGRAPH RD	BEALEY RD	LOCAL	Secondary/Access	MEADOW MUSHROOMS
DAWSONS RD	SH 1 (MAIN SOUTH RD RHS)	JONES RD	ARTERIAL	Secondary Collector	HPMV ROUTE
DERRETTS RD	END OF SEAL	ARDLUI RD	LOCAL	Secondary Collector	HPMV ROUTE
DETROIT DR	LINK DR	ILLINOIS DR	LOCAL	Secondary Collector	HPMV ROUTE
DUNNS CROSSING RD	BROOKSIDE RD	NEWMAN RD	ARTERIAL	Secondary Collector	HPMV ROUTE
DUNSANDEL RD	MITCHELLS RD (POLE RHS)	DERRETTS RD	ARTERIAL	Secondary Collector	HPMV ROUTE
ELLESMERE JUNCTION RD	ROUNDABOUT (START ISLAND)	BROOKSIDE RD	ARTERIAL	Arterial	HPMV ROUTE
HAMPTONS RD	SPRINGS RD	WATERHOLES RD	ARTERIAL	Primary/Secondary Collector	HPMV ROUTE
HESLERTON RD	IRVINES RD	START OF SEAL	LOCAL	Secondary Collector	HPMV ROUTE
HOSKYNS RD	JONES RD	WEST MELTON RD	ARTERIAL	Primary Collector	HPMV ROUTE
IRVINES RD	WAIKIMIHIA RD	HESLERTON RD	LOCAL	Access	HPMV ROUTE
IZONE DR	JONES RD	ILLINOIS DR	COLLECTOR	Secondary Collector	HPMV ROUTE
JONES RD	SPEED RESTRICTION (60/100)	RAILWAY RD	ARTERIAL	Primary Collector	HPMV ROUTE
KNYVETTS RD	MAIN RAKAIA RD	END OF SEAL	LOCAL	Secondary Collector	HPMV ROUTE

Road Name	From	To	Hierarchy	ONRC Hierarchy	Reason
LEACHES RD	ROCKWOOD RD (RHS)	STEELES RD	ARTERIAL	Primary Collector	HPMV ROUTE
LINK DR	IZONE DR	END OF CONSTRUCTION	LOCAL	Low Volume	HPMV ROUTE
MADDISONS RD	WEEDONS ROSS RD	SH 1 (MAIN SOUTH RD)	LOCAL	Primary Collector	HPMV ROUTE
MAIN RAKAIA RD	KINGS RD	NORTHBANK RD	ARTERIAL	Primary Collector	HPMV ROUTE
MARSHS RD	SH 1 (MAIN SOUTH RD)	SPRINGS RD	LOCAL	Primary Collector	HPMV ROUTE
MITCHELLS RD	TERRACE RD (POLE LHS)	HORORATA RD	LOCAL	Access/Low Volume	HPMV ROUTE
NORTH RAKAIA RD	SH 1 (MAIN SOUTH RD)	TERRACE RD	LOCAL	Secondary Collector	HPMV ROUTE
NORWOOD RD	START OF SEAL	SH 1 (MAIN SOUTH RD)	LOCAL	Access	HPMV ROUTE
NORWOOD RD	BURNHAM SCHOOL RD	SH 1 (MAIN SOUTH RD)	LOCAL	Access	HPMV ROUTE
OLD WEST COAST RD	CHATTERTONS RD	RUPERT ST	ARTERIAL	Primary Collector	HPMV ROUTE
PLANTATION RD	SCOTTS RD	SUBSTATION RD	LOCAL	Low Volume	HPMV ROUTE
RAILWAY RD (PLAINS REGION)	TWO CHAIN RD	SPEED RESTRICTION (100/60)	LOCAL	Secondary Collector	HPMV ROUTE
RAKAIA TERRACE RD	TERRACE RD	STEELES RD	LOCAL	Secondary Collector	HPMV ROUTE
RIVERSLEIGH RD	END OF SEAL	WHITECLIFFS RD	LOCAL	Access/Low Volume	HPMV ROUTE
SELWYN RD	SHANDS RD	WEEDONS RD	ARTERIAL	Arterial	SYNLAIT FACTORY
SHANDS RD	MARSHS RD (RHS)	SELWYN RD	ARTERIAL	Arterial	QUARRY ROUTE
SHARLANDS RD	SH 1 (MAIN SOUTH RD)	TE PIRITA RD (START OF SEAL)	LOCAL	Secondary Collector	HPMV ROUTE
SPRINGS RD	BLAKES RD	ROUNDABOUT (END ISLAND)	ARTERIAL	Arterial	HPMV ROUTE
STEELES RD	LEACHES RD	RAKAIA TERRACE RD	LOCAL	Access/Low Volume	HPMV ROUTE
TE PIRITA RD	RAKAIA TERRACE RD (START OF SEAL)	ROCKWOOD RD	LOCAL	Secondary Collector	HPMV ROUTE
TELEGRAPH RD	SH 1 (MAIN SOUTH RD)	SPEED RESTRICTION (50/100)	ARTERIAL	Arterial	HPMV ROUTE
TERRACE RD	BREADINGS RD	MITCHELLS RD (POLE RHS)	LOCAL	Secondary Collector	HPMV ROUTE
THOMSONS RD	BURNHAM SCHOOL RD (START SEAL)	TWO CHAIN RD (END K&C LHS)	LOCAL	Secondary Collector	HPMV ROUTE

Road Name	From	To	Hierarchy	ONRC Hierarchy	Reason
TWO CHAIN RD	RAILWAY RD	TELEGRAPH RD	ARTERIAL	Secondary Collector	HPMV ROUTE
WAIKIMIHIA RD	TRAMWAY RD	IRVINES RD	LOCAL	Low Volume	HPMV ROUTE
WAIMAKARIRI GORGE RD	SH 73 (WEST COAST RD)	CENTRE OF BRIDGE	ARTERIAL	Secondary/Primary Collector	HPMV ROUTE
WARDS RD	TWO CHAIN RD	AYLESBURY RD	LOCAL	Secondary Collector	HPMV ROUTE
WATERHOLES RD	LARCOMBS RD	HAMPTONS RD	ARTERIAL	Secondary Collector	HPMV ROUTE
WESTLAND PL	IZONE DR	LOOP END	LOCAL	Access	HPMV ROUTE
WHITECLIFFS RD	END OF SEAL	BRIDGE #139-580 2ND ABUT	LOCAL	Access/Low Volume	HPMV ROUTE
WILLOW RD	SOUTH TWO CHAIN RD	START OF SEAL	LOCAL	Low Volume	HPMV ROUTE

Table 7-3: High Productivity Freight Routes

Road	From	To	Hierarchy Level	ONRC Hierarchy	Reason
Bealey Rd	Coaltrack Rd	West Coast Rd (SH73)	Arterial	Primary Collector	
Burnham School Rd	Transfer Station	Dunns Crossing Rd	Local	Secondary Collector	Refuse transfer
Coaltrack Rd	572 Coaltrack Rd	Bealey Rd	Local	Secondary Collector	
Dunns Crossing Rd	Burnham School Rd	SH1	Arterial	Secondary Collector	
Heslerton Rd	SH1	1028 Heslerton Road	Local	Primary Collector	Synlait factory
Selwyn Rd	423 Selwyn Rd	Shands Rd	Arterial	Arterial	Quarry
Shands Rd	Selwyn Rd	Marshs Rd	Arterial	Arterial	
Telegraph Rd	Two Chain Rd	SH1	Arterial	Arterial	
Two Chain Rd	1004 Two Chain Rd	Telegraph Rd	Local	Secondary Collector	
Weedons Ross Rd	Main West Coast Rd (SH73)	Main South Rd (SH1)	Arterial	Primary Collector	

The updated list for the HPMV routes is in the **Appendix**

N.B. In a situation where there are two ONRC hierarchies that make up the length of the road, the hierarchy that appears most frequently is noted down. Both hierarchies are noted if there is an approximate 50-50 split.

In October 2011 the Minister of Transport official lifted the 44 tonne weight limit of laden milk trucks by one tonne to 45 tonnes until the end of the year throughout New Zealand.

7.11.5 Traffic Counts

Traffic counts provide the basic information to support capacity planning. Council has been implementing a traffic count program since 1998 which provides a rich base of historical information that has been used to understand trends in the District.

The traffic count program was rationalised in 2016 to enable the quantum of new growth on the District to be captured. The count program is managed through the Transport Asset Information Services Contract Council has with BECA. Having a good traffic count program is essential for a good understanding of the transport network and informs robust decision making around land use.

From 2024 a local provider is collecting the count data and supplying it directly to Council for collation and analysis.

7.12 Planning for Growth and Demand

Headline 7.7:
Traffic models assist Council translate growth projections into traffic patterns.

The introduction of the One Network Road Classification (ONRC) provided a national approach to road categories by traffic use. The One Network Framework (ONF) includes the 'place; function, recognising the land use surrounding the road and non-traffic activities within the road corridor.

Road use is also categorised for all modes making it a much more use planning tool.

7.12.1 Transportation Models

In order to understand the impacts of growth on the transportation network and when Council should respond with road improvements, Abley Transportation Consultants have been engaged to develop transportation models for rapidly growing Eastern Selwyn townships.

The information sheets below provide an overview of how the Prebbleton, Lincoln and Rolleston models work. Note that these models have been updated again with the latest land use and traffic count information in preparation for the LTP.

7.12.2 Asset Context and Achievements to date

The land transport network is required to provide for the safe and efficient movement of people and goods throughout the district and to neighbouring districts. Its performance directly influences the economic viability and sustainability of the district, the wider Canterbury region, and the Country. The district's land transport network is a core strategic facility and is maintained (excluding state highways) by the Council to assist it in meeting its Community Outcomes. It provides particularly strong inputs into the achievement of Community Outcomes.

Generally, the network has been coping with the demands on it, but this is expected to change.
New infrastructure has been continually added to the network from new urban subdivisions since the District was established in 1989, reflecting the high population growth rates over that period. Most of the new urban infrastructure is vested at no initial cost to the Council by private developers.

Parts of the present network will need considerable redevelopment over the next decade, and beyond, to meet community and growth expectations. The factors that will force the need for change on the assets or the management of the asset are discussed in the following paragraphs:

- Increasing population: This will result in an increase in traffic on the roads, which will increase congestion and reduce the level of service provided by the road. The additional traffic generated will increase wear on the roads, which will increase maintenance costs and reduce renewal frequencies.
- Changes in the way roads are used: The creation of new urban subdivisions, or the development of new industry in one part of the district, may change how an individual road or roads, or even a sub-network will be used. This may mean roads will need to be upgraded to accommodate the changing use.
- Changes in the level of service demanded by the road users: Over time, communities tend to expect improving service from their assets. Agreed levels of service for roads, and the activities involved in managing the roads, will help to control this tendency but level of service may nevertheless need to be improved to satisfy these future needs.

Similarly, more people wish to cycle, and to have safe alternatives to cycling, on the District's typically narrow rural roads. These people seek wider carriageways, cycle lanes and off-road pathways to address their needs:

- Increases in fuel costs will put pressure on the Council to provide or facilitate more affordable and sustainable transport solutions for the District's residents. This may require additional public transport services and an investment in walking and cycling infrastructure to cater for short trips — and even longer commuter trips to Christchurch. However, there are disconnections between what can be realistically provided in the District's urban and rural areas and in the nearby areas of Christchurch City.
- Changes in the strategic management of the assets: The Council's policies and management strategies are continually evolving to keep pace with the changing needs of the community, statutory requirements, funding organisations and central government's requirements. Changes to policies and management strategies can also have a significant effect on how assets are managed.

The directions of future land use changes and their effects on the roading network are always difficult to determine with accuracy but it is important that the roads likely to be affected are identified and prepared for these changes at the appropriate times, before levels of service degrade too far. More importance is being placed on the integration of land use and transportation systems to provide long-term sustainable solutions. The Council is actively involved in regional strategic planning initiatives, such as the Urban Design Strategy (UDS), to help it assess and plan for the demands of further growth in a sustainable way, across all its assets and responsibilities, including the transportation network.

Demand for new or upgraded assets arises from the needs of the existing population i.e. meeting the level of service standards, changing habits, and population growth. This demand manifests itself in the need for:

- New roads.
- Sealing of unsealed roads.
- Widening and alignment improvements.
- Upgraded intersections.
- New and upgraded bridges.

- Appropriate urban facilities in closely settled areas, e.g. street lights, kerb and channel, footpaths.
- New cycleways and walkways.
- Improved public transport services and infrastructure.

Council intends to maintain its awareness of these issues and plans to provide a transportation network that meets the communities' expectations. This will involve implementing improvement projects associated with CRETS, walking and cycling, seal widening and selected public transport infrastructure facilities in conjunction with routine maintenance and renewal of its roading network.

The funding of all these works has been recognised in the financial forecasts in this Plan and will be utilised in the formulation of Council's LTP.

7.12.2.1 *Minor Improvements (Low Cost/Low Risk)*

The funding of improvements is catered for in the subsidised Land Transport Programme as Activity Class 5 – Improvement of Local Roads. Activity Class 5 includes NZTA Work Categories 322 to 325 and 341 and can include substantial projects such as new bridges, and new roads, in addition to road reconstruction and minor improvements. Individual projects generally have to meet assessment criteria under NZTA's Project Evaluation Manual to be eligible for funding.

The exceptions are those in Work Category 341 – Minor Improvements, Safety and other related roading improvement projects up to a value of $250,000 per project can be funded from this category, from a bulk allocation that was equivalent to 8% of the value of the Council's Land Transport Maintenance and Renewal Programmes. This equated to approximately $640,000 per annum. Previously this work was referred to as "minor safety improvements" and was limited to a cost of up to $150,000 per project.

The Council operates a Hazards and Deficiency Database that lists and prioritises these projects for funding from this allocation.

Wherever possible the Council utilises subsidised funding sources to carry out major works. If major transportation projects are not eligible for subsidised funding, the Council then considers fully funding these as projects to achieve them.

West Melton school students Sophie Neville, Clark Emmanuel and Finn Sorenson, all aged 12, (left to right above) together with Mayor Sam Broughton and James Caygill, of Waka Kotahi, checked out the pedestrian crossing phases of the new signals which make it safer to get across SH73 on foot or by bike, scooter or walker. (Stuff.co.nz 4 April 2023)

Figure 7-11: Traffic Lights and Pedestrian Crossin SH73, West Melton

Since 2000, spending has increased considerably reflecting the Council's desire make full use of these bulk funds to undertake subsidised improvements to the roading network wherever possible.

Prior to 2007 the Council identified Minor Improvement candidates using a spreadsheet listing all identified projects ranked on the basis of crash history and then traffic volume; crash data was derived from the NZTA crash statistics. The list included possible projects identified by staff, ratepayers and councillors over a number of years. Potential project candidates were then ranked and annually reported to the Council for approval within the bulk funding allocation.

In 2007 a Hazard and Deficiency Database replaced the original spreadsheet process. This evaluates and ranks projects more robustly based on a risk reduction, traffic and cost basis.

As part of the development of this database, consideration was extended to intersection lighting, intersection seal-backs and other safety-related projects that were not previously considered for funding in this manner. Other projects are regularly put forward for inclusion following identification through the work of the Council's Transport and Road Safety Coordinator. As a consequence of these changes, a number of similar projects, of a relatively low cost, were ranked at the top of the list of projects. The Council decided to spread the work over a number of work types to achieve some degree of parity both on the type of work and how it is distributed across the network and District in a more equitable manner, this has meant that the priorities determined by the deficiency database process are not rigidly followed.

7.12.3 New Improvements Planning

The LTP process stipulated by the Local Government Act 2002 requires the Council to plan and forecast its activities for long periods into the future, and to publish and consult on its intentions at three-yearly intervals. In the periods between LTP's it is required to follow a simpler Annual Plan procedure. There is no real scope under this system for making significant changes to major LTP programmes at Annual Plan time unless there are exceptional circumstances.

The Land Transport Management Amendment Act 2008 introduced a requirement for road controlling authorities to prepare three-yearly Land Transport Programmes. However, the requirement for territorial local authorities to do so is only an indirect one in that major projects need to be prioritised and co-ordinated on regional basis in order to obtain funding from the National Land Transport Programme. The Regional Transport Committee performs this prioritisation task and achieves the regional consensus necessary to develop and confirm the Regional Land Transport Programme. The co-operative effort of the Canterbury Regional Transport Committee has been demonstrated by the formation of the Canterbury Transportation Regional Implementation Plan (CTRIP), which in 2008 sought additional Crown funding for transportation initiatives throughout the Canterbury Region.

Many smaller potential projects come before Council throughout any year, and during the formulation of Annual Plans and LTPs. Most of these projects are usually difficult or impossible to fund within acceptable fiscal constraints regardless of their relative 'worthiness'.

Council operates a Projects Database that lists potential individual improvement projects from sources such as township committees or community boards, staff and councillors. These requests may also arise from public enquires and projects not usually expected to be contained in other forward more formal programmes, e.g. seal extensions and seal widening programmes etc. Typically, these requests are associated with township renewal and improvement works such as footpath extensions, new kerb and channel, individual street lights and street upgrades. Renewal recommendations are not part of this process, other than their interaction with street upgrading in some instances.

As part of each LTP process, Council consults the respective township committees to ascertain the desire for any works to be carried out over the next three to ten year period. Even in 'LTP years' the Council is unlikely to be able to fund all these improvements for budgetary reasons, so the most worthy projects are identified for consideration.

In the past, the Council has sometimes seen fit to adjust its priorities to allow a newly proposed work to proceed ahead of a planned one while remaining within the overall financial constraints. There is less flexibility now to do this under LTP processes.

The effects of these circumstances are that:

- The programmes developed in the Activity Management Plans and incorporated in LTPs, commit the Council a lot more firmly to carrying out the works detailed than previous annual plans and programmes did.
- More work is required at plan preparation stage to ensure that programmes are likely to meet the needs of the District and its people over the next three year LTP cycle, and that relative priorities and funding estimates are as robust as possible.
- It is likely that the Council will only alter the programmes it has agreed to, and published in its LTP, in exceptional and justifiable circumstances.

7.12.3.1 *Identification of Options*

The Local Government Act 2002 requires that:

77. (1) *A local authority must, in the course of the decision making process, —*

(a) seek to identify all reasonably practicable options for the achievement of the objective of a decision; and

(b) assess those options by considering—

(i) the benefits and costs of each option in terms of the present and future social, economic, environmental, and cultural well-being of the district or region; and

(ii) the extent to which community outcomes would be promoted or achieved in an integrated and efficient manner by each option; and

(iii) the impact of each option on the local authority's capacity to meet present and future needs in relation to any statutory responsibility of the local authority; and

(iv) any other matters that, in the opinion of the local authority, are relevant; and

(c) if any of the options identified under paragraph (a) involves a significant decision in relation to land or a body of water, take into account the relationship of Maori and their culture and traditions with their ancestral land, water, sites, waahi tapu, valued flora and fauna, and other taonga.

The Council does however have discretion as to

(i) the extent to which different options are to be identified and assessed; and

(ii) the degree to which benefits and costs are to be quantified; and

(iii) the extent and detail of the information to be considered; and

(iv) the extent and nature of any written record to be kept of the manner in which it has complied with those sections.

(a) the principles set out in section 14; and

(b) the extent of the local authority's resources; and

*(c) the extent to which the nature of a decision, or the circumstances in which a decision is taken, allow the local authority scope and opportunity to consider a range of options or the views and prefer*ences of other persons.

This Plan considers available options against:

- The social, economic, environmental, and cultural wellbeing of the District, by taking appropriate cognisance of Council's Goals and objectives.
- The extent to which community outcomes would be promoted or achieved by having regard to Council's published Community Outcomes.

In considering these matters there is a need to co-ordinate projects within the Transportation activity, and between this and other activities of the Council. This integration has occurred where possible with the continual development of the Council's systems and activity management plans. The Improvement Plan includes actions to improve this integration.

Analysis of the benefits and costs of options is not appropriate at these early stages of project and plan development covered by this Plan. Rather, these factors should be considered in the decision-making process that is followed before any specific project is built.

Most improvement projects listed in this plan should therefore generally be regarded as '*likely solutions to the problem*' rather than firm indications as to the exact option that will be built. However, some projects only explore options, and consider benefits and costs and wider community issues in the process of making more strategic recommendations. The CRETS study is an example where a number of projects have been identified in this manner.

7.12.3.2 *Project Development*

When the desired timing of a project has been determined by a formal study, such as CRETS, this is adopted as the basis for its inclusion in to forward works programmes for consideration by the Council.

Subdivision commitment projects are initially programmed to occur in line with developments. Standalone works are usually budgeted for in the next Annual Budget or LTP cycle.

Sometimes contributions have to be taken over an extended period as they occur due to the varied timing and development initiatives of the adjacent landowners, such as the upgrade of an existing rural road to an urban standard by sporadic subdivision development. It would be impractical and inefficient to design and construct short isolated and disconnected sections of footpath, kerb and channel, and seal widening.

The other option is for the Council to forward fund the works then apply a development contribution when subdivision consent is applied for in the future. However, recognition is given to the legal obligation for such works to be carried out "within a reasonable time", which case law suggests is about five years. The reasonable time applies to financial contributions under the RMA. Works supported by Development Contributions (under LGA 2002) must be in a forecast works programme (usually a 10-year forecast).

With the passing of the Local Government Act 2002 Amendment Act 2014, has ceased this practice.

Other roading projects are initially prioritised based on a benefit cost analysis, carried out in accordance with the NZTA project evaluation procedures, with funding likely to be available within the appropriate subsidised works category if eligible.

If an appropriate BCR and other criteria enabling the project to be subsidised are not achieved, then the project either is dropped from the funding programme or is reconsidered as work that the Council might consider funding fully. Projects may also be prioritised on the basis of risk, network need, or community need as appropriate. Projects dropped from the funding programme are recorded for re-evaluation during a later programming cycle.

The NZTA's project evaluation procedures account for:

- The benefit to the road user for reducing delays in the time to travel along a given route.
- Vehicle operating cost savings.
- Reduction in CO2 outputs from the vehicles travelling the specific section of road.
- Safety benefits.
- Intangible benefits including community dislocation, environmental issues (including noise and vibrations) and other possible local, regional and national issues.
- The non-financial matters required to comply with the Land Transport Management Act 2003.

7.12.3.3 *Local Priorities*

Where roading projects are likely to be approved as part of the National Land Transport Programme (NLTP) they are incorporated into the Council's Land Transport Programme. The proposed Land Transport Programme is approved by the Council before submission to the NZTA.

Until 2008 the LTP was submitted annually to the NZTA for funding approval. The Land Transport Management Amendment Act 2008 introduced a three-year National Land Transport Programme to coincide with local authorities' three yearly LTP budgeting processes. The requirement to submit a local LTP for approval is now indirect; a Regional Land Transport Programme has to be compiled and this cannot be done without the relevant information from all the RCA's individual Land Transport Programmes. 2009 marked the start of this new process.

7.13 New Improvements Proposed

7.13.1 Pavements - Seal Extensions

Historically, a benefit cost ratio above 4 was required before a seal extension was programmed as part of Council's Subsidised Land Transport Programme. If a BCR is below 4, the seal extension would be done as a non-subsidised project in accordance with Council's Policy R414.

Urban Seal Extensions
The number of unsealed urban roads is small and reside in small townships like Coalgate, Whitecliffs and the Lake Ellesmere settlements. The previous forward works programme prioritised the sealing of these roads and streets based on the number of dwellings served on each length of road. There are exceptions in those areas deemed to have limited year-round occupancy — where the priority is reduced in favour of properties where there are permanently occupied dwellings. There are no urban seal extensions planned for the 2018 LTP.

Rural Seal Extensions
Discussed in the lifecycle management plan.

7.13.2 Kerb and Channel

The projected useful life of kerb and channel is 80-years. The asset age profile shows much of Council's kerb and channel being young and not due for replacement for the next 30 years at least. Condition rating of kerb and channel is undertaken to optimise the replacement forecast.

Growth related projects are likely to be associated with intersection improvements.

7.13.3 Other Surface Water Channels

There are no specific new improvements proposed in relation to growth and demand; any new projects are expected to be limited in scale and undertaken under the Low Cost/Low Risk category.

7.13.4 Culverts

There are no specific new improvements proposed in relation to growth and demand; any new projects are expected to be limited in scale and undertaken under the Low Cost/Low Risk category. However, upgrades are required as part of resilience initiatives.

7.13.5 Bridges

There are no specific new improvements proposed in relation to growth and demand.

7.13.6 Street Lighting

Many streetlights in the District have been replaced with LED. Some upgrades may occur as part of town centre developments.

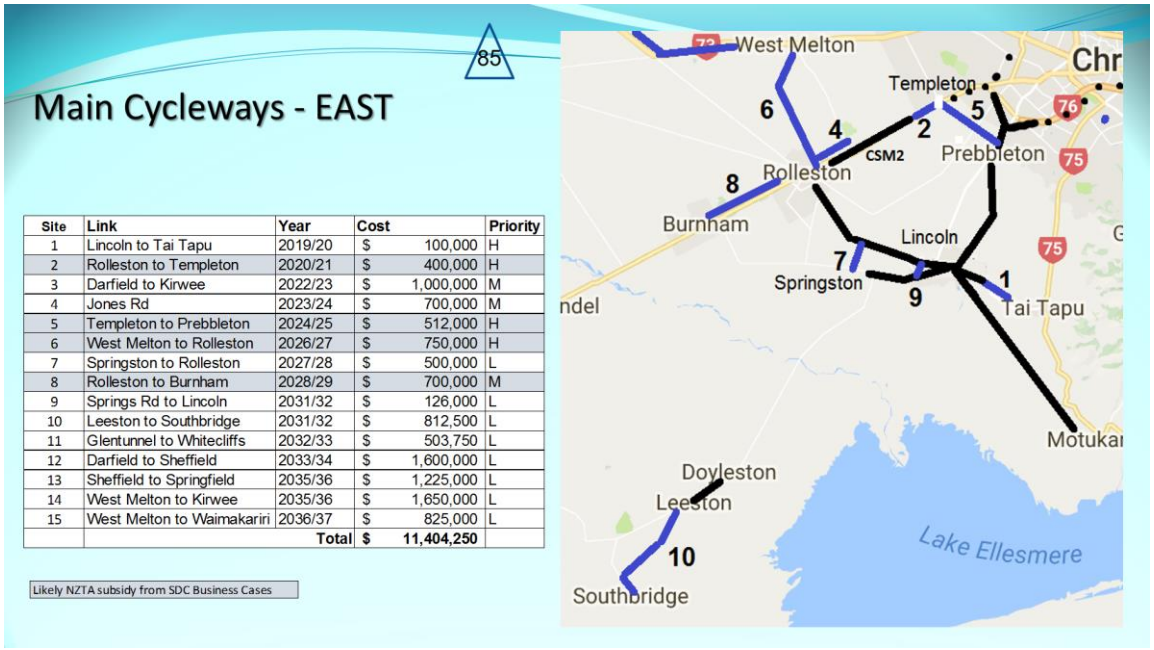
New development lighting is included ion development so beyond streetscape and safety works, new streetlights are not installed by Council.

7.13.7 Footpaths and Cycleways

Council's Walking and Cycling strategy sets the direction for improvements within the district. These align with developments and aim to provide an integrated network.

More details on Council's strategy to provide walking and cycling infrastructure is available in the 2018 Draft Walking and Cycling Strategy. This includes Council's strategy to ensure all "missing" footpath connections are identified and an action plan is prepared to address this deficiency.

The figures below shows the Cycleway project list that is out for Consultation. The greyed out boxes represent projects that may be eligible for NZTA funding.



Site	Link	Year	Cost	Priority
1	Lincoln to Tai Tapu	2019/20	$ 100,000	H
2	Rolleston to Templeton	2020/21	$ 400,000	H
3	Darfield to Kirwee	2022/23	$ 1,000,000	M
4	Jones Rd	2023/24	$ 700,000	M
5	Templeton to Prebbleton	2024/25	$ 512,000	H
6	West Melton to Rolleston	2026/27	$ 750,000	H
7	Springston to Rolleston	2027/28	$ 500,000	L
8	Rolleston to Burnham	2028/29	$ 700,000	M
9	Springs Rd to Lincoln	2031/32	$ 126,000	L
10	Leeston to Southbridge	2031/32	$ 812,500	L
11	Glentunnel to Whitecliffs	2032/33	$ 503,750	L
12	Darfield to Sheffield	2033/34	$ 1,600,000	L
13	Sheffield to Springfield	2035/36	$ 1,225,000	L
14	West Melton to Kirwee	2035/36	$ 1,650,000	L
15	West Melton to Waimakariri	2036/37	$ 825,000	L
		Total	$ 11,404,250	

Likely NZTA subsidy from SDC Business Cases


Main Cycleways - WEST
Springfield
13
Sheffield
12
Burnt Hill
Cust
West Eyretor
Eyrewell Forest
Waimakariri River
Whitecliffs
Coalgate
11
Glentunnel
Darfield
3
Kirwee
15
14
West Melton
72
73
77

7.13.8 Other Improvements

Overview

Street upgrades are renewal of old footpaths, kerb and channel, street lights and pavements. However, they also can incorporate new improvements that relate more to the aesthetics of the street e.g. the use of aesthetically pleasing surfacing such as cobblestones, decorative light poles, traffic calming devices, landscaping and the undergrounding of existing overhead services.

The common view is that street upgrade projects are treated more as an overall improvement project than a number of separate renewal projects.

In September 2011, Council confirmed its focus on maintenance and renewals proposing no discretionary funding for township projects would be included in the 2012 LTP. This decision has not changed for the 2018 LTP. N.B. The street upgrades as part of the Waikiriri (Rolleston) Town Centre Masterplan do not fall under this category.

Other improvement projects that may not qualify for NZTA financial assistance include some major intersection. However, the introduction of the Business Case Approach means that projects previously non subsidised may be if these improvements can be shown to align with the correct customer outcomes.

Programme Co-ordination

All draft programme dates are reviewed in light of other forecast works that affect the programmed projects or that may be affected by them. The other projects are not confined to those in the transportation area; they may include sewerage or water supply projects and those by external agencies, such as Telecom or Orion Energy.

Figure 7-12: Moore Street Upgrade, Rolleston

7.13.9 Programme Elements

Growth-related works
Growth demands are addressed in three principal ways, through:

Subdivision Commitments	The attributable effects of new developments on the adjacent sections of the network
Implementation of the Christchurch Rolleston and Environ Transportation Study (CRETS) Report's recommendations	The effects of growth on those sections of the network that are most likely to have insufficient spare capacity to cope with it
Greater Christchurch Urban Development Strategy (UDS)	How growth will be managed over the wider greater Christchurch area and how transport networks are expected to accommodate this growth. Transport networks can include the roading, walking and cycling and public transport networks

Subdivision Commitments
The nature of subdivision developments, and the corresponding needs for subdivision commitment expenditure can be difficult to define and predict over a 10-year programme period. This also comes about from the large differences in lead times between receipt of proposals for major developments and their practical completion.

Subdivision commitments can only be determined on a case-by-case basis once applications are lodged and approved. Consent conditions, under the Resource Management Act 1991, requiring financial contributions for roading upgrades conditions can be contested by the developer. The time taken to work through these processes can present a problem in forecasting the works and finance required to meet them. The approach taken in this Plan to address this problem is to:

- Programme specific works when they are confirmed and quantified.
- Programme indicative finance where specific works or projects are not yet identified or quantified.
- Base financial projections on constant-dollar historical expenditures on subdivision commitment works, tempered by consideration of the Council's accepted growth predictions for the various towns and localities within the district.

Prebbleton, Lincoln and Rolleston will be the main high growth centres and under the UDS are planned to continue to keep growing to 2041. The District's townships outside the greater Christchurch area will have more restrained and steady growth reflecting their individual characteristics.

While predicted growth discussed above refers to people, it is expected that average dwelling-occupancy rate will continue to decline over resulting in the numbers of dwellings increasing at a slightly faster rate than the residential population over the period. This is discussed further in Section 7.1.

Assumptions
It is reasonable to assume that the Council may need to fund a share of subdivision road works related to development in future. However, despite the uncertainty surrounding prediction of subdivision commitments, some of the commitments in the immediate years (years 1 to 2 and possibly 3) of the programme are known, because of the lead-times between receipt of proposals for major

developments and their practical completion. These known projects will be programmed as specific items in the forward works programme while retaining a lesser provision for currently unknown commitments.

The demographic changes around dwelling occupancy will have only a very small effect on the total number of dwellings required in the short to medium term and as far as the forecasting of subdivision commitment funding is concerned, they can reasonably be ignored.

Other Third-Party Commitments
In addition to subdivision, some developments or projects at times are cost-shared to benefit multiple parties.

Commercial developments are a common example with intersections or road upgrades being combined with site or entranceway works. In such cases Council may opt to include its portion of work with the overall project and pay for its work to be done.

These agreements are contractual and need to be reflected in financial forecast and forward works programmes.

7.13.10 Demand Related Projects Summary

Refer to 7.14

This Plan considers available options against:

- The social, economic, environmental, and cultural wellbeing of the District, by taking appropriate cognisance of the Council's Goals and objectives
- The extent to which community outcomes would be promoted or achieved by having regard to the Council's published Community Outcomes

In considering these matters there is a need to co-ordinate projects within the Transportation activity, and between this and other activities of the Council. This integration has occurred where possible with the continual development of the Council's systems and activity management plans. The Improvement Plan includes actions to improve this integration.

Analysis of the benefits and costs of options is not appropriate at these early stages of project and plan development covered by this Plan. Rather, these factors should be considered in the decision making process that is followed before any specific project is built.

Most improvement projects listed in this plan should therefore generally be regarded as '*likely solutions to the problem*' rather than firm indications as to the exact option that will be built. However, some projects only explore options, and consider benefits and costs and wider community issues in the process of making more strategic recommendations.

7.13.11 Subdivision Approvals and Commitments

Roads, because of their fundamental role in providing access to and from, and often within, properties, are directly affected by changes in land use and subdivisions. Some of these effects may be very minor and some can be significant either locally or at a network level.

Subdivisions reflect the underlying land use zoning. If the zoning status of land changes through the Selwyn District Plan or private plan changes, this can result in areas being subdivided and developed for residential, rural residential and business/commercial purposes. This can drive the requirement for existing roads and streets to be upgraded and new infrastructure to be constructed and vested in the Council.

Developers usually pay the full cost of roading and development works within new subdivisions. However, when the Council anticipates that a proposed local road will have wider use in network, such as a collector or arterial road, it will contribute towards the incremental cost of any additional width.

New roading assets are vested in the Council upon completion of the subdivision and the issuing of titles to the new lots. The Council, as ultimate owner and operator of these assets, specifies minimum design criteria and checks construction at critical stages. There is a specific process established as a specific condition of each resource consent granted for an activity, like a subdivision, under the Resource Management Act 1991. This process requires, among other things:

- Developers to obtain engineering approval for the proposed works from Council staff prior to construction. This includes providing fully detailed plans and specifications for the approval. Not until approval is obtained can physical construction work, including roading, street lighting, and utilities installation and construction.
- The Developer must have all completed works accepted by the Council before a Section 224(c) Certificate is issued. When the certificate is issued the new assets vest in the Council; however, this is on the proviso that they are maintained and any problems that occur are remedied by the Developer over a Defects Liability Period that can range from 12 to 24 months, depending on the works. Sometimes for a non-critical aspect of work, or work that may need to be delayed due to weather conditions, e.g. sealing a new pavement, the value of the outstanding work + a 20% contingency amount can be bonded with the Council.

New roads and other associated infrastructure like footpaths, streetlights etc. are recorded and added to the RAMM network inventory upon receipt of the assets from the developer.

Where a new development fronts an existing legal road, improvements will often need to be made to it; sometimes improvements are required to other parts of the wider network, separated from the subdivision. These improvements can include footpaths, kerb and channel, access improvements, increased seal width, and improved sight lines and improvements to adjacent intersections.

For each development, the Council considers the need for roading improvements directly associated with the subdivision and, where improvements are justified; engineering staff seek to have appropriate conditions inserted in the relevant consents. These can be established and applied through either the Resource Management Act 1991 (to avoid, remedy or mitigate the adverse effects of a particular development), or as Development Contributions applied under the Local Government Act 2002.

The Council prefers to utilise its development contribution policy, introduced in the 2006 Long Term Council Community Plan, for establishing upgrading contributions for any improvements remote from the subdivision. The roads over which such contributions are sought generally have to be adjacent to the development in urban areas. However, development contributions are sometimes applied on a wider network level basis for infrastructure needed to support the resulting wider traffic growth. Previous examples include a $100 contribution per new lot at Rolleston to fund the Council's share of state highway intersection improvements at Rolleston, and a $500 contribution per lot at Lincoln for a new bridge on a proposed collector road to connect between new subdivisions.

Under the provisions of these Acts, and case law, the Council is often not able to require a developer to pay the full cost of an upgrade to an existing road and is required to share the cost of the works. In some cases, the Council will apportion costs on the basis of contributing traffic, however generally a minimum 50% contribution is sought as it would be inappropriate for the Council to commit itself to significant expenditure on the basis of a low contribution.

Existing roads are upgraded as a result of new subdivisions or changes in land use if the additional traffic generated is significant enough to warrant a contribution being imposed on the developer to mitigate its adverse effects on the network.

When a developer contributes to any upgrading there is then an obligation on the Council that the work will be completed in a reasonable time. Such works are considered for inclusion in the Long-Term Council Community Plan, and any subsequent Annual Budgets, following receipt of payment. Works that have had contribution payments paid before a cut-off date of the 28 February are considered and programmed for inclusion in the forthcoming Draft Annual Budget, as appropriate.

Alternatively, a developer may suggest carrying out the upgrading work in conjunction with the construction of the subdivision. The Council only approves of this practice on a case-by-case basis; the developer then pays the full cost at time of construction, and the Council's share is reimbursed following approval of the Annual Budget at the commencement of the appropriate financial year. Usually there are practical and economic efficiency with this approach for both the Council and the Developer.

Figure 7-13: New Traffic Lights at Rolleston and State Highway 1 (partially paid by Developer Contributions)

In rural areas, financial and development contributions can be sought for improvements on more distant roads, but it becomes increasing problematic when trying to justify and quantify this with increasing distance from the development. Generally, such contributions are limited to the immediate network, for example sealing a section of road beyond the immediate frontage of a rural residential subdivision where it is expected traffic will need to utilise this to gain access to the sealed network. Under certain conditions Development Contributions, levied under the Local Government Act 2002, can be used to fund significant projects with wide network benefits, in locations remote from the developments; some of the CRETS projects are likely to meet the required criteria.

In some instances, it is possible for the Council to refuse consent for developments requiring extensive work because it is not in the public's best interest to expend funds, but such circumstances are relatively rare and the burden of justification lies with the Council.

Until recently, the nature of subdivision development was that the Council had little, if any, control over the timing or implementation of any project. Recent strategic planning initiatives such as the greater Christchurch Urban Design Strategy are attempting to control the amount and staging of growth ensure that it and the supply of supporting infrastructure, is sustainable and achievable.

The development of Structure Plans has provided greater certainty in the urban form likely to develop and deemed appropriate. This enables coordinated planning to occur and opportunities for lead infrastructure to be provided by Council and funded by development contributions (e.g. Lowes Road).

7.13.12 Improvements planned as part of Stage Two of the Christchurch Southern Motorway

The construction of the Christchurch Southern Motorway 2 has commenced with a completion date expected in 2019/20. CSM2 is expected to reduce travel times between Selwyn and Christchurch with off peak travel times between Rolleston and Christchurch expected to drop from 30 minutes to 15 minutes.

CSM2 will be funded by NZTA as part of a series of national roading improvement projects relating to "Roads of National Significance" promoted by central government. Council has supported this project because of the significant transport benefits to the District. In response, Council needs to ensure its local road network can meet the increased travel demand unlocked by CSM2.

Improvements are needed to the surrounding Prebbleton roading network to cater for the increased and changing traffic movements to access the proposed motorway interchange positioned at Shands and Marshs Rd. This includes installing roundabouts and widening roads along a number of key roads connecting to the new motorway, as traffic volumes along these roads are expected to increase significantly as once the motorway opens. This is described further below.

7.13.13 Connecting Rolleston Township Areas across State Highway 1 and Main Railway Lines

Traffic volumes along State Highway One to the north of Rolleston are expected to increase significantly over the next ten years. Currently around 20,000 vehicles travel along the State Highway from the north of Rolleston each day.

Headline 7.8:
There will be impacts from traffic growth and CSM2. Council needs to work closely with NZTA to ensure the response is effective and affordable.

By 2023 this will be 30,000 vehicles. Consequently, the traffic signals on State Highway 1 at Rolleston Drive and Hoskyns Road will be unable to cope with the traffic volumes.

Rolleston needs a good connection between its town centre to the south and its business park to the north.

Council in conjunction with the NZTA have developed a concept to utilise a road bridge over State Highway 1 and the main railway line, referred to as a "Flyover", to connect the two halves of the Rolleston township together. This would enable all transport modes to be able to move freely between both halves of Rolleston safely and not at the expense of the through traffic on State Highway 1.

The project was included into the 2015 NLTP as a Council project. Things have since evolved with NZTA now taking ownership for this project and Council providing its share of $10 million dollars towards the improvement. Further details around this project can be found in

7.13.14 Prebbleton Arterial Intersection Projects

Prebbleton has been experiencing an increase in traffic volumes following the construction of the Christchurch Southern Motorway. The key rural intersections around Prebbleton are not designed for current traffic volumes. With the construction of CSM2 and a proposed interchange to the North West

of Prebbleton, the following projects are necessary to ensure time travel reliability and safety for all road users.

The projects below were worked out with NZTA via the Prebbleton Arterial Intersection Business Case and all projects below are expected to attract NZTA subsidy. The timing of these projects has been worked out with NZTA.

Prebbleton projects:

- Shands/Blakes Rd Roundabout (2019/20). $4,830,000.
- Blakes Rd Widening (2019/20). $160,000.
- Springs/Marshs Rd Roundabout (2020/21). $4,582,000.
- Springs/Hamptons Rd Roundabout (2020/21). $2,921,000.
- Hamptons Rd Widening (2020/21). $500,000.
- Shands/Hamptons Rd Roundabout (2021/22). $6,292,000.
- Trents Rd widening (2022/23). $230,000.
- Shands/Trents Rd Roundabout (2022/23). $4,765,000.

7.13.15 Rolleston Town Centre projects

Rolleston's population is expected to increase from around 17,000 in 2017 to around 28,000 in 2030.

It is important for Rolleston as Selwyn's largest town, continues to be seen as a desirable place to live, work. Play and stay for Selwyn's future prosperity. To date Rolleston has been able to exist reasonably well with the separation of the residential and industrial areas by State Highway 1. However as both areas continue to grow and develop, so will the pressure be to connect these areas together to accommodate the increasing number of people needing to move between them.

Headline 7.10:
As Rolleston grows and becomes recognised as a commercial centre, expectations for improved community and traffic facilities will continue.

CSM2 will make it easier for people to work and live in Rolleston and still be able to visit Christchurch City for shopping, business and recreation. Investment in local roads, community facilities and parks are necessary to meet the needs of Rolleston's growing population. These improvements are needed to ensure Rolleston continues to be Selwyn's employment and business hub.

Traffic volumes in Rolleston will continue to increase as the town's population grows and more shops and services locate into the town centre area. The increasing population means more traffic of all types will needs to be safely accommodated in the revamped Town Centre in accordance with the Rolleston Town Centre Master Plan.

The extension of Moore Street from Tennyson Street to Norman Kirk Drive, and Wordsworth Street to Tennyson Street in conjunction with the planned new library building is required to enable the Rolleston Town Centre.

Future public car parks are identified off Tennyson St to the north of the reserve and off the Wordsworth Extension near Rolleston Drive. A "Park and Ride" facility may be developed next to Council Headquarters if there is demand for this service.

An overall increase will increase pressure on key intersections. These intersections are identified below.

Rolleston Town Centre Projects:

- Tennyson St Upgrade Stage 2 (2018/19). $4,029,000.
- Traffic Signals Lowes/Goulds/Spring Rolleston (2019/20). $1,883,000.*
- Wordsworth St Extension (2019/20). $3,669,000.
- Public Car Park off Tennyson St West (2019/20). $1,000,000.
- Traffic Signals at Rolleston Dr/Tennyson St (2020/21). $1,913,000.*
- Town Centre Signage (2020/21). $13,000.
- Public Car Park off Wordsworth Extension (2020/21). $1,400,000.
- Tennyson/Moore St Roundabout (2021/22). $950,000.*
- Moore St Extension (2021/22). $911,000.*
- Moore St/Markham Way/Norman Kirk Dr Intersection (2021/22). $477,000.*
- Markham Way Extension (2021/22). $424,000.
- Norman Kirk Dr pathway (2021/22). $58,000.
- Markham Way Traffic Calming (2022/23). $306,000.
- Reserve pathways and lighting (2022/23). $868,000.
- Lowes Rd/Levi Dr/Masefield Dr Roundabout (2023/24). $1,356,000.
- Tennyson St Upgrade Stage 3 (2023/24). $1,182,000.

The total cost of these projects is $20.5 million. None of these projects are currently eligible for NZTA subsidy. The timing of intersection upgrades marked with a "*" have been reviewed prior to the 2018 LTP. No change in program data occurred from this review.

7.13.16 Planning for Lincoln's Roading Network

Lincoln's residential population is expected to increase from 7000 now to over 12,000 by 2030. In addition, the Lincoln University and Crown Research Institutes are planning to create an "Innovation Hub" that will combine and expand existing teaching and research facilities which will have a significant impact on the western end of the township and place further demands on the key arterial roads and intersections such as on Springs Road and Gerald Street.

Gerald Street will need to cater for a number of different functions such as catering for active modes, more retail activities and freight traffic as part of its role in the wider route that connects SH1 at Burnham and SH75 at Tai Tapu together.
Previous strategic transport studies identified that the construction of a new route to the south of Lincoln could act as a bypass for through traffic along Gerald Street. Council has investigated this proposal and has decided not to progress it because of the predicted low traffic volumes using the bypass.

To meet the growing traffic demand within Lincoln, the following improvement projects are planned over the next 20 years.

Lincoln Town Centre Projects:

- William St Carpark (2018/19). $590,000.
- West Belt North Sealing. (2018/19). $50,000.
- Gerald St/West Belt Traffic Signals (2023/24). $1,206,000.*
- Gerald St Upgrade Eastern End (2023/24). $2,401,000.
- Gerald/Veron Dr Traffic Signals (2025/26). $1,233,000.*
- Gerald St Upgrade Transitional Section (2025/26). $3,049,000.
- Gerald/James/Edward Traffic Signals(2025/26). $1,060,000.*
- Traffic Signals Springs/Gerald/Ellesmere Junction Rd (2027/28). $1,919,000.*
- Lyttelton St Parking Precinct (2027/28). $423,000.
- Maurice St Parking Precinct (2028/29). $356,000.
- West Belt North Parking Precinct (2029/30). $450,000.
- Gerald St Upgrade Western End (2031/32). $1,869,000.

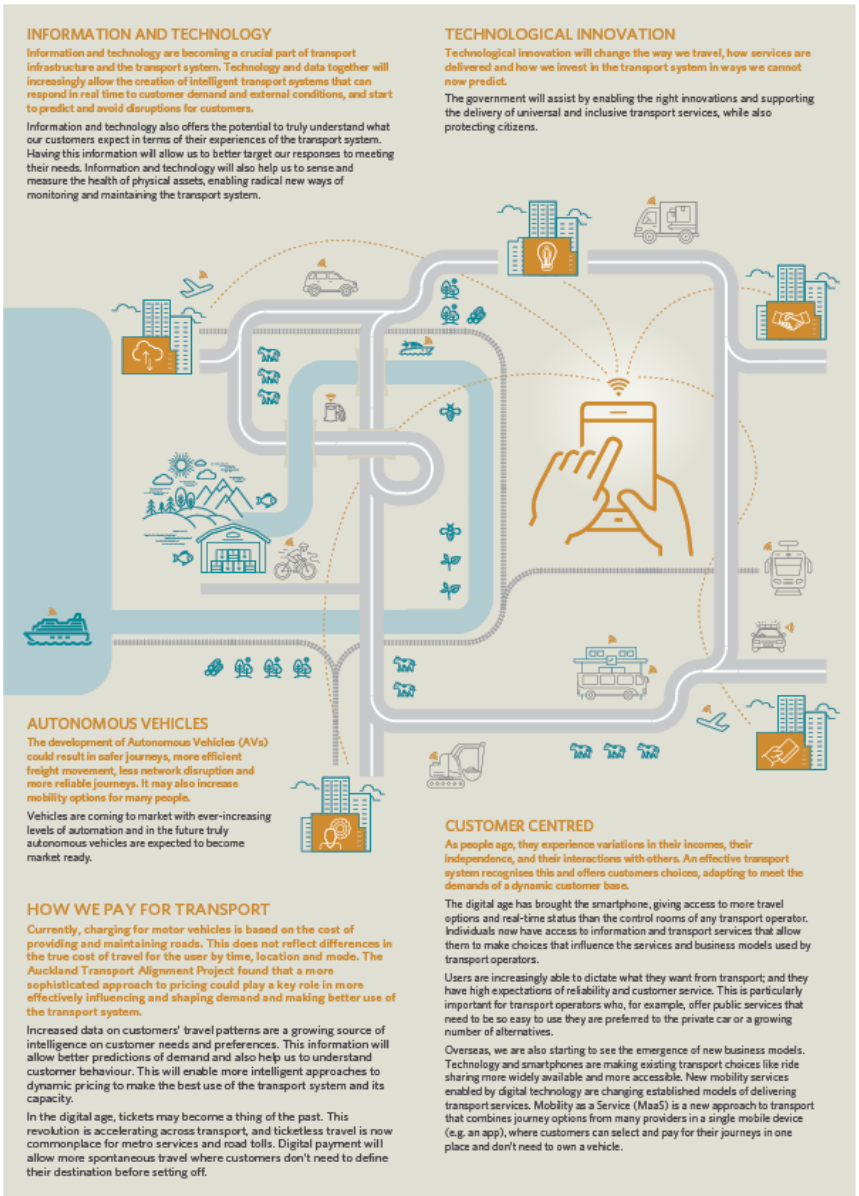
The total cost of the projects above is $14.6 million. The timing of intersection upgrades marked with a “*” have been reviewed prior to the 2018 LTP. No change in program data occurred from this review.

7.13.17 Long Term Strategic View Implications

The Long-Term Strategic View released by NZTA outlines how transport sector will change in the future.

The LTSV identifies a number of disruptive trends for transport that the sector, including Council needs to be cognisant of. These include:

Headline 7.11:
Council has acknowledged that there is a balance between actions and affordability. A structured project moderation process ensures this is addressed systematically



Source: Long Term Strategic View
https://nzta.govt.nz/planning-and-investment/long-term-strategic-view/introduction/the-view-at-a-glance/drivers-of-changethe-emerging-challenges-we-need-to-respond-to/

Once implemented, these disruptions have the potential to change the way transport occurs on Council's roading network. For example, the introduction of autonomous vehicles in the context of "transport as a service" has the potential to reduce congestion on our transport networks. However, there is uncertainty around when these disruptions will occur.

7.13.18 Other Projects

Council is also planning to continue to expand our main cycleway networks. The aim is to provide a network of safe off-road cycleways along increasingly busier roads that will connect our main townships together, particularly in Eastern Selwyn. This builds off the success of what has been achieved with the "Rail Trail" linking Hornby to Lincoln. However, the rate of expansion of the network will be influenced by the more pressing funding priorities relating to the need to respond to the rapid growth in traffic and supporting roading improvements at Rolleston and Prebbleton to create connections to the Southern Motorway.

New cycleways determined to be a high priority by Council are planned for:

- Leeston to Doyleston (2018/19). $895,000.
- Lincoln to Tai Tapu Cycle Connection (2019/20). $100,000.
- Rolleston to Templeton Cycleway (2020/21). $400,000.
- Darfield to Kirwee Cycleway (2022/23). $1,000,000.
- Jones Road Cycleway (2023/24). $750,000.
- Templeton to Prebbleton Cycleway (2024/25). $512,000.
- West Melton to Rolleston Cycleway (2026/27). $750,000.
- Springston to Rolleston Cycleway (2027/28). $500,000.
- Rolleston to Burnham Cycleway (2028/29). $700,000.
- Springs Road to Lincoln Cycleway (2031/32). $126,000.
- Leeston to Southbridge Cycleway (2031/32). $812,500.
- Glentunnel to Whitecliffs Cycleway (2032/33). $503,750.
- Darfield to Sheffield Cycleway (2033/34). $1,600,000.
- Sheffield to Springfield Cycleway (2035/36). $1,225,000.
- West Melton to Kirwee Cycleway (2035/36). $1,650,000.
- West Melton to Waimakariri Cycleway (2036/37). $825,000.

The total cost of these cycleway projects is $7.0 million over the next decade and $12.3 million over the next two decades. This sum is the total cost and does not include subsidy that may be provided from NZTA as part of Business Cases and/or the Low Cost/Low Risk category. Cycleways that are currently eligible for funding assistance are underlined.

N.B. These cycleways have been identified from Selwyn's Walking and Cycling Strategy.

There are also a range of other general roading projects planned across the District over the next 20 years. Significant projects include seal extensions and seal widenings:

- Weedons Ross Road widening (2020/21). $1,000,000.
- Hoskyns Road widening (2022/23). $1,600,000.
- Ellesmere Road widening (2024/25). $2,100,000.
- Wards Road widening (2026/27). $2,920,000.
- Weedons Road widening (2030/31). $1,000,000.

Headline 7.9:
A successful solution will link Rolleston together effectively and connect the wider community, while facilitating through traffic flows.

- Leaches Road widening (2032/33). $3,400,000.
- Two Chain Road widening (2033/34). $700,000.
- Alyesbury Road (2034/35). $1,780,000.
- Burnham School Road (2034/35). $450,000.

Total Cost for Seal Widening:

- **10 years = $7,620,000.**
- **20 years = $14,950,000.**

- Dunns Crossing Road extension (2018/19) $192,500.
- Robinsons Road extension (2022/23). $306,000.
- Coaltrack Road extension Stage 1 (2024/25). $612,500.
- Tancreds Road extension (2024/25). $245,000.
- Kerrs Road extension (2026/27). $280,000.
- Brookside Road extension (2028/29). $700,000.
- Coatrack Road extension Stage 2 (2031/32). $490,000.
- Coaltrack Road extension Stage 3 (2031/32). $420,000.
- Kings Road extension (2033/34). $262,500.
- Creyke Road extension (2033/34). $332,500.
- Clintons Road (Bangor). (2033/34). $245,000.
- Kynvetts Road (2033/34). $630,000.
- East Maddisons Road Extension (2034/35). $210,000
- Clintons Road (2034/35). $525,000.

Total Cost for Seal Extensions:

- **10 years = $1,636,000.**
- **20 years = $5,451,000.**

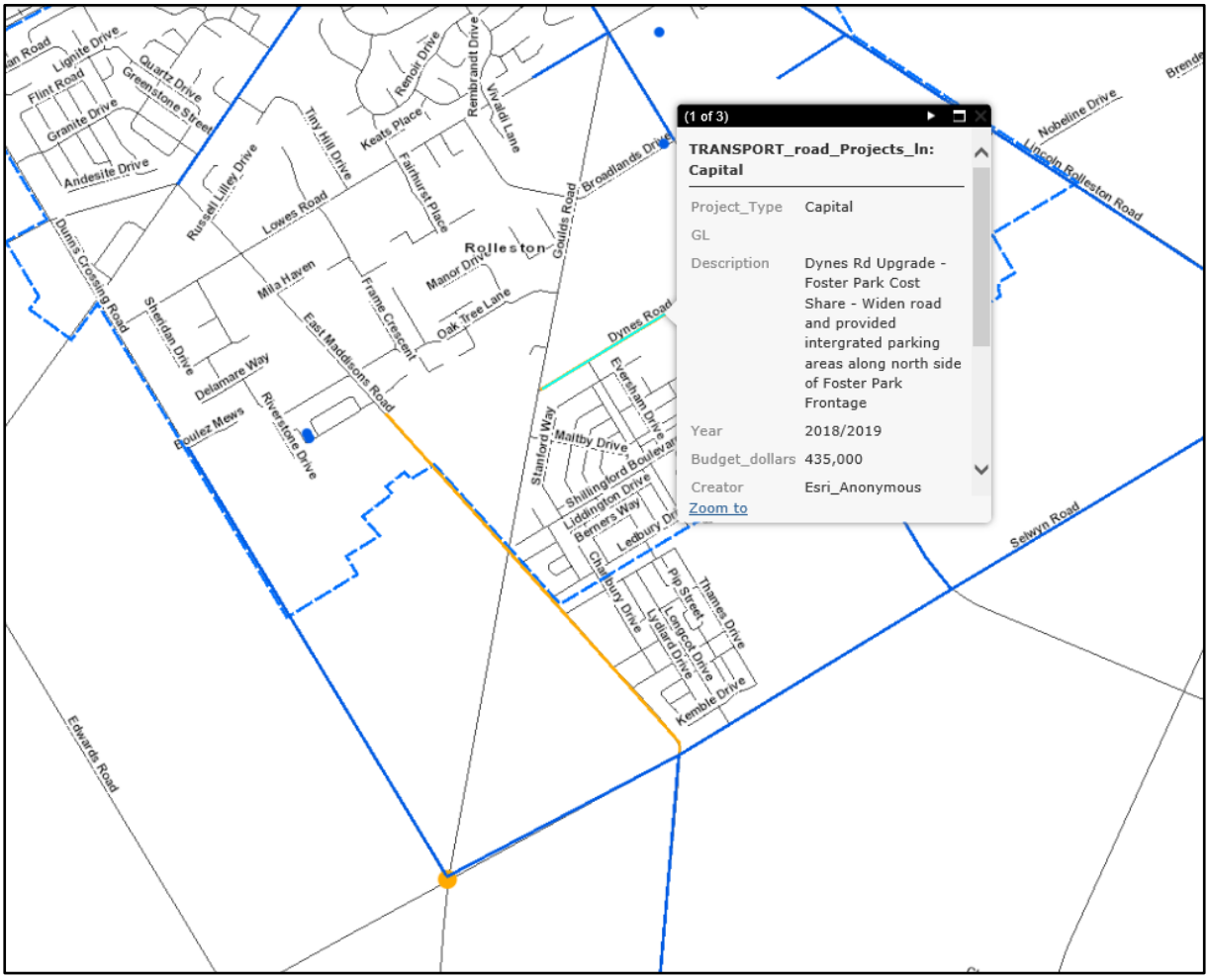
N.B. Seal widening and extensions that are likely to attract subsidy are underlined.

7.13.19 Project Integration

Council has a 30 Year GIS layer for Water and Transport Projects. This will identify the locations where Water and Transport project are planned and provide the opportunity to align their timeframes. From a Transport perspective, this may mean that newly constructed Assets will not be ripped up to allow for a pipe upgrade.

Towards the end of the 2018 LTP process, this layer will be populated once the program has been optimised and moderated with Councillors.

Figure 7-39: 30 Year Water and Transport GIS Layer



The approved growth and demand related projects within this section have been included in the financial forecast – **Refer to Section 11.**

7.14 Issues

Improvement Plan items:

IP 7.6 Continue to monitor Lincoln HUB proposal and impact on Transportation network

IP 7.7 Update this section and associated asset issues as CSM2 is established (Ongoing)

IP 7.9 Improve process to source data and update:
Figure 7 31: % Composition of Council Funded Improvements 2005/06-2016/17
Figure 7 32: Average Annual Council Funded Improvements 2005/06-2016/17
Figure 7 33: Total Annual Council Funded Improvements 2005/06-2016/17
(New)

IP 7.10 Review projects list following LTP and IS deliberations (new)

8.0 RISK MANAGEMENT

This section looks at the Risk Management Processes utilised by Selwyn for assessing and managing risk within the Transportation Activity. Risk is used as a strategic decision-making tool assisting with developing and prioritising district strategies and work programmes.

Contents

8.1 Organisational Approach to Risk Management

8.1.1 Risk Policy

Risk management involves understanding the likelihood and consequences of any situation we consider eventuating. As part of planned improvements, Council has established a Risk Policy to guide the approach to the management of risk and ensure there is consistency across the organisation.

The Risk Policy identifies the following risk types:

Asset & infrastructure	Compliance
Financial / Audit	Environment
Customer relations / service delivery	People and capabilities
Heath, Safety & Wellbeing	Political / Reputation

These risk types have been assigned as responsibilities (at an activity group level) within the Council, and are then aligned with risk management principles and accountabilities set out in the Policy. Both Council and the Audit and Risk Subcommittee have overall responsibility in ensuring risks are managed effectively.
Infrastructure and Planning, and Transportation managers, staff, and supporting specialists are assigned accountabilities according to their role in managing and/or treating identified risks.

8.1.2 Risk Framework

Selwyn District Council's Risk Management Framework has been developed to maintain an organisational ethos and operating culture which achieves the integration of systematic Risk Management Processes into all management activities, both at a strategic and operational level. The objectives of the Framework include:

- achieving Council's goals, programs, and targets with a commercially and politically acceptable level of risk;
- ensuring all staff understand and fully accept their risk identification and control responsibilities;
- ensuring all staff implement appropriate risk management processes naturally as part of their daily work; and
- establishing a best practice model for corporate governance and risk management for local government in New Zealand

The Risk Management Framework defines how the Policy is implemented by the organisation, and then aligned with the Risk Management processes in-place for Transportation. Over time the framework and processes will become more standardised for the whole of Council.

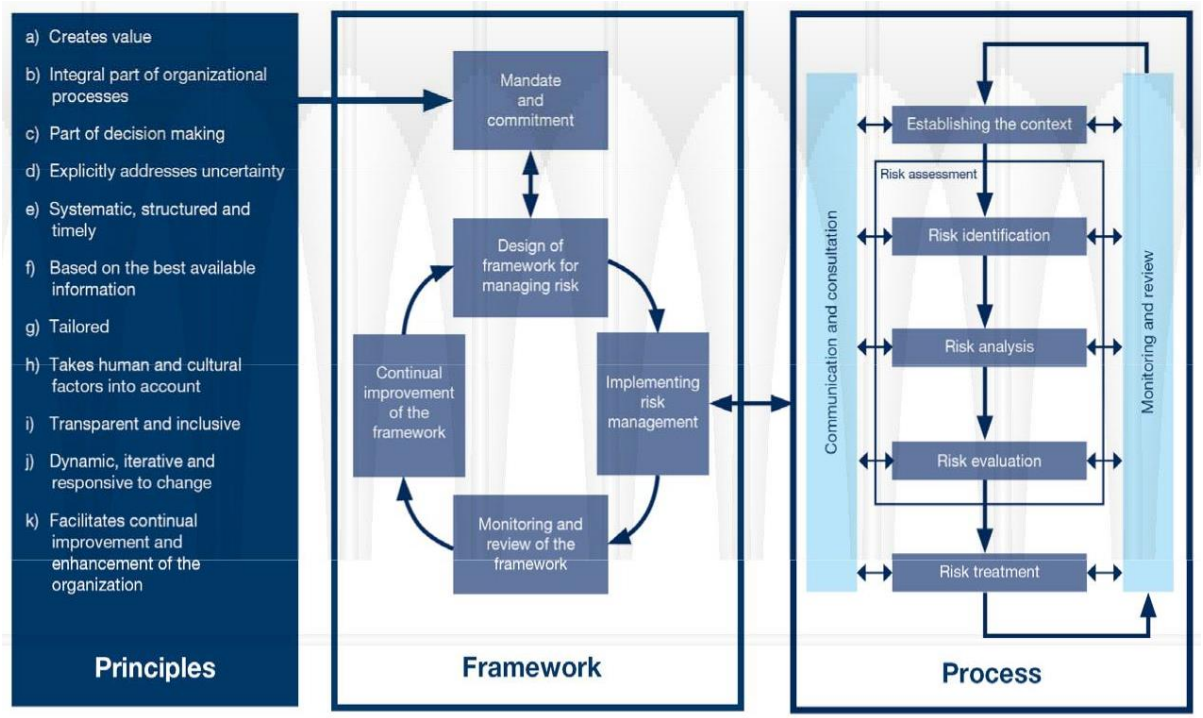


Figure 8.1: Risk Management Framework Definition (Selwyn District Council)

The grid and key below shows the combination of likelihood and consequences, and the response actions required to treat risk. The framework implementation already demonstrates a high degree of alignment with the Transportation risk management processes documented in Section 8.3.

Table 8.2: Risk ratings and risk priority ratings (Selwyn District Council Risk Policy)

		Consequence				
		Insignificant (1)	**Minor** (2)	**Moderate** (3)	**Major** (4)	**Catastrophic** (5)
Likelihood	Frequent (5)	**5**	**10**	**15**	**20**	**25**
	Often (4)	***4***	**8**	**12**	**16**	**20**
	Likely (3)	**3**	**6**	**9**	**12**	**15**
	Possible (2)	**2**	**4**	**6**	**8**	***10***
	Rare (1)	**1**	**2**	**3**	**4**	**5**

Risk priority rating		
Risk score	**Level of risk**	**Risk response**
15-25	Extreme	Requires immediate assessment of actions
8-12	Significant	Requires remedial assessments and action via the annual planning process
4-6	Moderate	Adress via new procedures and/or modification of existing practices and training
1-3	Low	No formal requirement for further action, unless escalation of risk is possible

The framework incorporates assessment criteria for reviewing likelihood and consequence risk ratings, supporting the updating of Transportation's risk register as part of continued improvements.

8.2 Establishing the Context of Risk Management for SDC Transportation

By identifying risks we try to understand them better and introduce practices which can eliminate, minimise, or mitigate the effects and recover if they do happen.
The impact or consequences of the risk occurring range from low (or insignificant) and can be addressed as part of our business-as-usual work, through to extreme (or catastrophic).
Some risks are considered likely to occur, and day-to-day network management can respond to their occurrence (such as a slip on a hillside road, or an urgent response to replace damaged or missing road signs). Some risks may eventuate rarely and possibly not be experienced in our lifetime (a major earthquake, or structural failure of a bridge).

This is worked through by each activity and a Risk Management Strategy for key risks has been developed. This could include upgrading of assets to make the more robust or resilient to extreme rainfall events, or ensuring emergency management programmes are in-place and appropriate.

8.2.1 Risk Management Strategy

Risks can be seen to arise from many areas of Transportation, both in the physical assets, service delivery to road users, and organisational management of the services provided. Therefore, the Transportation risks include:

- risks that impact on the council's ability to operate or manage the transportation services and/or maintain required levels of service;
- risk related to the road users and the way they interact with the assets. Road safety is often an important risk consideration in the planning and management of the network; and
- risk items that could impact directly on the assets (e.g. weather events damaging road or bridges).

When managing risk of a network asset such as this it is necessary to establish the goals, objectives, strategies, and the scope of the assessment and management process. If this is not done, then the acceptability of risks cannot be evaluated. The corporate level policy towards risk also needs to be stated, defined or interpreted.

Establishing the context for the Council's risk management process, as suggested by SAA/SNZ HB 4360:2004, involves:

- Defining the relationship between the Council and the environment through SWOT analysis. Threats and weaknesses may highlight priority risk areas
- Identifying the stakeholders who should be consulted during the risk management process
- Defining roles and responsibilities for risk management
- Establishing the criteria for how risk will be evaluated, including ratings for risk probabilities and consequences, and a risk treatment matrix. This latter is of particular importance in that it effectively sets a level for 'acceptable risks'
- Separating the risk management activity into a set of elements, which provide a logical framework for risk identification and analysis

8.2.2 Risk Categories

The risk assessment process identifies Transportation risks into the four categories illustrated In the figure below (Source RIMS- Risk Guideline). Risks are posed through potential issues with:

- planning (we are unsure of what may happen, or have not adequately considered possible outcomes)
- management (plans, policies, and processes do not sufficiently address negative effects of events, non-compliance, legal, and political issues)
- delivery (capacity, capabilities, and physical/financial resources may not support Council's operations) and
- physical assets (where failure of critical assets, systems operating above capacity, or damage from natural hazards such as extreme weather and earthquakes).

Other sections within the asset management plan mostly cover the planning risks, whereas this section has a holistic approach of all risks related to the Transportation services and assets. Our key risks identified with "Extreme" or "Significant" residual levels of risk have been considered, with the strategies used to manage risks including the following:

- Risk management, mitigation or control - SDC uses active measures to manage the risk to acceptable levels;
- Risk avoidance – SDC may have certain by-law, policies or procedures in place that avoid the occurrence of certain risk events.
- Risk acceptance – SDC may choose to except certain risks when they are minor or out of the council's control to manage; and,
- Risk transfer – some risks are transferred to another party who is better positioned to manage the risks. Examples include performance risks being transferred to contractors or the large financial loss being transferred to an external insurer.

Risk management is the systematic application of management policies, procedures and practices to the tasks of Identifying, Analysing, Evaluating, Treating and Monitoring of risks. The objective for the Council is to strengthen resilience to shocks and stresses by taking a coordinated and planned approach to risks based on good-quality information.

Most asset management planning processes already address risks by targeting a given level of service. In other words, if the levels of service as designed are achieved, then legislative compliance, prudent investment & financial management, minimisation of exposure to the public and general liability and minimisation of asset risks will also occur. Critical assets are also identified to ensure there is prioritisation on managing infrastructure and/or processes that have the greatest impact on safety and continuity of services. A good example is SDC adopting and following Level of Service recommendations as set out in the Road Efficiency Group's ONRC performance framework. Some of the measures include expectations on road safety standards appropriate for respective road classes. However, there are a number of risks that are highlighted and addressed in this section.

8.2.3 Identified Risks and Linkages to other AMP Section

The table provides a summary of the highest-ranking risks, current mitigation measures and indication of risks that would require further management to reduce the risk envelope to desired levels.

Risk Type	Risk	Current Controls or Further Management Required	Linkage to other AMP Section (financial allowance made)
Planning Risk			
Environment	Natural Hazards – Major and Minor Events	Natural hazards are well defined, and emergency response processes are in place for minor and major events. More proactive risk management/resilience should be considered.	Operations and maintenance contracts are covered directly in Financial Management Section 11 and Life-cycle Management Section 9..
Asset and Infrastructure	Traffic Demand Increases Cause Traffic Control to be inefficient	Traffic growth puts pressure on control systems. Regular traffic modelling will maintain optimal setting for traffic control. The current process of problem identification and new settings based on traffic modelling is sufficient mitigation of this risk.	This risk is managed under current traffic services budgets accounted for in the Level of Service Section 6.
Compliance	Councils' Roading Asset on Private Land	Private land owners may make access to the council's assets difficult, thus limiting the ability to maintain or inspect. The current approach to relationship management deems effective.	No financial implication or allowance in AMP required.
Management Risk			
Financial/ Audit	External Economic Influences	External economic influence may cause significant cost fluctuations that will impact the available funding and the ability for programme delivery. Managing this risk is difficult to manage.	Some understanding of this risk and its impact is accounted for in the Life-cycle Management Section 9.
Financial/ Audit	Inability to Fully Utilise Funding Options	Transport has a two-way relationship to maintain with both funding arms, Waka Kotahi and SDC elective members. There is a prevailing risk of not obtaining and delivering the required funding. This risk is managed through active management of the relationship and provided sufficient evidence of investment needs to both parties.	The risk management for this task is mostly related to robust asset management processes that are evident through the AMP.

Risk Type	Risk	Current Controls or Further Management Required	Linkage to other AMP Section (financial allowance made)
Management Risk			
People and Capabilities	Business Continuity: Loss of System Knowledge	Losing skilled people and their tools to deliver robust network management remains a risk for council. It is mostly managed through succession planning and following securing protocols on systems.	No financial implication or allowance in AMP required.
Political/ Reputational	Lack of Political Alignment	The risk of political misalignment may originate from political agendas and technical objectives not being aligned. This risk is managed through sufficient information sharing and management of relationships.	No financial implication or allowance in AMP required.
Delivery Risk			
Assets and Infrastructure	Inadequate Portfolio and Capital Works Contract Management	Due to regional growth, there is a growth in the number and complexity of programme management. If not executed adequately, this risk could impact the effectiveness in delivering the works programme. It has been identified that some additional tools are required to manage this risk effectively. A review of the current procurement processes and models may also be required.	Getting the right tools and skills to manage this risk could be dealt with under current operational budgets. The process to be included in Section 10 Asset Management Processes and Practices
People and Capabilities	Inadequate Project Management	Failure in project management is an ongoing risk due to the complex nature of roading projects. This risk is sufficiently being managed through a series of controls, including procurement and contract management processes.	Section 10 Asset Management Processes and Practices includes consideration to effective project management.
Compliance	Non-compliance with Legislation and Legal Requirements	Fast-changing legislation on occupational health and safety causes a risk of councils not being aware or lacking behind with complying to requirements. This risk is currently sufficiently managed through processes of validating current practises to new requirements.	Section 10 Asset Management Processes and Practices includes consideration of legislative and legal requirements.

Risk Type	Risk	Current Controls or Further Management Required	Linkage to other AMP Section (financial allowance made)
Physical Risk			
Environment	Minor to Major Natural Hazards roads and bridges	Natural hazards were identified as the top risk to the physical assets ranging from the likely event of ice and snow on roads to the likely flooding events. As highlighted earlier, the current approach to resilience should be expanded into wider pro-active resilience programmes. For example, due to climate change, there are some 'slow-burning' changes that are starting to impact on assets e.g. higher temperatures affecting surfacing performance and wet/drying subgrade impacting on pavement performance.	Most resilience improvements (e.g. work n bridges) is included in the Lyfe Cycle Costing Section 9.
Physical Risk			
Health, Safety and Well-being	Road User Types Conflicts	Significant update of more active modes of travel (e.g. cycling) has a potential risk of conflict between the travel modes, where adequate separation has not been provided. SDC is undertaking a programme of addressing this issue, and it is believed that the risk is managed appropriately.	Cycleway improvement is included in the Lyfe Cycle Costing Section 9.
Health, Safety and Well-being	Inadequate Road Marking and Signing	Insufficient marking and signage is an ongoing risk that has serious safety implications on road users. Signage maintenance is also included in maintenance contracts, thus ensuring this risk is sufficiently managed.	Road signage is included to the Lyfe-cycle Section 9 and Level of Service Section 6.
Assets and Infrastructure	Traffic Signal/Controls Failures	Traffic signal/control failures risk would mostly originate from power outages. With sufficient back-up power provided, it is believed that these risks are appropriately managed.	Operations and maintenance contracts are covered directly in Financial Management Section 11.
Assets and Infrastructure	Non-Hazard related Bridge Failures	Given the critical nature of bridges, the condition and capacity to carry the required loading is a significant risk factor. This risk is being managed according to Life-cycle cost principles, and no further or additional controls are required.	Most resilience improvements (e.g. work n bridges) is included in the Lyfe Cycle Costing Section 9.

Table 8.3: Residual Extreme and Significant Risks from Assessment Process

8.2.4 Recommendations for Improving Risk Management and Planning

Section 8.11 provides recommendations regarding the improvement of the risk section of the AMP and the risk register feeding into it. The actual risks that require more attention and analysis for further development are:

1. A more proactive approach to resilience improvements. For example, incorporating a holistic resilience responsive asset management process would see the over-all resilience of the infrastructure improvements with time;
2. Updating the risk register as part of the asset management cycle with more focus on specific risks associated with each section within the AMP, and the corporate risk policy;
3. Establishing a more robust programme management system for capital and maintenance works; and,
4. Developing a strategy for climate response that includes both climate mitigation (reducing carbon footprint) and adaption climate-responsive maintenance and renewals (e.g. more resilience from day-to-day maintenance activities).

8.3 Risk Assessment Process

8.3.1 Identification of Risks

An important component of effective Asset Management is to identify risks in the context of the Council's obligations for the Transportation activity. The identification of risks results in the identification of improvements to mitigate these risks. Improvements have been recorded throughout this AMP.

Council is exposed to a number of risks arising from the operation of the road network. These risks arise from any number of sources, but can generally be grouped into two main areas:

- Management — those risks that are largely concerned with the way the roading network is managed. These include funding, resourcing, programming of work and interaction with the public.
- Environmental — those risks that are concerned with the impact of the environment on the physical assets, including natural and man-made disasters.

Risks have been reassessed as part of the development of the 2021 AMP. The methodology is based on AS/NZS ISO 31000: Risk Management – Principles and Guidelines, aligning with the Council's Risk Management Framework. The assessment process used for Transportation has drawn from NZTA Research Report 415 case studies, best-practice guidelines for risk management on road networks understood by both risk specialists and Transportation staff, along with SNZ HB 4360:2004.

This involves classifying risks into areas which focusses the analysis and management approach and allows for their prioritisation as part of the Transportation activity risk register.

8.3.2 Risk Assessment Criteria

The establishment of risk management criteria is one of the most important steps in the risk management process, because it sets the boundaries for consistent risk decision making across the organisation. The 'acceptable' level of risk for the Council has yet to be determined, but alignment with the organisation's Risk Management Framework will enable this to be developed in this AMP cycle.

The likelihoods and consequences of events occurring, or risks arising, are currently measured as described in the Risk Register, which demonstrates good alignment with the Risk Framework process.

The level of risk to the Council is indicated by the product of the respective probability and consequence scores shown in the Likelihood and Consequence tables and summarised into the following categories by the total scores indicated.

Transportation risks are assessed based on Council's Risk ratings and risk priority ratings (section 8.1.2)

8.3.3 Risk Treatment, Monitoring and Review

If all possible work that impacts on level of service was done, then the probability of failing to deliver the level of service would be zero. If none of this work was done, the probability of failure would be almost certain.

In reality, not all items identified can be mitigated either immediately or in the long term; but numerous items are being mitigated. The successful implementation of each identified work item will help to reduce the probability of failure.

For a particular project or work item, the probability of failure to deliver its desired contribution to achieving levels of service is affected by a number of factors – Standard of:

- Planning and design (Lifecycle) – human resource support, climatic based influences
- Construction
- Maintenance
- Operation
- Monitoring
- Renewals

All of these factors can impact on a successful outcome and will affect the lifecycle cost of the asset involved.

There is, therefore, a need to thoroughly assess the lifecycle cost of projects and compare costs of options that are deemed to deliver the same outcome (generally as an improvement to levels of service). Lifecycle costing is of course, a fundamental principle behind good asset management. A full assessment of lifecycle cost would address capital costs for planning and design and construction as well as the costs for operation, maintenance and monitoring. The complexity of skills required for all the stages as well as the materials required can be factored into the costing. In other words, sound lifecycle evaluation of options and implementation of good planning, design, construction, maintenance, operation and monitoring will minimise the probability of failure to deliver the project's contribution to levels of service.

8.3.4 Prioritisation of Expenditure to Manage Risks

8.3.4.1 *New Assets, Operations and Management Improvements*

The successful management of the Transportation activity is dependent on the coordination of a multitude of activities that generates a work programme that consist of planning, designing, construction, operation, maintenance and monitoring of the assets.

There are inevitably competing demands placed on the O&M budgets and capital expenditure budgets that are available for the Transportation Activity. Decision making processes must ensure that expenditure is allocated fairly and wisely according to the needs of existing and future generations and in a way that is affordable. Regional and national planning and prioritisation processes also affect decision making.

8.3.4.2 *Existing Assets*

Typically, assets are replaced when there is unacceptable risk to levels of service because of:

- Asset condition

- Operability
- Vulnerability to external influences (earthquake, flood, fire etc)

In the future, subject to the availability of resources, it is intended that selection and prioritisation criteria for asset renewals will put a greater emphasis on condition, performance, risk and failure history assessment. This is typically done through a Failure Mode Effects and Criticality Analysis.

Currently there are sufficient processes in place to monitor road pavements and bridges to ascertain the renewal programme required.

8.4 Outcome of the Risk Assessment

8.4.1 Risk Identification and Management (Risk Register)

This section outlines the risks to the Council's roading network, and the approach to their management, that will be used, and developed further, by the Council to:

- Ensure that asset failure modes are identified.
- Determine the level of acceptable risk for different situations.
- Identify critical assets.
- Identify and quantify the consequences of failure.
- Avoid or mitigate risks.

The Risk Register follows. It will be extended and altered in the next AMP cycle by:

- Applying the Council's Risk Policy framework to the Risk Register, to align with the whole-of-organisation practices being developed;
- Including new and revised items and risks as part of the Council's process of continual Asset Management improvement; and
- Re-rating or even deleting risk items which are no longer needing to be managed as a result of successful avoidance and removal from Transportation service delivery.

The following sections summarise the principal sources of risk identified in the risk register that the Council faces in managing, operating and owning a road network. The top risks are then discussed further in subsequent sections.

Risk register follows (these pages have been formatted so two A3 pages can be viewed together)

1. Planning Risks
2. Management Risks
3. Delivery Risks
4. Physical Asset Risks

Assessment notes: Items with a likelihood or consequence of 2 or less are not assessed further.
Effectiveness and implementation of existing controls are shown: Green – acceptable, Orange Monitor, Red - Manage as per further analysis

Table 8.4: Planning Risk

Planning Risk				Gross Risk						
									Green - acceptable Orange Monitor Red - Manage (see further analysis)	
Ref #	The Risk	Likelihood	Consequence	Total	What can happen (Event)	How can it happen	What can happen (consequences)	Identify Existing Controls	Effectiveness and implementation of existing controls (Red/Orange/Green)	Who is responsible?
10	Insufficient management of traffic demand - e.g. increased congestion leads to higher loading time and reduces life of roads; inability to provide balance between the needs of commuters and local short-trip users	5	4	20	Demand beyond road capacity	Inadequate intersection controls	Delays and crashes	Model demonstrating demand and interventions	12	Senior Management
15	Extreme natural hazards - e.g. earthquake/volcano/tsunami causing damage to assets and/or hindering community growth	4	5	20	Loss of access and connectivity on District Roads	Natural disasters i.e. earthquake can make roads unsafe to travel on	Traffic comes to a standstill	Building resilience into roading network	10	Senior Management
7	Risks associated with council-owned roads and bridges on private land - e.g. council-owned bridges and walls on private property/privately owned bridges and walls on council property; unknown ownership, reliance on private structures	4	4	16	Ability to assess the condition and performance of council asset may be compromised because asset is on private property	Breakdown in relationship with private land owners	Inability to access council assets	Good working relationship with private land owners	8	Senior Management
16	Moderate natural hazards - e.g. landslip/major storm event/heatwave causing damage to assets and/or hindering community growth	4	4	16	Natural hazards can stop "business as usual"	Global warming	Loss of access to key infrastructure	Having a disaster management plan	8	Senior Management
17	Dust nuisance - dust settling on adjacent properties, resulting in health issues for residents, negative environmental effects, and/or poor image because of unsealed roads or roadworks	5	2	10	Use of unsealed roads by heavy vehicles can cause dust on properties	Increase traffic volumes	Health hazard, lost of amenity	Having a process that looks to seal roads that may cause a nuisance to the public	6	Mark Chamberlain
4	Insufficient business continuity planning for disruptive events	3	4	12	Council is unable to provide leadership in these situations	Loss of communications, ICT failure	Inefficient response	Process and procedures that consider these eventualities	4	Senior Management
13	Lack of transport alternatives - e.g. cycleways and walkways	3	3	9	Overreliance on vehicles as primary transport mode	Insufficient funding for walking and cycling	Active modes are discouraged	Requirement in Annual Report for delivery of walking and cycling facilities	6	Transport Asset Planner
1	Inadequate asset management/infrastructure strategy planning - e.g. not up to date; process and output are of insufficient quality	2	4	8	Council is not keeping up to date with strategy planning - relying on reactive responses instead	Too much going on	Increased risk associated with transportation	Having consultants look through council processes	0	Senior Management
2	Non-compliance with legislation and legal requirements - inability or failure to comply with consents, statutes and national standards e.g. OSH requirements; inadequate signage	2	4	8	Council is unable to ensure that the roads under its stewardship are up to standard	Mistakes occur due to inadequate resourcing	Council is liable for damages	Skilled staff are responsible for ensuring all regulatory requirements are met	0	Senior Management
5	Ineffective strategy planning (internal council) - e.g. lack of integration between the different arms of the council; pursuing objectives that are at odds with each other; causing council-wide issues or funding issues	2	4	8	Unsynch planning can result in unnecessary work being done by different groups in Council	Lack of communication between different groups/departments in council	Project delivery does not occur on time, at cost	Meetings involving different stakeholders occur regularly to ensure that everyone receives information they need to know	4	Senior Management
6	Ineffective input into regional strategy planning - results in reduced funding available to council, extra requirements, clashing objectives	2	4	8	Strategic input by SDC to the RLTP is ineffective	Poor evidence to support SDC's perspectives	Projects requested by council are not approved	Trained staff are responsible for input into the RLTP process	0	Senior Management
8	Underestimating the effects of climate change - inadequate council readiness, resulting in e.g. encroachment of sea onto roads; consecutive droughts causing subsidence; under capacity of network	2	4	8	Underestimating climate change may mean that council is unprepared for potential consequences arising from droughts and rising sea levels	Council inaction may mean that strategies like finding alternatives to coastal routes and delaying with potential subsidence of roads may not occur	In both situations, flooding can occur across key routes in Selwyn District	Having a plan that deals with the potential implications of climate change	0	Senior Management
18	Hazardous materials - e.g. leakage from vehicle damaged in an accident or with a slow leak; bitumen spills - effects on stormwater	2	3	6						
19	Surface water contamination during normal operation of the network; lack of controls causing environmental impacts	2	3	6						
9	Overestimating the effects of climate change - resulting in conservative design and excessive use of funds	1	4	4	Overestimating climate change may mean that council is over prepared for potential consequences arising from droughts and rising sea levels	Council action may mean that strategies like finding alternatives to coastal routes and dealing with potential subsidence of the roads may be gold plated	Financial over-commitment may mean that council is unable to progress other important projects	Having a plan that deals with the potential implications of climate change	0	Senior Management
11	Inappropriate number of car-parking facilities on the street - under-provision, or over-provision	2	2	4						
12	Inappropriate number of car-parking facilities off the street - including car parks for the disabled	2	2	4						
3	Inability to comply with council's own standards - e.g. not meeting benchmarks or milestones set by council	1	3	3						
14	Poorly defined levels of service - affecting community expectations; increased costs; inferior assets and services	1	2	2						

Planning Risks (Continued)

Net Risk									
Analysis 1	**Analysis 2**	**Analysis 3**							
Likelihood	**Consequences**	**Level of risk**	**Risk Priority**	**Treat Risk (Y/N)**	**Treatment option**	**Who is responsible for treatment?**	**Residual risk**	**Monitoring**	**Who is responsible for monitoring?**
2	4	8	2	N					
2	5	10	1	Y	Prepare Resilience/Emergency Preparedness Plan	Asset Manager Transportation	5	Y	Senior Management
2	4	8	2	N					
2	4	8	2	N					
2	2	4							
2	4	8	2	N					
1	3	3		N					
2	4	8	2	N					
2	4	8	2	N					
1	4	4	3	N					
2	4	8	2	N					
2	4	8	2	N					
1	4	4							

Table 8.5: Management Risks

Planning Risk				Gross Risk						
									Green - acceptable Orange Monitor Red - Manage (see further analysis)	
Ref #	**The Risk**	**Likelihood**	**Consequence**	**Total**	**What can happen (Event)**	**How can it happen**	**What can happen (consequences)**	**Identify Existing Controls**	**Effectiveness and implementation of existing controls (Red/Orange/Green)**	**Who is responsible?**
7	Insufficient technology - inability to track technology, engineering developments/techniques, local and national trends, and to utilise these where relevant			0						
4	External economic influences - eg. cost escalation of oil/road materials/ quality aggregate - economic viability and sustainability	4	4	16	New roads will not be built and existing roads may not be able to be maintained	Cost of materials become too high for Council to be able to afford building and maintaining roads in the District	Only strategic roads will be maintained. Safety and access issues will happen	Central Government will provide extraordinary funding	4	Senior Management
5	Inability to utilise funding options - both internal and external, eg. failure to acquire external subsidies/not applying for funding on time/not identifying areas where funding is required, leading to inability to maintain levels of service	4	4	16	As above	As above	LOS experienced by road users drop	Ensuring that SDC has an enduring working partnership with NZTA	4	Senior Management
2	Loss of system knowledge - eg. inability to retain knowledge, loss of institutional knowledge; insufficient systems in place to manage data/information, especially regarding asset performance and condition; IT failure, or inability to scope IT priorities	3	4	12	Key personnel change	Change in life circumstance of key personnel	Loss of experience may mean lost opportunities and time as replacement catches up.	Having an up to date Activity Management Plan that documents processes and procedures that could be referred to were this situation to occur	4	Senior Management
6	Diminishing funding allocation - eg. reduced contribution from subsidies/property rates/taxes/development charges, or a change of roading status, resulting in an inability to maintain levels of service	4	3	12	Insufficient finances to finance LTP projects	Lack of growth, economic decline etc.	Projects in the LTP may not be completed	Risk analysis is undertaken to ensure LTP is achievable and affordable	9	Management
8	Lack of political alignment - eg. inability of elected members to fulfil roles and responsibilities, or a disregard for community/staff views	3	4	12	Elected representa6ws may not fulfil their roles and responsibilities.	Different visions of where the district should be heading and inadequate opportunities for residents to input into Council processes	Council decision making comes to a standstill	Good communication between elected representatives. Consensus seeking attitude	4	Senior Management
1	Lack of staff resources - eg. inability to attract key staff and/or retain skilled staff	3	3	9	Skills shortage may cause skilled staff to leave Council	Skilled staff may want a change in workplace	Loss of institutional knowledge	HR has strategies to retain skilled staff	0	Senior Management
9	Handover of low-quality assets from property developers or council	3	3	9	Property developers m ay hand over assets not up to standard	Rushed jobs may occur in order to satisfy tight timeframes	Assets may degrade after coming into Council ownership. Council will have to pick up the cost	Having checks on adequacy of assets before handover	6	Development Engineer
10	Shortage of local contractors and consultants	3	3	9	Council may not have access to consultants and contractors to assist with Council workstreams	Economic boom or Council is seen as not being a suitable client	Projects do not get delivered	Maintain good relationship with consultants and contactors. Review procurement strategy regularly	3	Management
3	Insufficient technology - inability to track technology, engineering developments/techniques and local and national trends, and to utilise these where relevant	2	2	4						
11	Inadequate event management	2	2	4						

Management Risks (Continued)

Net Risk									
Analysis 1	Analysis 2	Analysis 3							
Likelihood	Consequences	Level of risk	Risk Priority	Treat Risk (Y/N)	Treatment option	Who is responsible for treatment?	Residual risk	Monitoring	Who is responsible for monitoring?
3	4	12	1	N					
3	4	12	1	Y	1. Prepare Capital Programme Management Process 2. Manage relationship with funding partners	Asset Manager Transportation	8	y	Senior Management
2	4	8	3	N					
1	3	3							
2	4	8	3	N					
3	3	9	2	Y	Ensure corporate processes are appropriate	Human Resources	6	Y	Senior Management
1	3	3							
2	3	6							

Table 8.6: Delivery Risk

Planning Risk				Gross Risk					Green - acceptable Orange Monitor Red - Manage (see further analysis)	
Ref #	The Risk	Likelihood	Consequence	Total	What can happen (Event)	How can it happen	What can happen (consequences)	Identify Existing Controls	Effectiveness and implementation of existing controls (Red/Orange/Green)	Who is responsible?
2	Inadequate portfolio management- failure to deliver on commitments because of over/under-spending of budgets, or deferring transport/roading projects	3	5	15	Inadequate management (including financial) leads to non-delivery of projects	Insufficient resource to deal with growth	Project delivery will be delayed and possible escalation in project cost. Unhappy ratepayers	Identifying areas of risk and mitigating risk	5	Senior Management
1	Inadequate project management- eg. projects inadequately scoped, budgeted, managed, documented, and reviewed/inadequate consultation with owners/resource consent issues, resulting in excess time and costs of image and other impacts	3	4	12	As above	As above	As above	As above	8	Senior Management
4	Inadequate capital works contract management - poor contractor performance resulting in unnecessary or excessive costs and/or insufficient output or quality	3	4	12	As above	As above	As above	As above	0	Senior Management
5	Non-compliance with legislation and legal requirements - inability or failure to comply with consents, statute and national standards e.g. increased OSH requirements, inadequate signage	2	5	10	Legislative and regulatory requirements change over time. SDC may not be up to date with requirements	Not keeping updated with new requirements	Legal action could be actioned against SDC for non-compliance	Provision of personnel to ensure that these requirements are met	5	Senior Management
6	Inability to comply with council's own standards -not meeting benchmarks or milestones set by council	3	3	9	Council is unable to meet the requirements it sets	Poor work quality and/or lack of resource	Danger to public	Ensuring that Council can deliver on its obligations prior to agreeing to "things"	3	Senior Management
9	Handover of low quality assets - from property developers or council	3	3	9	Council receives assets that have lower than expected lifecycles	Inadequate assessment of asset prior to "vesting"	Council is responsible for bringing asset up to standard	Skilled staff signing off on vested assets	6	Development Engineer
10	Shortage of local contractors and consultants	3	3	9	Loss of resource to assist with Council projects	Economic boom	Project delivery will be delayed	Building good relationship with consultants and contractors	6	Senior Management
3	Inadequate maintenance contract management - poor contractor performance resulting in unnecessary or excessive costs and/or insufficient output or quality	2	3	6						
7	Service level agreements between transport/roading and other parties (internal or external) not met, or non-existent - inadequate service provided to, or by, other activities (e.g. internal business units, regulatory departments)	2	3	6						
8	Unsatisfactory working relationships with Utilities (e.g. power, telecommunications, council water and waste) - causing delays to projects and negative impacts on service levels/coordinating work programmes.	2	3	6						
14	Inadequate procurement practices - not using optimal procurement options, resulting in e.g. cost increases/lost staff time/delays	2	3	6						
11	Inadequate event management	2	2	4						
12	Ineffective enforcement measures- e.g. of car parking, unauthorised vehicles using restricted lanes	2	2	4						
13	Inadequate public relations management-resulting in public misunderstanding of infrastructure problems, projects and programmes	2	2	4						

Delivery Risks (Continued)

Net Risk									
Analysis 1	Analysis 2	Analysis 3							
Likelihood	Consequences	Level of risk	Risk Priority	Treat Risk (Y/N)	Treatment option	Who is responsible for treatment?	Residual risk	Monitoring	Who is responsible for monitoring?
2	5	10	2	Y	Prepare Capital Programme Maintenance Process	Asset Manager Transportation	8	Y	Senior Management
1	4	4	5	N					
3	4	12	1	Y	Prepare Capital Programme Maintenance Process	Asset Manager Transportation	8	Y	Senior Management
1	5	5	4	N					
2	3	6	3	N					
1	3	3							
1	3	3							

Table 8.7: Planning Risks

Planning Risk				Gross Risk						
									Green - acceptable Orange Monitor Red - Manage (see further analysis)	
Ref #	The Risk	Likelihood	Consequence	Total	What can happen (Event)	How can it happen	What can happen (consequences)	Identify Existing Controls	Effectiveness and implementation of existing controls (Red/Orange/Green)	Who is responsible?
21	Car parks: Inappropriate number of car-parking faculties on the street			0						
22	Car parks: Inappropriate number of car-parking facilities off the street — Including car parks for the disabled			0						
7	Roads/pavements: Ice/snow on roads —resulting In unsafe operating conditions (loss-of-control accidents)	5	4	20	Traffic accidents can occur due to slippery road	Drivers may misjudge conditions and assume that no danger exist in driving "normally"	Injuries and fatalities at intersections and blind spots	Contractors have an action plan to plow etc road. Adequate signage exist to warn motorist about road condition	12	Senior Management
8	Roads/pavements: Road-user conflicts —Impacts due to conflict between different user types e.g. cyclists In busways/pedestrians on roads	3	5	15	Collisions could occur from drivers not being attentive to the road environment	Road users may not anticipate other road users in proximity and travel in a way that causes a collision	Injuries and fatalities	Use of cycle lane, road safety campaigns and engineering design to minimise the risk	10	Senior Management
13	Signage: Inadequate signage/markings causing accident/damage —noncompliant to standards or missing because of e.g.. vandalism, deterioration (Includes sight rails, chevrons, edge-marker posts, bridge-end markers, culvert markers)	3	4	12	Non compliant signage can confuse drivers. Lack of warning signage can mean that drivers drive in a way that they wouldn't if warned	Lack of skilled staff, insufficient audits to determine whether signage is up to standard, vandalism	Injuries and fatalities	HR and Managers monitoring the well-being of employees	8	Senior Management
27	Traffic signals/controls: Power outage causing delays and potential accidents	3	4	12	Traffic lights do not work can lead to vehicles making the wrong decision at intersections	Drivers may misunderstand the right hand rule at the intersection and assume they have right of way. Indecision can also lead to collisions	Injuries and fatalities	Backup generators to provide electricity to key traffic signals. There may not be many signalised intersections in Selwyn	8	Senior Management
16	Bridges and structures: Wall failure resulting from a natural hazard (e.g. landslide/undermining) or vehicle Impact, affecting accessibility	2	5	10	Bridge cannot be used by general traffic. Possible entrapment	Structure failure can block entrance/exit of bridge	Injuries and fatalities	Having audits on the state of the bridge. Ensuring that there is resilience built in the system i.e. another bridge in the vicinity	5	Senior Management
17	Bridges and structures: Bridge collapse/damage/deterioration/erosion/blockage — affecting accessibility, safety (but excluding catastrophic events)	2	5	10	, poor design and construction of the bridge could contribute to this event	Lack of ongoing inspection and maintenance of the bridge	Traffic delay as vehicles are unable to take the most direct route to their destinations	Having maintenance contract that specify bridge will be inspected and maintained according to best practice	5	Senior Management
5	Roads/pavements: Low-lying road inundated by floods during heavy-rainfall events	3	3	9	Rainfall can cause the water level to be higher than the road	Traffic, especially cyclist, pedestrians and some cars maybe unable to use the road. Traffic maybe stuck in the flooded areas	Injuries, fatalities and disruption of journey	Building resilience into the roading system so that an alternative exists to the low lying road	6	Mark Chamberlain
15	Drainage: Flooding affecting roads —e.g. Inadequate drainage/poor location/blocked drainage assets, causing inaccessibility or unsafe driving conditions	3	3	9	Lack of drainage can mean that water is not drained properly. Roads can become flooded with the excess water	It can happen when drains are blocked due to sediment or because roads are incorrectly designed/built	Disruption to journey	Appropriate drainage systems need s to be included in the road carriageway. Audits need to occur to ensure any issue with drainage is picked up	6	Mark Chamberlain
23	Car parks: Inadequate quality of car parks — e.g. signposting/design in regards to national standards (with reference to the national standard —Manual of traffic signs and markings (MOTSAM) (NZTA2009)	3	3	9	Carparks can be marked incorrectly i.e. too small or too big. They can be designed incorrectly so that if carpark is full, no cars are able to get in or out	Carparks that do not meet District Plan requirements	Vehicles may not have enough room to manoeuvre within the car park. Vehicle doors may not be able to be opened	Where applicable, ensuring parking meets district plan requirements is part of the resource consent requirements	6	Mark Chamberlain
24	Public transport: Lack of bus shelters — resulting in reduced patronage, people exposed to the weather	3	3	9	Well frequented bus stops may not have the infrastructure i.e. bus shelters to protect commuters from weather elements	Insufficient PT infrastructure funds and/or slow service delivery may hold up needed infrastructure	Public transport may lose its appeal	Close collaboration with ECAN and PT users to determine what infrastructure can be provided to encourage PT use	3	Transportation Asset Planner
25	Public transport: Lack of quality bus shelters — resulting In reduced patronage, people exposed to the weather	3	3	9	As above	As above	As above	As above	3	Transportation Asset Planner
1	All assets: Inadequate condition/performance assessments — lack of reliable data for renewals/replacements and valuations	2	4	8	Information on assets maybe inaccurate	Incorrect data entry, wrong assessment methodology used by engineers	Corporate maybe using incorrect valuation numbers	Using respected consultants i.e. BECA, Waugh and employing ski9lled staff in Council to ensure the integrity of data and assessment process	0	Senior Management
19	Bridges and structures: Structure damage from overloading — causing faster deterioration of bridges/culverts/structures	2	4	8	Heavy vehicles on structures can result in more rapid structure deterioration	Heavier weights can accelerate cracking/breakdown of structure	Catastrophic failure can occur to the structure as cracking may result in it being unable to carry normal vehicle loads	Proper modelling of bridge and on-going inspections to ensure the integrity of the structure	0	Senior Management
2	All assets: Damage to Infrastructure through vandalism	3	2	6						
4	Roads/pavements: Inadequate road maintenance — e.g. substandard surfaces resulting In higher long-term costs and inefficient/unsafe operating conditions (loss-of-control accidents, potholing, stone loss etc.).	2	3	6						
9	Streetlights: Inadequate street lighting — resulting In crime, safety considerations	3	2	6						
12	Footpaths/accessways: Inadequate accessibility — for physically and visually challenged persons, wheelchairs, strollers, walkers, prams, mobility scooters (Including lack of footpaths, thus limiting accessibility)	3	2	6						

Planning Risks (Continued)

Net Risk									
Analysis 1	Analysis 2	Analysis 3							
Likelihood	Consequences	Level of risk	Risk Priority	Treat Risk (Y/N)	Treatment option	Who is responsible for treatment?	Residual risk	Monitoring	Who is responsible for monitoring?
2	4	8	1	Y	Prepare Resilience/Emergency Preparedness Plan	Asset Manager Transportation	4	Y	Senior Management
1	5	5	3	N					
1	4	4	4	N					
1	4	4	4	N					
1	5	5	3	N					
1	5	5	3	N					
1	3	3							
1	3	3							
1	3	3							
2	3	6	2	N					
2	3	6	2	N					
2	4	8	1	Y	Review programme as part of RAMM/dTIMS Contract	Asset Manager Transportation	4	Y	Senior Management
2	4	8	1	Y	Review programme as part of RAMM/dTIMS Contract	Asset Manager Transportation	8	Y	Senior Management

Table 8.5: Physical Asset Risk (continued)

Planning Risk				Gross Risk						
									Green - acceptable Orange Monitor Red - Manage (see further analysis)	
Ref #	**The Risk**	**Likelihood**	**Consequence**	**Total**	**What can happen (Event)**	**How can it happen**	**What can happen (consequences)**	**Identify Existing Controls**	**Effectiveness and implementation of existing controls (Red/Orange/Green)**	**Who is responsible?**
3	Roads/pavements: Inadequate road design — eg. substandard geometry/surfaces/marking resulting in inefficient or unsafe operating conditions (loss-of-control accidents); road pavement not inadequately designed for ADT	1	4	4	Accidents may occur on these roads from vehicles assuming road environment is "standard" instead of "poor"	Absence of appropriate warning signs may cause drivers to assume no extra caution is needed when driving around bends etc.	Vehicles may experience accidents	Capable consultants/internal staff responsible for designing roads. Roads are checked to ensure they are up to standard	0	Senior Management
6	Roads/pavements: Loss of amenity and visibility caused by roadside vegetation — e.g. spread of noxious weeds and debris within the road reserve; debris blocking stormwater drains	2	2	4						
14	Guard rails/medians: Guard rails/medians damaged and/or missing	1	3	3						
18	Bridges and structures: Damage to services on structures causing eg. loss of water supply/electricity/telecommunications	1	4	4	Services on structures can be damaged	Vandalism or accidents can sever services no structures	Loss of services	Having the services protected or embedded	0	Senior Management
20	Bridges and structures: Vehicle, pedestrians or objects fall (or objects are thrown) from bridge	1	3	3						
28	Traffic signals/controls: Inadequate phasing of signals	1	4	4	Intersection may not be operating at the maximum efficiency possible	Signals are not integrated within the overall network	Unnecessary delays occur on the roading network	The two traffic signals in Rolleston allow traffic on and off the State Highway. From NZTA's perspective, these two signals are very important and provides an impetus to guarantee that these signals operate efficiently	0	Senior Management
10	Streetlights: Damage to streetlights — due to vandalism and/or vehicle damage, resulting in crime, replacement costs and safety considerations	1	3	3						
11	Footpaths/accessways: Inadequate footpath quality — because of e.g. poor design/construction/materials/funding/utilities reinstatements, resulting in pedestrian slips/falls, and inaccessibility	1	3	3						
26	Cycleways: Inadequate cycleway quality —e.g. poor design/construction/materials/ funding/utilities reinstatement, resulting in accidents and inaccessibility	1	3	3						

Net Risk									
Analysis 1	Analysis 2	Analysis 3							
Likelihood	Consequences	Level of risk	Risk Priority	Treat Risk (Y/N)	Treatment option	Who is responsible for treatment?	Residual risk	Monitoring	Who is responsible for monitoring?
1	4	4							
1	4	4							
1	4	4							

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8.4.2 Planning Risk

The top planning risk factors are identified and discussed as follows.

Note Gross Risk is as per SDC framework

Insufficient Management of Traffic Demand

Gross Risk: Catastrophic, existing Controls Acceptable:, Additional Risk Treatment – Not required

The significant population growth and the impact on the road network is discussed in the demand section of this plan. A particular risk that results from this growth is the congestions at the intersections that in turn causes the likely consequences of time delays to road users and additional loading time on pavements and surfaces, causing accelerated deterioration. This risk is currently being managed through the use of traffic and intersection modelling to optimise the setting of traffic controls and signals. In extreme cases, there is a process of identifying intersection upgrades and securing funding for those upgrades. No further risk mitigation measures are required for this risk.

An additional risk is the significant increase of truck loads (particularly 50MAX and HPMVs) and its impact on the deterioration of pavements. This is discussed in the lifecycle section.

Planning Risk Dealing with Major Natural Hazards

Gross Risk: Catastrophic, existing Controls Acceptable:, Additional Risk Treatment – Not required

Given its geographic location, Selwyn DC has significant exposure to most natural hazard events. Given the significance of this risk and the complexities in dealing with, it warrants a focus on councils' approach. Section 0 discusses the council's approach to resilience, and 8.10 discusses asset criticality.

Risks Related to Moderate Natural Events

Gross Risk: Catastrophic, existing Controls Acceptable:, Additional Risk Treatment – Not required

Some minor natural events may cause minor or isolated damage to parts of the road network. Examples include minor slips blocking parts of the network, or washouts of a road in isolated locations. Minor event remedial work is included in maintenance contracts, and these risks are therefore adequately managed through current controls. A large number of such events puts budgets under pressure as funding is from allocated budgets not emergency works.

Risks Associated with Councils' Roading Asset on Private Land

Gross Risk: Catastrophic, existing Controls Acceptable:, Additional Risk Treatment – Not required

The need to regularly inspect and assess the conditions of the council's asset free access to these structures are needed. With a potential breakdown in relationships with land-owners, access may become an issue. The potential risk is currently managed well through ensuring positive relationships with land-owners are maintained, and progressive legalisation of roads where required.

Inadequate asset management/infrastructure strategy planning

Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment: Required

Planning and management is compromised where data is poor or where there is insufficient resourcing/priority in place. Data needs to be kept up to date and processes within Council and with developers and suppliers need to be reliable. Reorganisation within the Council ensures that sufficient capacity and capability are maintained in-house, and more collaborative approaches have been established.

Ineffective input into regional strategy planning

Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment: Required
Joined up planning and collaboration with NZTA Highways and other road controlling authorities (particularly Greater Christchurch Partners) is needed to advance initiatives and avoid conflict.
Compliance with Regional and National Land Transport Plan processes are essential to secure co-funding from NZTA.
Clarification of requirements and resourcing is needed to ensure this happens.

Non-compliance with legislation and legal requirements
Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment: Required
Any inability or failure to comply with consents, statutes and national standards e.g. OSH requirements; inadequate signage have a range of consequences for Council.
Establishing quality systems to document and inform staff and suppliers is needed.

Underestimating the effects of climate change
Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment: Required
While Council has undertaken research to understand the effects of climate change, work is required to translate this into management of the roading network. Decisions around encroachment of sea onto roads, coastal erosion, low lying roads, and drainage systems need to be cognisant of the changing environment. Changing groundwater conditions from prolonged drought can also be the cause of subsidence.
It is proposed that decision making frameworks be adapted to include climate change impacts.

8.4.3 Management Risk

External Economic Influences
Gross Risk: Catastrophic, existing Controls Acceptable:, Additional Risk Treatment – Not Required
The experience of the COVID-19 has shown how quickly the global economy could change and how that impacts on the local economy. There are, therefore, a number of risks associated with the economy that is well beyond the means for SDC to deal with. For example, the Transportation sector's exposure to high-cost fluctuations of bitumen is a particular risk factor. With extreme cost increases of material, the length of roads being sealed, or construction could be significantly affected, thus having a roll-on effect on the level of service provided to the road users. Given Councils limited means of mitigating this risk, no further controls are considered, and the current status of depending on the central government to cover these types of threats are maintained.

Inability to Fully Utilise Funding Options
Gross Risk: Catastrophic, existing Controls Acceptable:, Additional Risk Treatment – Not Required
Given the mixed investment into Transportation from NZTA Waka Kotahi and internal allocations (SDC rating base), there is always a risk of not fully obtaining the required or requested funding. These risks could be further broken down into the following categories:

1) Knowing the appropriate investment needs to maintain the target level of service;
2) Developing a compelling business case to motivate the investment need;
3) Maintaining the trusting partnering relationship with the investors.

The asset management planning tools and processes SDDC uses, aimed at minimising associated risk with knowing the right level of investment and using the analysis as evidence for the investment requests. The asset management improvement programme also targets to continuously use new technology and knowledge to better estimate and demonstrate investment needs. SDC should also

invest time in maintaining and improve the relationship with the funder's officials, keeping them close to the needs of the region for maintaining the road network to an appropriate level of service.

Business Continuity: Loss of System Knowledge

Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment – Not Required

All councils face a significant risk of losing systems knowledge that result from staff leaving, insufficient systems that manage data and information regarding assets and asset performance. The business continuity is directly threatened by risk as valuable lessons from the past is lost. The efficiency of the organisation is hampered by new staff and systems lag time to restore lost knowledge. Existing mitigation measures for this risk include the procedures and practice documentation such as the Activity Management Plan. The Council also have a practice of supplementing internal staff with external resources to assist with documentation etc. Therefore, when a key staff member leaves, there is a temporary redundancy until new staff are onboard. Furthermore, most database and management systems now function in the cloud providing additional security and on-going access to the information despite potential council facilities being impacted through natural disasters.

Lack of Political Alignment

Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment: Required

There is an expected risk that the technical strategy and vision of elected members differ for the road network and investment strategy. The reality is that elective members often have a 3 to 6 years vision that corresponds to election cycles. For example, there is an issue of national vs local objectives being a key challenge for SDC. Local initiatives may not always receive national subsidy leading to high level of unsubsidised work being undertaken. The road asset management planning horizon ranges between 3 years for the Waka Kotahi funding application, 10 years for the asset management plan and up to 30 years for the strategic asset management plan. Should council members make uninformed short-term decisions, it may compromise the long-term outcomes expected of the road network. The mitigation for this risk is through having robust evidence that is presented to council to get buy-in for the technical asset management strategy for the road network. No further controls were identified for this risk, but monitoring of issues and trends is appropriate.

8.4.4 Delivery Risk

Inadequate Portfolio and Capital Works Contract Management

Gross Risk: Catastrophic, existing Controls Acceptable, Additional Risk Treatment – Not Required

Successful portfolio management depends on several factors that significantly impact the delivery of the works programme within planning horizons, including on-time production of designs and procurement strategy and documents. There are also external factors such as contractors' capabilities to mobilise their teams on time and progress the work as per the portfolio scheduling. The likelihood of any of these factors impacting the portfolio programme is almost a certainty, and sufficient mitigation measures should therefore be in place. It has been identified that current processes do not necessary manages this risk adequately, and a more formal capital programme management system (project pipeline management) should be adopted.

With the increasing complexity of the programme and size, there is more required to understand the need needs from a programme management perspective. For example, the current council procurement strategy follows a multi-sectorial approach. It provides opportunities for more integrated management of programme delivery.

Inadequate capital works contract management

Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment: Required

It is vital that works are fit for purpose. Inappropriate designs or poor contractor performance can result in unnecessary or excessive costs and/or insufficient output or quality.
Processes are in place to support staff and there are always opportunities for these to be improved.

8.4.5 Physical Asset Risk

Minor to Major Natural Hazards roads and bridges
Gross Risk: Catastrophic, existing Controls Acceptable, Additional Risk Treatment – Not Required
Natural Hazards have been identified as the most significant physical infrastructure risk. For minor climatic events, such as Ice/snow on roads could cause unsafe operating environments for the motorists. Given that Natural Hazard risks occur across all risk categories, it is discussed in more detail in Section 8.4 that details the council's approach to resilience. This issue is of such significance, it is anticipated that a new process will be developed to deal with resilience in a more holistic manner.

Road User Types Conflicts
Gross Risk: Catastrophic, existing Controls Acceptable, Additional Risk Treatment – Not Required
Council has a responsibility to provide for all transport users – ie - mode choice for communities with appropriate provision of active and sustainable travel options. SDC supports alternative modes noting the risk is that the uptake of alternative travel modes happens faster than making some parts of the network more active travel model friendly. This has the potential of causing conflicts between travel modes having to share roadways, traditionally mostly used with motor vehicles. These conflicts could result in reduced user satisfaction and could also result in crashes and injuries. Council has a programme of developing cycleways and adjusting road design standard to have greater separation between travel modes. No further controls for these risks are needed.

Insufficient asset condition/performance information
Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment: Required
This applies to all assets, as inadequate condition/performance assessments result in lack of reliable data for renewals/replacements and valuations. Information should be collected through structured processes to support the intimate knowledge of staff and contractors.
The Te Ringa Maimoa Data Quality Report provides a useful assessment of where improvements are required, and council should establish a process to address issues identified.

Structure damage from overloading
Gross Risk: Significant, Existing Controls: Not acceptable, Additional Risk Treatment: Required
Structural damage from overloading of bridges and structures can occur where overloading occurs. Bridges have weight limits posted, but there is minimal enforcement. Remote locations and bridges with very low load capacities are prone to overloading, particularly by agricultural machinery.
Repeated incidents are likely to cause faster deterioration of bridges/culverts/structures.
A greater level of monitoring is required if there are particular assets that are not scheduled for replacement/upgrading to ascertain overloading and follow up on illegal use.

8.5 Resilience Approach to Natural Hazards

Resilience (and resilient infrastructure) is based on a design philosophy which acknowledges that failure will occur. Resilience requires early detection and recovery, but not necessarily re-establishing a failed system. Resilience is about the ability to plan and prepare for adverse events, the ability to absorb the impact and recover quickly, and to support a community to adapt to a new environment. Adverse events, natural disasters, climate change and the related impacts cannot be avoided and as a result Council has to factor this into our long term planning, civil defence planning and how we determine the most appropriate infrastructure requirements (design and location) moving forward to ensure the community's expectations for safe and reliable services and general wellbeing can be met, a risk minimised.

8.5.1 Context to Natural Hazards: Selwyn District Plan

The District Plan discusses Lifeline Risks under the heading B 3.1 Natural Hazards Issues.
Relevant extracts follow:

Natural Hazards: NH-Overview

A natural hazard is defined in the RMA as "any atmospheric or earth or water related occurrence (including earthquake, tsunami, erosion, volcanic and geothermal activity, landslip, subsidence, sedimentation, wind, drought, fire, or flooding) the action of which adversely affects or may adversely affect human life, property, or other aspects of the environment". Both the Canterbury Regional Policy Statement 2013 (CRPS) and the New Zealand Coastal Policy Statement 2010 (NZCPS) promote a risk-based approach to natural hazard and coastal hazard management.

Council has defined a risk-based approach as:

- *managing risk when there is uncertain or insufficient natural hazard risk information.*
- *managing risk based on the scale of a particular natural hazard event, together with the likelihood of that event occurring and the effects on people and property.*

Council has defined a risk-based approach in this way due to the large geographical spread of the District, with its sparse population and low level of development in some areas, compared with discrete areas of larger populations in its townships. In the larger populated and developed areas the consequences from natural hazards and therefore the risk could be considerably greater. A risk-based approach will enable the focus of the District Plan natural hazard provisions to gravitate towards the areas where there is greatest risk.

The natural hazards managed by this District Plan are:

- *coastal hazards*
- *flood hazards*
- *geotechnical hazards*
- *wildfire hazards.*

General

NH-P1 Avoid new subdivision, use, or development of land in high hazard areas (except for important infrastructure and land transport infrastructure)

NH-P2 Avoid the development or use of land, buildings or structures in high hazard areas for any important infrastructure or land transport infrastructure.

NH-P3 Restrict new subdivision, use or development of land in areas outside high hazard areas but known to be vulnerable to a natural hazard, unless any potential risk of loss of life or damage to property is adequately mitigated.

NH-P4 Natural hazard mitigation works shall consider:

1. *approaches to risk management that reduce the need for physical works and similar engineering interventions;*
2. *the nature of the natural hazard risk and how it might change over at least a 100-year timeframe, including the expected effects of climate change;*
3. *the potential for adverse effects on indigenous biodiversity, Ngāi Tahu cultural values, or sites of historic heritage or geological value;*
4. *identification of and a plan for transition mechanisms and timeframes for moving to more sustainable approaches; and*
5. *the physical works necessary to ensure that the form and location of any structure is designed to minimise adverse effects on the environment.*

NH-P5 When determining if new subdivision, use, or development is appropriate and sustainable in relation to the potential risks from natural hazard events, have particular regard to the effects of climate change.

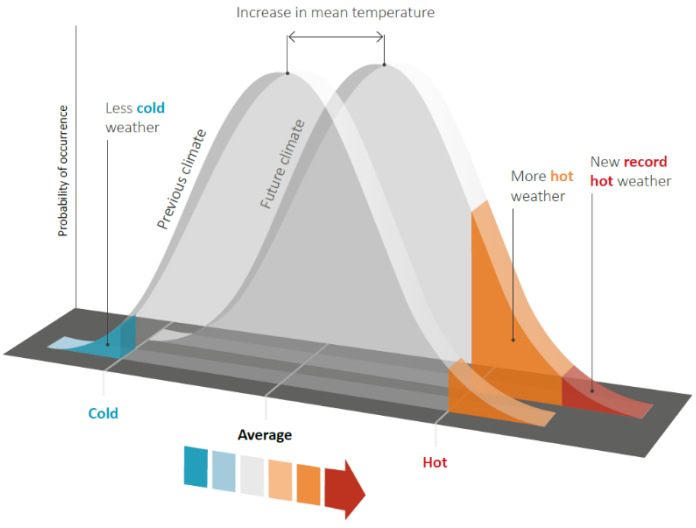
Coastal Hazards

NH-P7 Recognise that hard protection structures may be the only practical means to protect existing important infrastructure and land transport infrastructure against coastal hazards.

NH-P8 Where hard protection structures are considered necessary to protect private assets, avoid their location on public land unless there is significant public or environmental benefit in doing so.

8.5.2 Climate Change Impacts

Climate change impacts on the region are two-fold. As illustrated in the figure climate shifts have two consequences (Source: Royal Society of NZ). Firstly, the extreme ends of the distributions are changing. Ins terms of weather patterns in suggest the increase of extreme events, both in terms of frequency and intensity. For example, rainfall events would occur more frequently, and higher downpours could be expected. Likewise hot and dryer spells in summer would also increase and occur more frequently. Secondly, the mean is also changing, and this is often referred to as the “slow-burning” changes.



Coastal erosion is an example of changes taking a bit longer to manifest into problematic issues. Even though these changes take longer, it is still a risk that the council has to consider and manage. Other issues on roads include increased subgrade moisture conditions and high-temperature impacts on surfacing bitumen. The impact on bitumen is of particular concern given that increased use of bitumen is not ideal from a carbon footprint perspective.

Significant work has been completed in the understanding of climate change in the region. Studies completed by SDC and the Canterbury Regional Councils have provided sufficient potential climatic changes that are translating into risks for the infrastructure services. This section mostly deals with risks related to disaster events such as floods. Long-term and slower environmental changes should in future be investigated and covered within the lifecycle section of the AMP. SDC specific approach to climate change is documented in the SDC Climate Change Policy.

8.5.3 Resilience Approach to Natural Hazards

The previous sections demonstrated the vast number of natural hazards threatening this region. Whereas the likelihood of some events is relatively low, there are others that are almost certain to happen (e.g. floods). For that reason, the council is following a holistic approach to resilience that is covered in this section.

Resilience is the ability of our infrastructure networks to remain as fully functional as possible when subject to a range of potential shocks and stresses, including any resultant disruption to parts of it, and how quickly service recovery can be affected. The figure illustrates the resilience cycle:

Figure: Resilience Cycle to Natural Hazards (Source: Henning)

The figure is split into two parts: the top half includes all the activities that should be considered before an event occurs.

- Steps 1 and 4 refers to the internal capacity of and readiness procedures. This section emphasises the needs for building an increased physical network resilience;
- Step 2 involves all the activities aimed at strengthening the network resilience, including keeping high-risk assets in good condition and undertaking specific maintenance and

operation strategies on specific parts of the network (e.g. providing erosion control on some bridges)

- Step 3 involved all the procedures and planning for response activities as part of civil defence.

The bottom half of the figure includes activities that happen directly following an event, including both the emergency response and the recovery and reconstruction stages. There is an obvious relation between the level of readiness planning and the effectiveness of the response and recovery. This explains the focus of readiness planning as part of the AMP process.

Following any natural hazard event that affects any utility, an assessment to ascertain the extent of damage, intervention required, priority of reinstatement and the resource requirements should be carried out at an early stage. The effects and intervention lists contained in the Plan can be used to ensure all contingencies are considered. The interconnectivity and interdependence between the Transportation as well as other utilities, during and after an event is very important and has been identified in the Plan.

The following indicates the status of the Transportation Activity in the areas of Risk Reduction, Readiness, Response and Recovery.

Table 8.8: Risk Reduction, Readiness, Response and Recovery Status

Activities Required	Description	Status
Risk Reduction	Identifying hazards, describing risks, and taking actions to reduce the probability or consequences of potential events	Future risk assessment and control
Readiness	Planning and preparation required to equip agencies and communities to respond and recover	Future use of the Emergency Management Plans Emergency procedures manual and exercises
Response	Addressing immediate problems after an emergency	Future use of Emergency Management Plans
Recovery	Addressing the long-term rehabilitation of the community	Civil Defence Emergency Management Group

8.5.4 Readiness Planning to Natural Hazards

8.5.4.1 *Target Investment and Policies*

Lifelines and Critical Infrastructure

Investment priority is provided to roads and bridges that are classified as critical according to the lifelines approach. The criticality of an asset reflects the consequence of the asset failing (not the probability). High criticality assets are best defined as assets which have a high consequence of failure (not necessarily a high probability of failure).

Detailed criticality of assets has not been undertaken across the Transportation activity at this stage.

In general the asset hierarchy and bridge network provide a proxy for criticality. The bridges on the state highway network have been considered as the network is treated as an integrated system.

A desktop study undertaken in 2015 is discussed in the bridges portion of the lifecycle management section of this plan. The study included the likely impact of the natural hazards that the District faces along with the current level of bridge performance.

This study revealed:

1. There is generally sufficient redundancy in the network to provide alternative routes when any routes are affected by a specific issue.
2. Alternatives become less convenient where widespread events such as floods occur, and the State Highway network becomes the 'spine' of the network when other 'limbs' are impassable.
3. Fords are typically used as a convenient shortcut, there are alternative routes using bridges available when rivers are high.
4. Snow affects State Highway 73 as well as local roads which are located off the highway. Arrangements to work in combination with the State Highway managers to undertake combined snow clearing is appropriate. The key local road requiring attention within Council's management is Coleridge Road and part of Homestead Road (to avoid isolated residences at Lake Coleridge and the hydro station).
5. The bridge programme has been refined to ensure there is adequate property access for heavy traffic (50MAX/HPMV).

A more thorough assessment is proposed to allow the assets to be clearly identified and then the asset can be managed more proactively to mitigate the risk associated with their failure. This proactive management includes:

- Priorities for undertaking condition assessments.
- Adjusting economic lives with respect to renewal profiles.
- Prioritising/Deferring renewals.
- Prioritising expenditure.
- Operation and maintenance planning.
- Priorities for collecting asset information to the required level of confidence.

Asset Insurance

The earthquakes of September 2010 through to June 2011 have had a significant detrimental effect on all council's ability to obtain insurance for all their assets. The following describes the Councils policy on insurance as of 30th July 2011:

Minor damage is rectified through normal operations and maintenance, while emergency works are eligible for additional funding from NZTA.

This approach is deemed prudent provided Council retains sufficient funds to meet its portion of emergency works and NZTA retains the current approach.

8.5.4.2 *Emergency Planning and Procedures*

The District is subject to a wide range of natural hazards. Several significant natural events have been recorded which have caused damage to property and the environment with no one hazard being the "standard" event. The District has suffered four main events over the last 25 years:

- Snowstorm in 1992.
- Selwyn River flooding in 2003.
- Fires in the High Country.
- 2010 and 2011 Earthquakes.

Through responses to and rebuilding after these events Council has gained considerable experience. It is important that the knowledge gained is captured and integrated into future operations and planning exercises. Lifelines exercises provide an opportunity for such experience to be shared.

Civil Defence Emergency Management

The Civil Defence Emergency Management (CDEM) Act 2002 requires Local Authorities to coordinate Plans, Programmes and Activities related to CDEM across the areas of Risk Reduction, Readiness, Response and Recovery. It also encourages cooperation and joint action within regional groups. Management systems for civil defence emergencies are detailed in the Council's CDEM plan.

A Lifelines Response Plan has been prepared for key Council services including Transportation. The Plan considers natural hazard events including earthquake, flooding, meteorological (snow/wind) and mass movement (land slip), and also takes account of fire and civil disruption events. The principal objectives of the Plan are to:

- Possess a management tool that identifies natural hazards for the transportation activity.
- Identify the consequences of the natural hazards.
- Identify immediate remedial actions.
- Define restoration levels, priorities and issues.
- Identify long term risk management issues.
- Ensure that Emergency Management knowledge is retained within Council.

The Utilities Lifelines Response Plan details the hazards, possible cascading effects and the interventions that may be applicable. It does not consider the effect on any individual community as these will change with the extent of the hazard i.e. the depth and extent of snow and the extent and makeup of that utility i.e. if the water supply has a standby generator.

Natural Hazards — Strategy

The Township Volume of the District Plan uses the following basic strategy to address Natural Hazard issues:

District-wide Natural Hazards

– Minimise loss of life and property damage through Civil Defence.

Localised Natural Hazards

Avoidance and Mitigation

– Identify areas in the District known to be affected in the past by flooding; unstable land; or seismic activity.

– Manage land use activities in these areas, to avoid or mitigate the potential adverse effects of natural hazards.

Response

– Civil Defence to minimise loss of life and damage to property if a natural hazard occurs.

Engineering Solutions

– Some areas have structures or works to reduce the effects of natural hazards, e.g. stopbanks or retaining walls.

– The District Plan has provisions to:

– Allow the operation and maintenance of these activities; and

– Mitigate adverse effects on the environment from establishing these structures or works.

– If the Council chooses to use works or structures to mitigate natural hazards in the future, these will be set out in the Council's Asset Management Plans.

– Building Code Requirements.

The significance of the various hazards to lifelines in a general sense are ranked in the order of the study with earthquake clearly the greatest threat. Flooding is limited in extent within the District. Meteorological hazards also tend to significantly affect limited areas. Snowstorms are historically more significant, but high winds have also caused disruption to infrastructure. Mass movement and coastal hazards may be very significant for the immediate area but are limited to specific areas, and hence their impact is also limited.

Other factors affecting the assessment of natural-event risk include:

- The total population of the District is centred in particular communities
- The Arthur's Pass alpine resort is a very popular tourist attraction and its population can increase dramatically over holiday periods. There are appreciable seismic rock-fall risks at Arthur's Pass
- The Rakaia Huts and Selwyn Huts are popular fishing and recreational areas with a permanent population of approximately 200. This number can also dramatically increase over holiday periods.

8.5.4.3 *Business Continuity*

Business Continuity was tested in the 2010 and 2011 earthquake events with only limited impact on community levels of service.

Business Continuity is a progression of disaster recovery, aimed at allowing an organisation to continue functioning after (and ideally, during) a disaster, rather than simply being able to recover after a disaster. The following plans have been developed to ensure business continuity.

Response Plan - Effects and Intervention for Transportation:

- The principal objectives for the Utilities Lifelines Response Plan associated with Selwyn District Council (Council's) Transportation are:
    - Possess a management tool that identifies natural hazards for the individual utilities.
    - Identify the consequences of the natural hazards.
    - Identify immediate remedial actions.
    - Define restoration levels, priorities and issues.
    - Identify long term risk management issues.
    - Ensure that Emergency Management knowledge is retained within Council.

This document is in the process of being revised and updated.

While roads in the District are affected by snow, there are seldom long delays before they are opened. The high-country roads have heavier and more regular snowfalls with subsequent longer delays but

they serve fewer people who generally have a lesser expectation. The portions of the roading network above the 300m contour line are those usually the worse affected.

Washouts occur infrequently on high country roads. They seldom close the road for long periods and are simply removed or repaired in a short time. There are sites that have washouts occur because of runoff during heavy rain.

There are approximately 49 fords that are maintained on rural roads. The majority are dry, except after heavy rainfall when they usually close the road until the water level recedes and any repairs to the fords are completed. While these cause delays, they are on low traffic volume roads and there usually alternative routes.

In 2007/08 the two remaining fords that could close the Bealey Road Arterial route were replaced with bridges. They were over the Hawkins and Waireka Rivers. This work complemented the construction of the 177m long bridge on Bealey Road across the Selwyn River in 1997/98.

8.6 Risk Approach to Network Events

8.6.1 Context to Network Event Risk Management

By its nature, the operation of the road network includes a number of risks that may impact the safe and efficient operation of the network. These risks may also impact the performance targets of the road network. The detailed network knowledge gained from continual observation and monitoring of the network is the appropriate means of managing most of the events described in this sub-section. This said the associated risks are further reduced by the management measures described under each heading.

8.6.2 Risks Associated with the Condition Performance of the Network

Prioritised replacement of critical or vulnerable assets as part of our regular renewal programmes. We will consider the resilience of the replacement solutions at the design phase recognising an opportunity.

Traffic Loading
The numbers and sizes of vehicles using a road are the two major influences on its condition and the costs of maintaining the desired level of service. Most Council roads carry significantly less than the theoretical limit of around 2,500 – 3,000 veh/day for rural roads in rolling terrain; the figure for flat terrain is significantly higher.

Council has a traffic-counting programme that allows them to keep this matter under review.

Structural Loading
The traffic-counting programme also monitors the proportion of heavy vehicles on representative roads. This monitoring supplements the detailed network knowledge gained from continual observation and monitoring of the network. Significant land-use changes that affect traffic loadings are also monitored in our traffic counting programme, and upgrading is funded as part of the Network and Asset Management work category.

Bridges are protected through regular inspection by appropriately trained and experienced external consultants. Any bridges with reduced capacity have legally enforceable load and/or speed restrictions placed on them under Land Transport Rule 41001 - Vehicle Dimensions and Mass 2002 and its subsequent amendments (HPMV and 50 MAX). These limits are displayed at each bridge, and where appropriate in advance of the bridge at a location where heavy vehicles can turn or have the opportunity to use an alternative route.

Permits for over mass [overweight] vehicles to use Selwyn District Bridges are issued by the Council, where appropriate, after consideration of the effects of the load on each bridge it will cross. A record is kept of each permit issued.

50MAX and HPMV capability is discussed within the bridge lifecycle portion of the AMP, while the following discussion considers the impact at a network risk level.

There are appreciable risks associated with over mass and over-width vehicles using low-capacity bridges in remote rural areas. Large agricultural machinery is a particular source of this risk, with logging and waste management equipment also being significant.

High-risk road and bridge structures have been identified for strengthening as part of the lifecycle planning process in this AMP.

Material Failure

Material failures include deterioration through normal wear and tear. Council carries out regular condition-ratings of all its sealed roads using industry-standard procedures and at intervals accepted as appropriate by Council and Land Transport NZ.

Deterioration modelling is used to assist in forecasting the quantum of pavement and sealed-surfacing renewals works, as discussed in the Lifecycle Management Plans.

The bridge inspections outlined in the Lifecycle Management Plans also assists in monitoring the condition of bridge materials. Core samples are taken from the structural members of timber bridges as appropriate on the recommendation of the experienced bridge inspector.

Metal roads are inspected regularly; grader operators, who are among the most skilled road maintenance workers, provide information on deterioration and non-recurring maintenance needs.

8.6.3 State Highway Detours

Resilience of transport routes is key to response and recovery. Our large grid-like road network means the district is relatively well-placed to withstand long-term disruption, with river crossings remaining the main weak points.

Some crashes and other events on the State Highways in the District can generate the need for traffic diversions onto local roads, subjecting them to volumes and axle loads for which they are not necessarily suited and drivers to unexpected conditions. These circumstances can lead to premature failure of sections of the road and to crashes on the detour route. These risks are managed through a State Highway Detour Policy, which is proposed as a combined project with NZTA.

8.6.4 Risks Associated with Network Operations

Mechanical equipment failure

The only mechanical equipment on the road network relevant to this plan is railway crossing barrier arms. These are the property of the NZ Railways Corporation (OnTrack) and are maintained and inspected by them. Any failures noticed by or reported to the Council are relayed to OnTrack staff urgently.

Electrical failure

On the road network electrical failures affect urban street lighting, and traffic signals are dependent on electric power. Failure of individual lights is managed through the Street Light Maintenance Contract that specifies response times for individual streetlights and groups of failed lights. It also requires periodic electrical inspections of each light fitting. Specific back-up systems are in place for traffic signal power supply.

Council contracts for the supply of energy for lighting its urban streets. The disparate nature of the street-lighting network means that stand-by generation is not practical.

Electronic Failure

The only electronic equipment on the road network relevant to this plan is:

- Railway crossing signalling.
- Railway crossing barrier arm controls.

These are the property of the NZ Railways Corporation (OnTrack) and are maintained and inspected by them. Any failures noticed by or reported to Council are relayed to OnTrack staff urgently. All railway-crossing installations have back-up power supplies capable of operating the systems for at least 24-hours.

Note there is a set of traffic lights at the Rolleston Drive/Main South Road/Hoskyns Road intersection that may be affected because of an electronic failure. However, this is an NZTA asset and therefore an NZTA responsibility.

Vandalism

The most significant risk posed by vandalism is obliteration of warning or regulatory signs, to the extent that their messages are lost, and removal of these signs. Council's maintenance contracts cover reinstatement of signs damaged by vandals but discovery of removed signs is, at times problematic.

Failure of Other Utilities

The extent of, and regular reoccurrence of damage to some bridges by farm tractors could warrant this behaviour being included in the vandalism category.

The installation or maintenance of utilities such as power, telecommunications, water supplies or sewerage in the roadway or road reserve can have significant adverse effects on both the roadway and its users. This is an area covered by a number of different and contradictory acts of Parliament.

The applicable acts depend on the utility in question. The acts are the:

- Telecommunications Act 2001.
- Gas Act 1992.
- Electricity Act 1992.
- The Local Government Act 1974.
- The Utilities Access Act 2010.

Refer 3.2.10.9 for details of implementing the provisions of the Utilities Access Act.

8.7 Risk Approach to Health and Safety

8.7.1 Risk Approach to Road Safety

Council's approach to road safety is discussed in Section 5 of this AMP.

8.7.2 Health and Safety

Council is responsible for providing a safe work environment for its staff and public. A Health and Safety committee is currently being formed and is representative of different departments in Council. Council's Health and Safety procedures are detailed in its Health and Safety Policy. The Policy is a reflection of the Health and Safety in Employment Act 1992.

Council staff, by the nature of their work are exposed to risks outside the office environment that are associated with the Transportation activity. Council provides training in general and specific safety areas as required, with Temporary Traffic Management being a key area.

Council's Contractor has a Health and Safety Officer, who undertakes and maintains a workplace risk register. The Contractors staff have monthly Health and Safety meetings, with a note confirming this included in the Council-Contractor monthly contract performance meetings.

The maintenance contract (Contract 1234, currently being re-tendered) has specific requirements associated with Health and Safety.

8.7.3 Safe Working on Sites

Worksites

The Council has adopted a standard for Temporary Traffic Management at worksites on roads. The Standard consists of:

- The NZTA Code of Practice for Temporary Traffic Management (COPTTM).
- The RCA Forum Local Roads Supplement to COPTTM.

All STMS's have delegated authority, from the Council to approve Traffic Management Plans for Low Volume Roads provided the Plan does not require a special change.

Council requires that all contractors employed on work undertaken on behalf of Council to have in place an effective health and safety system. During the course works, checks are made to ensure that the plans submitted are being adhered to. Additionally, as part of the ONRC performance measures, TTM site audits will be performed by Council staff. This is part of a suite of Safety Performance Measures that Council will have to manage.

8.7.4 Temporary Traffic Management

The procedures for temporary traffic management are described in more detail in Part B of Council's Road Safety Management System. In summary, all work within the road reserve requires the contractor/property owner to inform the Council of the proposed work. A standard service plan request form is used to obtain the details of the work and to inform the contractor/property owner of the requirements for reinstatement, traffic management, etc.

All requests are entered into a database, which also keeps information on traffic management plans. Having the information in a database allows the contractor/property owner to be contacted if there are problems with the reinstatement, which may be many months after the work is done; e.g. subsidence of trenches. The database:

- Records all relevant details of each Traffic Management Plan (TMP) and a folder is kept containing copies of all approved TMPs
- Includes information on requests for service plans, as these requests usually culminate in work that requires an approved TMP. The majority of the contractors that carry out work for the utility companies have generic sign layouts submitted but applications are submitted for each project.

There is no fee for processing the request, but the contractor/property owner is responsible for all costs involved with the work including the reinstatement.

Council uses the NZTA Code of Practice for Temporary Traffic Management (CoPTTM), including the RCA Forum Local Roads Supplement, as the basis for management of traffic at and around worksites. All worksites, whether for Council contracts or for third parties, such as Telecom or adjacent property owners, are required to be controlled by appropriately qualified site traffic management supervisors (STMSs).

Maintenance Sites
Temporary traffic management is carried out under the various maintenance contracts using approved generic plans in accordance with the CoPTTM.
Warrants for temporary speed limits at work sites are and approved as required under the Council's delegated authority.

Construction Sites
Specific temporary traffic management plans are submitted and approved for each of the construction contracts. Temporary speed limit warrants are submitted with the temporary traffic management plans and approved as required.

Third-Party Work Sites in the Road Reserve
Traffic management for work outside of the formal roading contracts is dealt with by engineering staff. This includes traffic management for work by utilities operators, (both underground and overhead),

sewer connections, water connections, roadside mowing, hedge trimming, driveway construction, subdivision construction, cycle and athletic events, parades, street fairs, etc.

Crash-Site Management – Local Roads and State Highways

Periodically the costs of managing a crash site, e.g. debris removal and, additional temporary traffic management, are not met by the emergency services and are not recoverable from those responsible for the crash, and thus default onto the Council. When these costs are met by the Council, they are eligible for financial assistance (subsidy) from the NZTA. As most crashes in the District are on state highways, the call on the Council for this type of involvement is small. Currently no funds are budgeted for this involvement.

The NZTA and Council have established a protocol that provides for traffic can be diverted on to The Councils local roads for that time it takes to resolve the situation if a serious crash occurs on a state highway. Under the protocol:

- The NZTA is required to inform either the Council's staff or the Council's road maintenance contractor of this need.
- The NZTA invokes its own TMP procedures and provides the necessary signage and other control measures on the Council's local roads to establish a detour safely and efficiently.
- The NZTA is responsible for meeting the cost of any damage that may result to Council roads from the use of the detour, e.g. by grading an unsealed road or the repair of edge break on a sealed road caused by the vehicles detoured from the state highway.

Recording

A record is maintained of all temporary traffic management plans approved by the Council. The records include information on requests for service plans, as the work for each of these requests also requires an approved temporary traffic management plan. The majority of the contractors that carry out work for the utility companies have submitted generic temporary traffic management plans but these must be activated for each project by submitting a simplified 'activation form' before work commences.

8.8 Approach for Managing Services Delivery Risks

8.8.1 Risks Associated with External Providers

Contractual Difficulties or Failure

While the tension between the parties of a well-run contract is healthy, major contractual difficulties can have significant adverse effects on the Council's ability to deliver its agreed levels of service. These risks are managed by:

- Using industry-standard forms of contract wherever practical.
- Appropriately qualified and experienced senior staff reviewing draft contract documents before tenders are advertised.
- Close liaison with contractors.
- Management of long-term period contracts in a partnering environment.
- Holding regular meetings with individual contractors at which difficulties can be resolved before they become problems.
- Checking contract claims quickly and paying authorised claims quickly.
- Attempting to understand the contractors' businesses and the pressures on them.

Contractor Skill Deficiencies

- Council's contract evaluation procedures include assessment of the contractors' ability to perform the required works or services to the required standards. On long-term contracts, the depth of key skills in contracting organisations is also considered.

Response

Response times are detailed in the various maintenance contracts. Council maintains a 24-hr / 7-day call centre that is able to contact key staff and contractors in the event of emergencies.

8.8.2 Internal Risk that May Impact of Service Delivery

Staff Continuity

The effects loss of key staff, with key knowledge, requires constant management. Council recognises that all staff will eventually leave its service and the importance of continuous capture of knowledge and its transmission to others. This Activity Management Plan is a small part of that process.

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation and forms part of the business continuity process. Succession planning allows institutional knowledge to be passed on and assists in ensuring continuity of organisational culture. To this end the Transportation AMP is quite detailed to ensure all relevant documents and information required for appropriate decision making are recorded and knowledge transfer can occur even in the absence of key staff.

Staff retention may become a key issue due to technical/professional requirements for the rebuild of Christchurch over the next few years. A methodology for managing this risk has yet to be resolved formally but the following steps have been implemented in the interim:

- Regular reviews of pay parity.
- Management of individual professional development.
- Work enjoyment and flexibility.
- Management of individual workloads.

In June 2014 an additional Transportation Asset Planner was employed to assist with strategic management of the network. In addition, long term relationship with consultants means there is some broadening of their knowledge and capability base within Transportation Planning.

Staff Skill Deficiencies
Council recognises that its staff cannot be expert in all the skills and competencies required to manage, maintain and develop all facets of its road network, and it acknowledges the importance the "smart purchaser" principle plays in reducing its risks in this area.

Understanding Workplace Health and Safety of Staff
This is managed through training of staff and providing them with knowledge of their working environments and the Council's requirements. Council has established procedures for managing workplace health and safety and when formed, Council's Health and Safety committee will meet regularly.

Inspections
Reliance on inadequate or poor inspections can have significant adverse effects. Council endeavours to have all such critical inspections carried out by appropriately trained and experienced people, or at least under their direct supervision. All such reports are reviewed using the smart purchaser principle, external reviews being commissioned where appropriate and necessary.

Changes to Environmental Standards
Changes to environmental standards, such as the Resource Management Act or the Natural Resources Regional Plan/Land and Water Plan, can have significant and costly implications for Council. It manages these risks by reviewing proposal and participating in the consultation and review process that the regulatory authorities are bound to follow.

Staff also note adopted changes and include the long-term effects of them in budgets at the first available opportunity.

Level of Service (Higher Standards)
Sudden changes to desired levels of service, can have significant effects on forecast costs of maintenance, renewals and new works. Council will manage these risks using the processes outlined in the levels of service section of this plan.

Legislative Change
Legislative changes, such as the requirement in the 1990s to contract out all financially assisted road works, can have significant implications for Council. Sometimes these changes can reduce costs but often they, at best, result in short-term cost increases. Council manages these risks by reviewing proposed legislation, participation in the Local Government Association and the Road Controlling Authorities' Forum and participating, where appropriate, in the consultation and review process that legislation follows.

Staff also note legislative changes and include the long-term effects of them in budgets at the first available opportunity.

NZTA Criteria Change

The NZ Transport Agency's financial assistance rates can change annually, though in practice they tend to remain stable for longer periods. There is a review of Financial Assistance policy proposed (2012-14). Council is particularly vulnerable to such changes, which although subject to consultation, are rarely changed after the original proposal is published.

Council manages this risk by closely monitoring proposed changes, through its participation in the industry groups mentioned above, by lobbying, and by ensuring that its road maintenance and renewal expenditure remains at relatively constant proportion of the net equalised land value of the District.

8.9 Management and Organisational Risks

8.9.1 General Management Risks

Clear Council Policies

If Council's policies and directions are not clear and not understood well there is potential for inappropriate, unnecessary or unwarranted expenditure and for Council to require works with similar problems.

The Council has a Corporate Policy Manual in which all the Council policies are recorded. The roading chapter requires review to update it to current or new practices employed.

IT and records

Effective and efficient management of the road network is dependent on computerised systems. Council's IT department has procedures ensuring that there are daily backups of the whole IT systems and that weekly backups are stored off-site for at least one month. Monthly backups are stored for longer periods.

Exceedance of Authority

The risks associated with this area are contractual, financial and technical; a person to whom appropriate authority is not designated may not have the skills or experience required to discharge non-delegated responsibilities.

Business Continuity

Council has not prepared a business continuity plan for the roading network. It intends to prepare a business continuity plan for the non-CDEM functions of Council that includes:

- Identification of the Council's business continuity risks.
- Management of these risks.
- Readiness in the event of a business continuity risk.
- Recovery from business continuity risk events.
- Training for business continuity.
- Personnel Policies and Strategies related to business continuity.

8.9.2 Risks Related to the Activity Management Plan

General

Major errors or deficiencies in the Activity Management Plan can adversely affect the Council's ability to meet its level of service commitments. These risks are managed through:

- Use of competent people to prepare and modify the Plan.
- Observing the smart purchaser principle.
- Regular review of the Plan.
- Corporate commitment to the plan.
- Having the Plan adopted by the Council.

Capacity planning

The effects of changes in the numbers and sizes of vehicles using the road network, and the resilience of the transportation network, are outlined in paragraph 4.4.3.2 above.

Forecast demand is based on corporate growth models, which are in turn based on the best information available the Department of Statistics and corporate data. As these trends and effects are relatively long-term periodic review and network knowledge are sufficient to ensure adequate risk management.

Site-specific development driven changes to network demand are managed through the processes outlined in the Growth and Demand section of this Plan.

Design standards
Council employs a best-practice approach to design of new and renewal works. This considers the location, application and context of the design as part of the process in establishing the standards for it, ensuring that the risks associated with over- and under-design are considered at the appropriate stage.

As long-term design-risk for subdivisions and similar developments does not lie with the designer or developer, Council imposes its own Code of Engineering practice, which it considers limit these risks acceptably.

Construction standards
Construction is required to meet statutory and appropriate best practice standards as specified in contract documents. All but the simplest tasks have written specifications; maintenance specifications re-based on the published Transit NZ [NZTA] "C" Series specifications employed by most NZ local authorities.

Contract management and supervision
Inadequately or improperly supervised contracts put Council at risk through their potential to either deliver what was not wanted, impose unexpected future maintenance costs on Council or through the Council paying for work that has not been done.

Council employs a subdivisions engineer to check on the specification and construction of work by developers and their contractors. It also requires the designers of projects, be they staff or consultants, to oversee and manage the construction of works they have designed. These steps, which operate within the "smart purchaser' principle manage these risks to an acceptably low level.

Completion of works
In large organisations there are risks associated with frequent changes in responsibility resulting in loss of "project ownership" and projects floundering. Council is not so large that this matter raises significant concerns.

Responsibilities for the various aspects of the management and operation of the network are detailed in Job descriptions and are clearly understood by the staff involved and the contractors who work to them.

Progress on projects is monitored by senior management through periodic contact with the relevant staff. What processes are in place to ensure that the desired results will be achieved, on time, to the standard required?

'As Built' plans
As-built plans are an important means of assisting asset managers in the future to manage the assets built today. They are especially valuable in detailing information that is hidden during construction, because it is buried in the structural layers, concreted in or no longer accessible.

Compliance with Resource Consent conditions
Council holds consents for a number of activities and works associated with the road network. These are outlined further in the Lifecycle Management Plan section.

Should Council fail to comply with the conditions of consent for works or activities it undertakes, the consequences could range from embarrassment thorough to significant court costs and fines, and potentially demolition of any offending works.

8.10 Criticality

Criticality of routes and assets involved is regarded as key to robust management of the network and prioritisation of actions. There has been considerable attention in this area through a criticality and extensive inspection of bridges, and this continues through the lifelines and regional key routers identification work which will continue into 2024-27.

8.10.1 Criticality Assessment

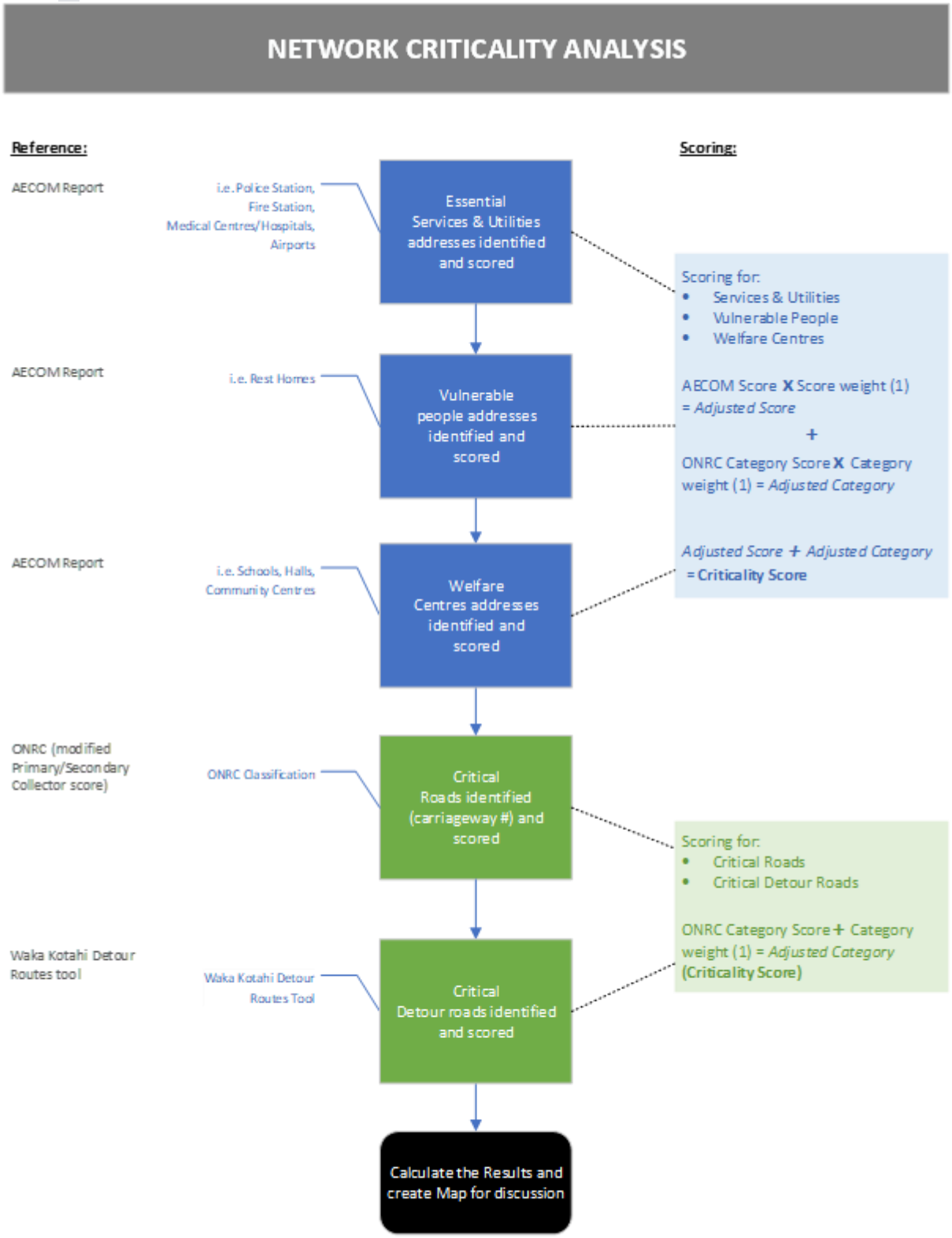
A Criticality Assessment has been undertaken using the method described in Review Of Methods To Determine Criticality Of Roading Networks (AECOM September 2016), modified to include State Highway detours as presented on the NZTA Detour Routes Tool Detour Selector (myworksites.co.nz) March 2024.

The workshop session with the Roading Team identified the need to review care facility locations and increase the importance of State Highway Detours.

The results are summarised below and the assessment is appended to this section.

A regional route prioritisation process involving NZTA and Canterbury Road Controlling Authorities is under way at the time of writing and is expected to be published in the 2024/25 year.

Figure 62: Criticality Analysis Criteria



References:
AECOM Report *"Review of methods to determine criticality of roading networks" September 2016*
Waka Kotahi Detour Routes Tool https://detours.myworksites.co.nz/

Table 61: Critical Roads in the District – Priority Criteria

Criteria	Road2	Road (To)	Road (From)	Carriageway Number	Area in District	Type of Asset
Hororata Volunteer Fire Brigade	**BEALEY RD (PLAINS REGION)**			**3294**	**Hororata**	**Fire**
Coalgate Volunteer Fire Brigade	**BRIDGE ST (COALGATE)**			**470**	**Coalgate**	**Fire**
Dunsandel Volunteer Fire Brigade	Browns Rd			418	Dunsandel	Fire
Rolleston Volunteer Fire Brigade	Chaucer St			332	Rolleston	Fire
Police Station - Leeston	Cunningham St			270	Leeston	Security
Police Station - Lincoln	**Gerald St**			**854**	**Lincoln**	**Security**
Southbridge Volunteer Fire Brigade	HIGH ST (SOUTHBRIDGE)			2037	Southbridge	Fire
Canterbury High Country Volunteer Fire Brigade	Illinois Dr			3463	Rolleston	Fire
Lincoln Volunteer Fire Brigade	JAMES ST (LINCOLN)			3240	Lincoln	Fire
Westmar Senior Care	Kimberley Rd			230	Darfield	Aged Care
Hall - Springston Community Hall	Leeston Rd				Springston	Welfare
Police Station - Darfield	**North Tce**			**1970**	**Darfield**	**Security**
Darfield Volunteer Fire Brigade	**North Tce**			**1969**	**Darfield**	**Fire**
Sheffield Volunteer Fire Brigade	Railway Tce			1799	Sheffield	Fire
Hall - Rolleston Community Centre	Rolleston Dr				Rolleston	Welfare
School - Broadfield School	SHANDS RD				Rolleston	Welfare
Hall - Prebbleton Hall	**Springs Rd**				**Prebbleton**	**Welfare**
Leeston Volunteer Fire Brigade	Station St			2053	Leeston	Fire
Police Station - Rolleston	**Tennyson St**			**298**	**Rolleston**	**Security**
School - Rolleston School	**Tennyson St**				**Rolleston**	**Welfare**
Springfield Volunteer Fire Brigade	Tramway Rd			564	Springfield	Fire
Kirwee Volunteer Fire Brigade	TRAMWAY RD (PLAINS REGION)			1805	Kirwee	Fire
West Melton Volunteer Fire Brigade	**Weedons Ross Rd**			**68**	**West Melton**	**Fire**

Table 62: Critical Roads in the District – State Highway Detours

Criteria	Road2	Road (To)	Road (From)	Carriageway Number	Area in District
SH Detour	**BEALEY RD (PLAINS REGION)**				**Hororata**
SH Detour	**Bridge St (Coalgate)**				**Hororata**
SH Detour	Brookside Rd				Coalgate
SH Detour	Byron St				Rolleston
SH Detour	Coaltrack Rd				Coalgate
SH Detour	Curve Rd				Sheffield
SH Detour	Downs Rd				Hororata
SH Detour	Edward St (Lincoln)				Lincoln
SH Detour	**Gerald St**				**Lincoln**
SH Detour	Grange Rd				Burnham
SH Detour	Hororata Rd				Hororata
SH Detour	Hoskyns Rd				Rolleston
SH Detour	Jones Rd				Rolleston
SH Detour	Lincoln Taitapu Rd				Lincoln
SH Detour	Main Rakaia Rd				Bankside/ Southbridge
SH Detour	Old West Coast Rd				Kirwee
SH Detour	Selwyn Rd				Rolleston
SH Detour	Sharlands Rd				Dunsandel
SH Detour	**Springs Rd**				**Prebbleton**
SH Detour	Telegraph Rd				Darfield
SH Detour	**Tennyson St**				**Rolleston**
SH Detour	Two Chain Rd				Burnham
SH Detour	Waimakariri Gorge Rd				Darfield
SH Detour	**Weedons Ross Rd**				**West Melton**

8.10.2 Criticality Assessment Application

Critical routes have been checked for bridged and other key infrastructure.
There are no HPMV limited, posted or bridges identified as uneconomic associated with these routes.

Further assessment will be undertaken once regional lines information is available.

8.11 Issues

While this section of the plan requires substantial review there is a satisfactory understanding of the risk management process in place and experienced staff are able to manage the issues at hand. Thes will be aligned with the organisation Risk Policy and Risk Management Framework in this AMP cycle.

The key issues that require attention are:

- There are inconsistent levels of awareness of risk throughout the Council and its suppliers.
- At present, the Roading Manager has been assigned default responsibility for managing a large portion of the risks in the register.
- Joint programmes are integrated into this AMP.

Specific items identified are identified below.

Improvement Plan Items

IP 8.2 Participate in Regional/Greater Christchurch Risk Management process development.

IP 8.3 Integrate Regional/Greater Christchurch Risk Management process into Council practices including this AMP.

IP 8.4 Prepare and undertake periodic reviews of the risk register, including reviews by the Council; this could usefully be done in the early stages of the regular AMP Review processes.

IP 8.5 Initiate training of internal staff and external contractors relating to the above and the on-going population of the risk register.

IP 8.7 Review funding and emergency reserve required for future events (noting this will not be funded in the rapid growth period).

IP 8.9 Review this AMP and Transportation Activity Procedures in line with any amendments to Utilities Lifelines – Response Plan (as per ONRC). This will be incorporated with an update of the “Utilities Lifelines – Response Plan”.

IP 8.10 Complete network bridge assessment for 50MAX and HPMV compliance, identify any isolated areas and propose preferred routes or upgrade works.

IP 8.11 Improve Criticality Assessment through adding all lifelines assets/routs (including Council utilities)

9A LIFECYCLE MANAGEMENT STRATEGY

The Lifecycle Management section of this plan is structured to maximise usability for the range of people involved in delivering the Council's Transportation services, through the effective and efficient management of transportation assets.

This section of Selwyn District Council's Activity Management Planning was completely reviewed in 2017 and 2021. Council's Lifecycle Management Strategy was updated, to ensure that robust data collection and assessment processes for roading asset condition and performance was documented in the Long-Term Plan. The asset management and life cycle management activities related to transportation assets – including asset acquisitions, improvements and disposal strategies – have been further developed in preparing the 2021-2031 Activity Management Plan.

A Maintenance, Operations and Renewals Plan was also developed in 2017 to support the delivery of both asset management objectives and work programmes in response to this Strategy. This describes the operations, maintenance and renewal of existing assets, in addition to the administration and non-asset functions associated with the management of the network.

The 2024-2034 Lifecycle Management planning for the Council's transportation assets is now also considered in conjunction with the Selwyn District Council Programme Business Case to support the 2024/25 – 2026/27 National Land Transport Programme. This documentation details the Council's response to Waka Kotahi NZTA, in support of the funding requested for local Transportation service delivery.

Section 9.1 of this Lifecycle Management Plan, and the "Network Components" and "Asset Group Details" (Sections 9.1.3 and 9.1.4) are structured in the same manner as the Programme Business Case – making these companion documents easier to read and manage as a suite of information for Asset Management practice.

Contents

9.1 Lifecycle Management Strategy

9.1.1 Lifecycle Management - An Overview

This section of the Activity Management Plan describes the life cycle management plans for each asset group. The asset groups and their principal components are:

- Sealed Road Pavements ○ Formation ○ Structural Layers ○ Sub-base ○ Basecourse ○ Shoulders ○ Surface
- Unsealed Road Pavements ○ Formation ○ Sub-base ○ Basecourse ○ Fords ○ Shoulders ○ Wearing course
- Drainage ○ Culverts ○ Surface Water Channels ○ Kerbs and channels ○ Sumps and soak holes
- Street Lighting ○ Lights ○ Poles ○ Brackets
- Network (Traffic) Services ○ Road Signs and Posts ○ Pavement Markings * ○ Roadside/Street Furniture ○ Traffic Calming and Traffic Controls
- Traffic Signals
- Rail Level Crossings
- Footpaths and Cycleways ○ Base
    - ○ Surface
- Bridges and Structures ○ Management of waterways at bridges and culvert structures ○ Bridge abutments and piers ○ Bridge decks ○ Retaining Walls
    - ○ Guardrails, handrails and sight rails ○ Cattle Stops and Gates
- Passenger Transport ○ Passenger Transport Infrastructure ○ Bus Stops, Shelters and Street Furniture

The lifecycle management plans for each of these asset groups detail the methods and actions planned to deliver the agreed levels of service, while optimising life cycle costs. The life cycle management plans cover:

- Asset data and information, identifying:
    - ○ The scope and nature of the assets.
    - ○ All new Council-owned assets acquired by the organisation over time. ○ The current condition of Council's assets.
    - ○ The current capacity, performance and expected deterioration of the assets over time, relative to the adopted level of service.
    - ○ Demand projections and risks to the assets during their life cycle. ○ Assets that have reached the end of their useful lives, requiring renewal, replacement, upgrade (improvements) or disposal.

- Management of, and standards for, all asset life cycle work activity — operations, maintenance, renewals, new improvements and disposals.
- Costs and timings of identified work (current and shorter-term forward works programmes) and forecast work needs over the longer term.
- Management of operations, which: ○ Support optimised asset life cycles ○ Deliver the adopted asset life cycle management strategies.

Life cycle management also includes operational activities which under-pin the optimised acquisition, use and disposal of the Council's transportation assets. These groups are considered to be non-asset activities, but are covered in this life cycle management strategy:

- Environmental Management ○ Roadside vegetation ○ Snow clearing and ice control programmes
    - Litter collection, graffiti removal, spillage clean-up and sweeping operations ○ Clearing damaged and/or abandoned vehicles from council-maintained roads ○ Clearing debris material and excess water on council-maintained roads, resulting from weather events
- Network (Traffic) Services ○ Pavement Markings *
- Operations/Network Management ○ Asset Management and activity management undertaken by the Council's

    Transportation team and through the professional services contract ○ Asset Management Information Systems (AMIS) costs
    - Contract Management and service delivery undertaken by the Council's

    Transportation team and through the works contracts ○ Performance monitoring, Quality Assurance and supervision ○ Improvements and investment planning ○ Transportation Planning ○ Travel Demand Management
    - Planning for bus and rail services supporting Council's transportation activities ○ Road corridor management ○ Temporary Traffic Management ○ Corporate operations
- Road Safety ○ Education/Enforcement/Engineering
    - Road Safety works, advertising and promotional activities ○ Behaviour/Walking and Cycling
- Emergency Works and Emergency Management

9.1.2 Lifecycle Analysis – Network Summary

At a whole-of-network level, the asset groups and their principal components are currently valued as shown in Table 9.1. The relative significance of each asset group based on their replacement cost is shown in Figure 9.1

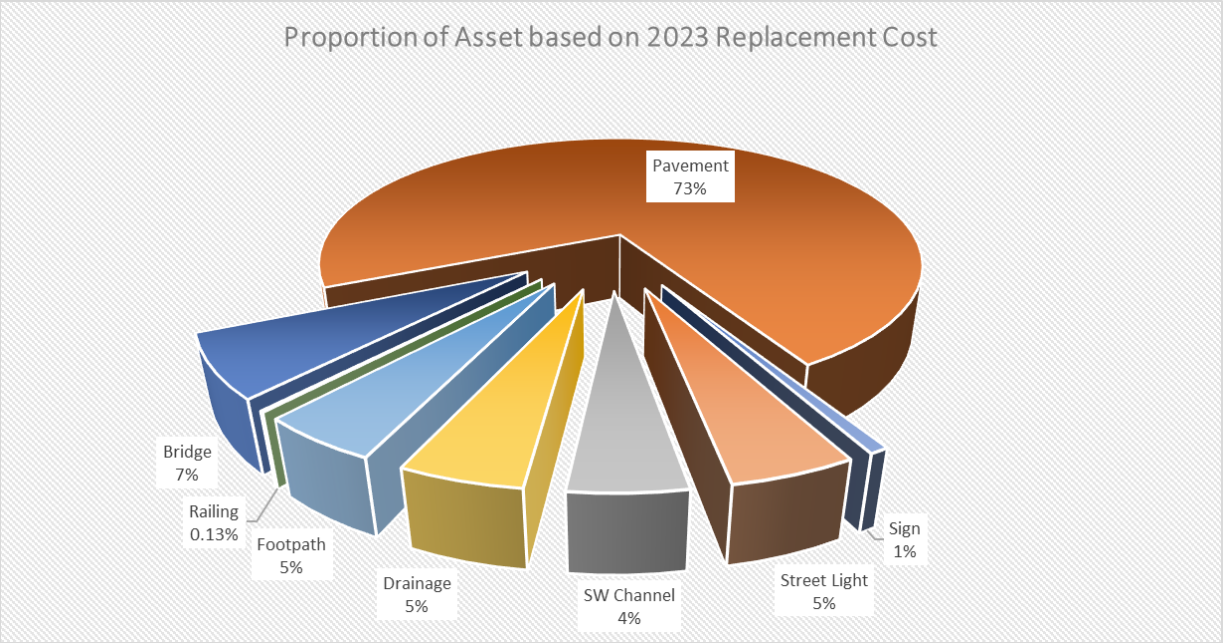
Table 9.2: Summary of the Transportation Services

Asset Type	Component	UOM	2023			
			Quantity	RC Value	DRC Value	AD Value
Bridges and Major Culverts	Bridge (Deck)	each	76	$64,613,252	$28,978,205	$574,414
	Major Culvert	each	62	$12,592,062	$7,718,763	$110,852
	Total			**$77,205,314**	**$36,696,968**	**$685,266**
Drainage	Culverts	m	31,049	$25,229,320	$17,232,194	$262,604
	Structures	each	9,682	$15,578,361	$7,392,339	$405,030
	Total			**$40,807,681**	**$24,624,533**	**$667,634**
Footpath	Footpath	m^2	737,639	$54,114,676	$37,957,713	$1,418,894
	Total			**$54,114,676**	**$37,957,713**	**$1,418,894**
Railing	Railing	m	6,801	$1,503,228	$966,551	$40,672
	Total			**$1,503,228**	**$966,551**	**$40,672**
SW Channel	SW Channel	m	580,543	$50,310,882	$40,329,190	$641,676
	Total			**$50,310,882**	**$40,329,190**	**$641,676**
Sign	Sign	each	19,456	$8,537,358	$1,645,151	$674,914
	Total			**$8,537,358**	**$1,645,151**	**$674,914**
Traffic Islands	Traffic Islands	each	680	$5,889,851	$4,924,315	$73,623
	Total			**$5,889,851**	**$4,924,315**	**$73,623**
Street Light	Poles	each	7,073	$45,025,521	$32,917,122	$1,124,129
	Brackets	each	1,222	$966,783	$646,988	$23,460
	Lights	each	8,634	$7,191,200	$4,626,146	$390,544
	Total			**$53,183,504**	**$38,190,256**	**$1,538,133**
Traffic Signals	Controller	each	3	$521,803	$371,060	$34,787
	Poles	each	25	$142,356	$122,474	$4,745
	Lanterns	each	68	$373,754	$268,027	$24,917
	Callbox	each	16	$16,662	$12,149	$1,111
	Attachments	each	2	$9,521	$6,347	$635
	Total			**$1,064,096**	**$780,057**	**$66,195**
Treatment Length	Sealed Surface	m^2	10,231,568	$153,119,148	$70,166,002	$9,013,235
	Sealed Basecourse	m^2	10,412,550	$251,564,535	$146,822,659	$2,330,613
	Sealed Subbase	m^2	10,412,550	$225,661,070	$225,661,070	$0
	Unsealed Pavement	m^2	5,121,177	$16,899,885	$8,467,836	$1,689,988
	Formation	m^2	15,533,727	$172,579,709	$172,579,709	$0
	Total			**$819,824,346**	**$623,697,276**	**$13,033,836**
Total				**$1,112,440,937**	**$809,812,009**	**$18,840,843**

Source: Valuation Report (BECA, 2023)

* Pavement (or Treatment Length) is used in the roading valuation to report combined replacement cost and depreciation for both sealed roads and unsealed roads. Treatment length measurements are expected to be lower than network road length.

Figure 9.2: Asset Breakdown — by Sub-Asset Replacement Cost



Proportion of Asset Based on 2023 Replacement Cost

Source: Valuation Report (BECA, 2023)

The network is also often classified by surface type (grouping all surfaced roads under the 'sealed' category) and whether the roads are in urban or rural areas. Table 9.3 summarises the inventory by those classifications.

Table 9.3: Network Summary — Length (km)

	Sealed	Unsealed	Bridge	Total
Urban (km)	389.39	3.5	0	392.89
Rural (km)	1183.07	1118.85	0.80	2302.72
Total (km)	1572.46	1122.35	0.80	2695.61

Tables 9.4 and 9.5 show that 58% of the network (by length) consists of sealed roads, and these contribute to over 96% of the use of the network (578 million VKT's out of more than 600 million VKT's)

Table 9.4: Network Summary – Proportion of Total Lengths

	Sealed	Unsealed	Network
Urban	14.5%	0.1% *	14.6%
Rural	43.9%	41.5%	85.4%
Both	58.3%	41.6% *	100.0%

* Urban – Unsealed network length is reported from roading data. These are roads which have been constructed to sealed road specifications but are currently not surfaced. They are excluded from the unsealed road length totals but included in total network length calculations.

Table 9.5: Network Summary —Road Network Use (Percentage by Vehicle Kilometres Travelled)

	Sealed	Unsealed	Network
Urban	26.01%	0.01%	26.02%
Rural	70.24%	3.74%	73.98%
Both	96.25%	3.75%	100.00%

Source: RAMM Manager

The majority of sealed roads are surfaced with chip seal, which is appropriate for the rural roads in the District and is the level of service preferred by most rural users.

9.1.3 Network Components

The roading network comprises of the following assets or services.

Table 9.6: Asset Groups and Principal Components

	**Land** Land within the road reserve is a Council owned non-depreciating asset. Land under formed and maintained roads can be estimated from council data at between 5,000 and 5,500 Hectares. The total land parcel for roads within the District – which includes 'paper' roads - amounts to about Hectares.
	**Pavements** Pavements consist of formation (or sub-grade) layers overlaying road reserve land, structural layers and surfacing/wearing course layers - upon which vehicles pass over to travel between destinations. The **surface** of the pavement is often sealed using chipseal, asphalt or concrete in order to preserve the underlying layers from water ingress and rapid deterioration caused by high traffic volumes and heavy traffic loading. Rural pavements may be unsealed, where traffic loading is lighter.
	**Drainage Facilities** Roading drainage assets include catchpits, sumps and stormwater drainage pipes - connected into reticulated stormwater systems, or draining to ground via soakpits. Culverts under roads are used to preserve land drainage flow paths. The systems drain water away from the road preserving the integrity of pavement layers.
	**Surface Water Channels** In rural situations, drainage assets are typically surface water channels (SWC's) formed within the road corridor. There is increased use of open drains and swales in urban developments. Surface water channels provide the open conduits that are located alongside roads. These channels collect water flows from the road and convey this to other network drainage assets. This asset group includes kerb and channel and dish channels.
	**Street Lighting** Streetlights are provided at intervals along urban roads, footpaths and cycleways, at lighted intersections throughout the District, and at pedestrian crossings to facilitate safe and efficient movement of vehicles, cyclists and pedestrians during hours of darkness. New Zealand Standards apply to street lighting for new development and road improvements. Lights (or lamps) specifications for Selwyn District Council are in accordance with national guidance.

	**Road Signs** Road signs are legal (statutory) notices erected beside the road carriageway to provide advance warning of road hazards, road name or destination information, and regulatory information, such as speed restrictions. Road signs must comply with both national guidance and the legal requirements of the Traffic Control Devices Rule.
	**Pavement Markings** Road (or pavement) markings are the painted lines and symbols on the pavement surface. In some cases the term may also refer to contrasting coloured surfacing – such as green for cycle facilities. They provide delineation, traffic guidance; mark out regulatory zones and demarcation of amenities - such as parking spaces - within the road carriageway.
	**Traffic Controls** Traffic control assets include traffic signal equipment at intersections and road crossings, and structures that guide and regulate the safe movement of traffic. The Selwyn District roading network has an increasing number of traffic signal controlled intersections and pedestrian crossing facilities. This asset group also includes physical traffic islands (“splitter islands” and “build-outs”) and some specialised street furniture, such as pedestrian “rest rails” at crossing points. In general, traffic control is delivered to the motorist by traffic signs and markings.
	Rail Level Crossings Selwyn District Council (and Waka Kotahi NZTA) roads within the district include a number of rail level crossings. These provide set points where specialised traffic controls are provided to enable vehicles, cyclists and pedestrians to safely cross operational rail tracks. All assets providing advanced warning and protection to both road and rail users are managed in collaboration with KiwiRail.
	**Footpaths** Footpaths are paths located within the road corridor or council-owned reserves. They are typically for pedestrian use, but may provide an increased level of service, where wider footpaths are shared with bicycles. These will generally be designed to accommodate both modes of movement. They provide a safe area for more vulnerable road users – particularly children, older pedestrians and the mobility-impaired – typically separated from vehicles that use the carriageway. Vehicle crossings at accessways are an exception to this, and are controlled for new development and road improvements.
	**Cycleways** Cycleways are specific paths for cyclists that are used to separate cyclists from vehicle traffic flows. Cycleways are generally located as a space within the road carriageway or shared footpath, delineated by road markings. Dedicated off-road cycleways are increasingly being provided as level of service improvements on the network, and may be classified under the footpath or pavement asset groups.

	**Bridges** Bridges include spanned structures and large culverts that provide continuous roading over waterways, and rolling and mountainous terrain. Underpasses are a specialised culvert structure that allows the safe crossing of livestock under the road. Bridges are complex individual assets and encompass a broad range of construction materials, sub-components and structural performance.
	**Minor Structures** Minor structures assets in Selwyn District are mainly made up of retaining walls, although they may also include supporting structures, such as sign gantries. Retaining walls are provided to support the road, where traffic loads and ground levels cannot be supported by embankments or berms. Some larger retaining walls are complex individual assets and encompass a broad range of construction materials, sub-components and structural performance.
	**Railings** Railings are roadside structures that fence off roadside traffic hazards in order to improve the safety of the network. They include guardrails and handrails (which usually conform to national guidance and specifications) and sightrails.
	**Road Berms/Shoulders (and Vegetation Control)** Road berms are the grassed (or gravelled) land strips within the road reserve that provides an area between the pavement and adjacent property for footpaths, signs, drains, street trees, public utilities and roading structures. These land areas are not typically considered to be assets, and responsibility for their condition may not solely lie with the Council. Vegetation control is a maintenance/operational activity carried-out within the road berm area to control weeds and grass growth, which keeps roadside areas tidy to preserve safety and amenity values.

9.1.4 Asset Group Details

Both the Lifecycle Management sections of this Activity Management Plan, and the Transportation Programme Business Case, follow the same asset group structure. The aim is to enable the Lifecycle Management processes, detailed Lifecycle Management service delivery and the underlying case for investment (set-out in "Part Three – Decision Making, Service Delivery and Benefit Delivery (Continuous Programmes)" of the Programme Business Case)

9.1.4.1 *Sealed Pavements*

Pavements are the structural and wearing course layers of a road. They are regarded as the core components of the roading network's trafficable carriageways. A major failure of a section of pavement can result in the road becoming dangerous and/or impassable. Based on a total replacement cost of $820 million, the pavements asset equate to 73% of all transport related assets covered by this Plan and is by far the largest single contributing asset group. A small percentage of this replacement value includes the Unsealed Road Pavements (see below).

The purpose of each road pavement is to provide an element of the network that is:

- Appropriate and suitable for the effective and efficient movement of the vehicles and people using, or likely to use.
- Has a suitable all-weather surface that is appropriate to its location and function in terms of skid resistance, noise reduction and smoothness.
- Has a structure suitable to carry legal weight, and most cases overweight, traffic.

Headline 9.1:
There are a variety of geological conditions across Selwyn District which affect pavement performance. These conditions are summarised within RAMM as 'Hills', 'Plains' or 'Lake' areas

Figure 9.1.1: Rural Sealed Pavement and Shoulder

Sealed Pavements consist of four principal components, the sub-grade, sub-base, basecourse and top surface. The composition of these layers differs based on the type, function and locality of the road or street. This is explained further in Section 9b.

The key issues relating to pavement management are:

- Maintenance of an accurate inventory of all pavements.
- Keeping routine maintenance to a level that maintains the integrity of the pavement and overall networks.
- Identifying and investigating sections of pavement in need of rehabilitation.
- Ensuring that all necessary rehabilitation is programmed for funding and physical works.

Current practice is to provide additional strength to a road prior to sealing using a standard 25-year design life. While the variability of conditions throughout the district prevents a blanket approach being taken to the structural design of roads, the costs of sealed road construction are relatively low when

compared with those faced by other Road Controlling Authorities nationally. This is because of the good sub-grades and drainage on the Central Canterbury Plains where the majority of the district's roads are located. Sub-grade conditions deteriorate closer to the coast and Te Waihora/Lake Ellesmere and in the hill and high-country areas of the district. Disadvantages with the use of a 25-year design life is that this is shorter than the lives experienced elsewhere across the district and therefore, maybe a poor long-term investment.

The most common surfacing used is chip seal, which comprises stone chips embedded in bitumen sprayed onto the basecourse. This surfacing provides the most cost effective and best performing surfacing for thin flexible pavements in the district (i.e. thin pavement layers over sub-grades of a moderate to high strength due to the predominance of alluvial gravels below the Canterbury Plains). It is a very cost-effective surfacing due to the availability of high-quality rock from glacial and fluvial stone that can be extracted from rivers or pits and crushed to the appropriate size. This is the case for almost all rural roads, and many older or Low Volume urban roads.

Based on an average 15-year resealing cycles, many roads will have been sealed around four times since the initial treatment was applied.

Asphaltic Concrete (AC), or concrete paving blocks, have only been used for very specific high-stress sites. Asphaltic Concrete road surfacing comprises an approximately 30mm thick dense layer of mixed bitumen and small stone aggregate applied to the basecourse surfacing. It is known for its smooth black finish and is used predominately in new urban subdivisions for its aesthetic properties. It is also used in high wear and high traffic areas because of its durability.

In the District concrete road surfaces are only found in association with bridge decks and some fords.

Nearly all new urban roads that have come about through recent urban residential subdivision development have an Asphaltic Concrete (AC) surfaces. Council has replaced some chip seals in older urban streets with an AC seal when a reseal was necessary or when a major street upgrade project was undertaken, particularly at intersections and in turning circles. There is a resident preference for AC seals as these reduce traffic noise and bitumen bleeding in hot weather. They also improve street amenity in line with the streets being constructed by developers as part of new urban subdivisions etc.

While AC has advantages, it is expensive compared to chipseal. Resurfacing AC with chipseal can be problematic, and may be unacceptable to the residents. Currently Council does not have a policy position on vesting roads paved with AC, or what treatment shall be used for resurfacing.

9.1.4.2 *Unsealed Pavements*

In comparison, unsealed roads are quite dynamic in their performance. This is because they require more regular intervention to maintain their surfaces and shapes due to the influences of weather and traffic.

Unsealed Pavements consist of three principal components, the sub-grade, sub-base, and running course surface. The composition of these layers differs based on the type, function and locality of the road or street. This is explained further in Section 9b. The principal maintenance activities on unsealed roads are application of a running course of AP20 metal, which is then re-spread (graded) periodically

to maintain an even running surface to vehicles. The running course is generally replenished or renewed in 7-10 year cycles. The rate of metal loss can vary between 5 to 10mm per annum depending on the use and location of the road.

A typical problem with running course is that it is a loose metal that can quickly migrate from the wheel paths, where it is needed the most, to the side of the carriageway under the action of vehicle wheels. While grading does reposition the metal, this constant intervention can be considered inefficient, especially when traffic volumes exceed 150-200 vehicles/day.

When the unsealed roads are considered in terms of ONRC classification, there are six roads that are "Secondary Collectors". These are worthy of further investigation to determine if they can be justified as seal extensions/ intersection seal backs.

Carriageway No	Road	Start	End	Length	ADT	% Heavy Vehicles	ESA per Day
2503	ESSENDON RD	709	963	254	230	15.2	32
995	FRASERS RD (LAKE REGION)	0	103	103	163	15.2	23
3134	KNYVETTS RD	1513	2341	828	248	18.7	60
3135	KNYVETTS RD	2341	5023	2,682	248	18.7	60
953	MALVERN HILLS RD	1579	4745	3,166	198	15.2	27
1251	RAKAIA TERRACE RD	13263	15773	2,510	199	22	50
3309	RAKAIA TERRACE RD	15773	22078	6,305	199	22	50
1111	TWO CHAIN RD	8076	8681	605	576	10.4	39
		TOTAL		**16,453**			
	KNYVETTS RD	Combined		3,510			
	RAKAIA TERRACE RD	Combined		8,815			

Knyvetts Rd is a secondary collector, 2.7km between Glasseys Rd and Heslerton Rd. In the 2018 LTP, this section of road was proposed to be sealed in 2033/34.

Other unsealed roads with higher traffic counts include but are not limited to:

Carriageway No	Road	Start	End	Length	ADT
3967	AHURIRI RD	1425	4020	2,595	337
1421	GILMOURS RD	0	2251	2,251	639
3119	HESLERTON RD	9541	10196	655	945
678	OTAHUNA ROAD (Cossars Road end)	0	812	812	465

There are some unsealed roads that appear to have high traffic counts; however, potential count sites may be located elsewhere on those roads. Any considered seal extensions would require site-specific counts.

Traditionally unsealed rural roads are identified as potential candidates for seal extensions in respective forward programmes. This work ceased some years ago as it is cost prohibitive and it is

Council's policy that these roads have to pass an economic threshold criterion before they can be considered for funding.

There are a number of unsealed rural roads that serve only one or two properties or extend beyond the residences on rural properties. Although of a low standard, their very low use is such that they are considered uneconomic to maintain. Council will consider maintaining these roads if they are relatively short and close to other unsealed roads that are regularly maintained. On this basis, Council may elect to provide limited maintenance, reflective of their use and any benefit to the adjoining road network or local destinations. This will require a policy to be developed to identify such areas and the levels of service that will be provided.

9.1.4.3 *Drainage*

Drainage facilities include culverts, sumps and soak holes, grassed surface water channels (swales), and earthen surface water channels on sealed and unsealed roads. Surface Water Channel assets include formed kerb and channel, kerbing without channels and hard surfaced surface water channels in urban areas, such as flat v-channel.

Drainage Culverts

The purpose of culverts is to convey natural watercourses or stormwater across the road without adversely affecting the pavement or surface of the road, or disrupting its use. They are distinguished from bridges by having formed bases in place of the stream bed (water flowing under bridges flows in a natural bed). Standard NZ roading practice, which utilises the definition adopted by Waka Kotahi NZTA for asset classification and investment decision-making, considers "culverts" to have a waterway area less than or equal to 3.41m^2. Culverts larger than this (typically 2.1m diameter, or 2m x 1.75m minimum) are classified as bridges and are often referred to as either "bridge culverts" or "major culverts".

Culverts are generally assets manufactured from are concrete, high-strength plastics or steel. They typically have long useful lives, that show little sign of deterioration until failure, if they have been correctly installed. The exceptions can be:

- Armco® (galvanised steel) culverts carrying peaty or swampy water, which is often quite acidic. In these circumstances, the acidity attacks the galvanising and removes it over a decade or so, leaving an unprotected steel surface shortening the culvert's life.

- Older 'butt jointed' concrete culverts that do not have the modern spigot and socket rubbering sealing system between the pipes. Butt jointed pipes can allow water to escape, eroding the surrounding pavement formation. Over time, this can result in subsidence of the carriageway or landslip failures causing sections of road to drop out on slopes.

Surface Water Channels (SWC's)

The primary purpose of all surface water channels (SWC) is to provide a path for stormwater runoff from the carriageway, footpaths, berms, and sometimes the adjacent properties, to:

- Protect the pavement from water ingress, and consequent structural deterioration.

- To allow the convenient and safe movement of pedestrian and vehicular traffic.

These channels are invariably unlined except in very exceptional circumstances where there is a requirement to prevent sub-surface water infiltration / exfiltration or erosion of the channel.

Shallow surface water channels are shallow trafficable depressions formed with the invert 2.0m to 3.0m from the carriageway edge and 150mm to 300mm below the edge of the carriageway. Their sides are tapered back to the existing berm with a target slope of around 1:10. These types of channels are referred to as swales. Deep surface water channels are often referred to as drains.

Both types of surface water channel are predominately found in rural areas. However, the use of swales is becoming more common in urban areas as part of an integrated stormwater treatment and disposal system in new urban subdivisions.

Kerb and Channel

Kerb and channel is a specific type of surface water channel. Its purposes are to:

- Provide a path for stormwater runoff from the carriageway, footpaths, berms and adjacent properties, protecting the pavement from water ingress, and consequential structural deterioration.
- Allow the convenient and safe movement of pedestrian and vehicular traffic.

It also has an important secondary purpose:

- To enhance the convenient and safe movement of pedestrians and traffic by separating these two streams of road users.

Drainage assets account for 9% of the total transportation asset group, based on replacement cost.

The use of concrete kerb and channel, as opposed to surface water channels is a recognised and accepted level of service provided within urban development. With the flat profile of the District's towns, ponding can occur if well-formed channels are not used. Apart from its functional role, kerb and channel also protects the carriageway seal edge from the higher exposure to traffic within the urban area. Kerb and channel is required in all new urban subdivisions by the District Plan. In some of the smaller and more rural orientated townships, kerb and channel may be seen as unnecessary, or not be wanted by the residents.

Kerbing is also installed at some rural intersections, bends and corners in conjunction with other road improvement works, such as minor improvements at intersections, seal extensions and seal widening. Kerbing in these situations protects the edge of seal from edge break problems in these high-wear areas while also providing positive drainage of stormwater runoff. In addition, kerbs delineate corners of an intersection to a higher degree than a plain seal edge. Originally, a number of these proposed installations were subjected to a least life cycle cost analysis before any work was undertaken, with favourable results. These have been taken as typical results and further analysis is not applied unless traffic volumes are marginal or there are other special circumstances.

Figure 9.1.2: Low Profile Kerb and Channel and Entranceway

The key issues relating to kerb and channel are:

- Implementation of a kerb and channel extension strategy that identifies missing sections or sections that need to be provided.
- Determination of the amount of deferred maintenance and renewals of kerbs and channels.
- Utilisation of processes to quantify asset physical attributes and condition.
- Provision of appropriate stormwater collection, treatment and discharge facilities where necessary.
- Compliance with Resource Consent conditions, including under the NRRP conditions, imposed when maintaining, renewing and providing stormwater facilities.
- Resource Consent conditions imposed on developers that will become the Council's responsibility when the assets themselves are vested in the Council by the developers and any resource consents transferred to it.

Recently there has been a move to better understand and manage the environmental impacts of discharges from carriageway drainage systems, especially those that start with open reticulation systems, such as kerb and channel, and include sumps and soak holes. This has been driven in most part by the Canterbury Land and Water Regional Plan (rules 5.93A – 5.97) prepared under the Resource Management Act 1991 by Environment Canterbury (ECan). This Plan puts significant emphasis on ensuring water quality by the correct treatment and disposal of stormwater runoff in urban areas. A large amount of the stormwater runoff is collected by urban kerb and channel and it can contain contaminants like heavy metals and hydrocarbons that originate from the carriageways or the adjacent properties.

Isolated stormwater disposal that does not include reticulation via a reticulated system is permitted provided conditions are met (Rule 5.93).

Storage, treatment and disposal systems are being used in new urban subdivisions to remove or reduce sediments and contaminants before discharge to land and natural watercourses such as rivers. The

discharge of stormwater in these situations requires the consent of ECan under the Resource Management Act 1991.

Figure 9.1.3: Treatment Swale — Brookside Road

Drainage Facilities

Sumps and soak holes are used to remove stormwater from kerb and channel or other surface water channels when there is no suitable open watercourse available. Sumps connect to a pipe and usually contain a silt trap. Sometimes this asset sub-group is referred to as “catchpits” as a generalised description. Sumps are generally assets manufactured from concrete, high-strength plastics or steel. They typically have long useful lives, that show little sign of deterioration until failure, if they have been correctly installed.

Where there are no reticulated stormwater systems or natural flow paths, stormwater is often disposed of through soak holes. Soakage facilities (such as soak holes) have a shorter useful life, and also show little sign of deterioration until failure, if they have been correctly installed. These assets have limited scope for maintenance interventions and rely on a more traditional age-based renewal plan.

Soak holes are usually large holes excavated in the berm areas alongside carriageways down to a free draining material (such as the alluvial gravels that are found under most of the plains area of the Selwyn District). These holes are then backfilled with single size or GAP-graded (100mm+) stones to create a sub-surface soakage and water dispersal medium. Soak holes are generally very effective throughout the plain areas but away from the confined aquifers near Lake Ellesmere and the coast. Their performance can be unreliable in townships like Lincoln, Prebbleton, Doyleston, Leeston and Southbridge due to soil conditions and/or high ground water tables.

There is a difference between the type of soak holes used in rural areas and those most often used in urban areas. With the water quality requirements detailed in the Land and Water Plan, a considerable emphasis has been placed on enhancing the quality of water runoff from roads and streets before it discharges into the ground and in time infiltrates the water aquifers.

1. Standard soak holes receive run-off directly from surface water channels, usually swales. Their dispersal medium (the stone filling) usually extents to the ground surface where it is finished flush with the surface. In rural areas carriageway drainage is purely a roading responsibility as there is little threat to subsurface water quality from any carriageway runoff, due to the inherent treatment that occurs with the swales and open surface water channels commonly present.
2. Soak holes used in urban areas are referred to as modified soak holes. They receive discharges from the sumps located in the kerb and channel and are generally located in the berm behind the kerb in line and adjacent to the sump. Modified soak holes utilise a central perforated 300mm diameter pipe core and a debris trap that sumps discharge to, surrounded by a stone dispersal medium. Unlike ordinary soak holes, they eliminate the need for the large stones to be on the surface of the berm, which is more in keeping with higher amenity urban areas.

   The design of urban sumps has changed in recent times, to improve the trapping of sediments and contaminants. This has required the use of submerged outlets and other techniques before discharging to other treatment and disposal systems like swales, soakage basins and wetlands alongside the carriageway. The operation and maintenance of soak holes in urban areas is now seen as part of the Utility Stormwater asset because of the specific operational and maintenance requirements to maintain water quality standards.

Most drainage facility assets – such as sumps and chambers - are concrete, high-strength plastics or steel, with long useful lives.

With appropriate maintenance the asset lives may be longer than assumed. It is quite likely that replacements will be associated with a change of level of service or demand only. Appropriate maintenance is regarded as key.

9.1.4.4 *Network Services - Street Lighting*

Streetlights were previously part of the “Traffic Services” asset group. They are made up of the following components, or sub-groups:

- Lights
- Brackets
- Poles (excluding utility services poles)

The purpose of street lighting is:

- To provide agreed lighting levels in streets for the safe and efficient movement of vehicles, cyclists and pedestrians.

Streetlights are provided for a variety of reasons. These range from lights installed at specific rural intersections to improve road safety, lighting of residential and rural residential streets and roads, and the lighting of pedestrian footpaths and cycleways through township reserves that connect between streets.

Council manages streetlight assets located on District roads, as well as those located on State Highways, which are managed under delegated authority from Waka Kotahi NZTA.

With encouragement from Waka Kotahi NZTA, providing an enhanced Financial Assistance Rate of 85% subsidy, Council opted to replace the lighting assets with energy efficient LEDs. This programme has been delivered over the course of the 2018-21 Long Term Plan period for the entire District, and is due to be completed in June 2021. This whole-of-network upgrade now requires the Council to review it's asset management practices in relation to street lighting, to ensure best value is obtained in maintaining and operating the LED lights and planning for future renewals. Street lighting assets account for 3% of the total transportation asset group based on replacement cost.

Figure 9.1.4: Double Arm Street Lights, Izone Drive

Historically street lights have been mounted on other utility poles, such as power poles. However, over the last 20 years new urban subdivisions have been required to have underground power and telecommunications services. This then requires street lights to be mounted on their own poles. The developers who construct these subdivisions often utilise decorative light fittings and poles to enhance the streetscape. The installations that are then subsequently vested in Council can have a corresponding higher maintenance and renewal needs and demands.

In the past, street lights were installed by the local "power board" with little or no involvement from Council. These lights were installed to standards applying at the time of installation. Subsequent revisions in standards and community expectations have meant that in some areas the level of service provided is below what would is currently expected. In some cases, residents of the smaller more rural townships in the District prefer to have little to no street lighting — which is more in keeping with the rural environment.

Council has adopted the AS/NZS 1158:2010 Street Lighting Series of Standards. These set out requirements for lighting systems for roads and other outdoor public areas, primarily to provide a safe and comfortable visual environment for both vehicular and pedestrian movement at night.

The LED Upgrade programme has replaced streetlighting on a 'like for like' basis only. Whilst lighting performance is often improved by current LED technology, they cannot completely address gaps in expected service levels.

The key issues relating to the management of street lighting are:

- Lighting standards that reflect the intended use and road hierarchy.
- Identifying opportunities for optimising street lighting maintenance and operations, and the need for a development of a street lighting renewal and upgrade programme, following the completion of the LED Upgrade programme.
- The effect of decorative urban street lights vested in the Council, by urban subdivision developers, on renewals and maintenance budgets.
- The impacts of any future undergrounding programmes for overhead wiring.

9.1.4.5 *Network Services - Road Signs and Pavement Markings*

Road signs and pavement markings were previously part of the "Traffic Services" asset group. which aid the safe and orderly movement of traffic and indicate road use restrictions and other information. A good standard of signs and markings can contribute significantly to a safer road network.

Council has over 18,200 signs, 1,300 kilometres of road line marking (, and 2,600 individual pavement markings. The lifecycle management of pavement markings is considered to be a maintenance and operational activity, and are not directly considered to be assets. Road sign assets account for 1% of the total transportation asset group based on replacement cost. Unlike streetlights, where poles are separately managed as an asset sub-group, sign posts are considered to be part of the sign components. Both signs and posts have similar in-service lives.

Figure 9.1.5: Birchs Road Delineation Upgrade

The use and design of many traffic services assets is controlled by statute. The current statutory regulation controlling them is Land Transport Rule: Traffic Control Devices 2004, Rule 54002. These regulations typically set the level of service standard in urban areas. The standard of rural delineation provided over the network has previously reflected that used by Christchurch City Council for the outskirts of Christchurch, where it borders the Selwyn District. The adoption of Council policies in the early 2000's require that markings are provided to present a seamless transition into the Selwyn District from all neighbouring districts.

The key issues relating to road signs and pavement markings are:

- Establishing economic and meaningful performance measures for signs and markings.
- Providing a consistent appropriate standard of signage on all roads in the district, relative to their hierarchy and use.
- Damage caused to signs by vandalism and traffic accidents.
- The quality of road marking materials and application.
- Problems with markings adhering to fouled surfaces.
- Maintaining road markings in areas of high wear.
- Providing a consistent appropriate standard of road marking on all roads in the District, relative to their hierarchy and use.

9.1.4.6 *Network Services - Traffic Signals*

The growth in urban roads and the associated traffic control assets – principally traffic signal upgrades at key intersections - places an immediate burden on network services maintenance budgets. Where budgets and resource are constrained, work in urban areas is likely to be prioritised.

As the traffic signals located on Selwyn District Council roads are all new assets, they are generally in good condition. There are no known recurring problems caused by inadequate maintenance for these asset classes. Reactive maintenance to repair damage or faults at traffic signals require urgent response, placing additional pressures on already constrained resources. No significant renewal requirements are currently anticipated for the next ten years.

9.1.4.7 *Footpaths and Cycleways*

The primary purpose of footpaths is to provide safe and convenient facilities allowing people to walk to their chosen destinations. Cycleways have an analogous purpose. It is becoming more common to provide shared facilities utilising pathways that are wider than what would normally be provided.

The footpath and cycleway assets account for 5% of the total transportation asset group based on replacement cost.

For the purposes of this section of the Plan, cycleways are separate facilities that are not part of the carriageway. On-carriageway facilities such as cycle lanes are considered part of the pavement asset sub-group and are managed accordingly as an integral part of the pavement.

Footpaths are mainly located along streets and roads in townships and through reserves and other areas connecting culs-de-sac and other streets to enable increased connectivity. Footpaths are not normally found in ruralresidential subdivisions as current Council policy does not require them to be provided.

Figure 9.1.6: "Mayoral Challenge" Cyclists on Birches Road Rail Trail, 2008

In some cases formed pathways can link townships, for example between Waddington and Sheffield and the "Railtrail" from Christchurch to Prebbleton and Prebbleton to Lincoln. The section of formed and sealed pathway alongside Birchs Road between Prebbleton and Lincoln is 7km long and is used by pedestrians and cyclists.

Council adopted a Walking and Cycling Strategy and Action Plan in 2007. This Strategy is undergoing a refresh and is available in the Appendix. While the Strategy is a separate document to this Activity Management Plan, implementation of the Strategy is achieved through this AMP. The Walking and Cycling Action Plan is discussed in Section 3.6.3.

Council's current policy is to have footpaths on only one side of the road in new developments and in townships. There may be exceptions considered on a case-by-case basis in high usage areas, such as near businesses and schools. One of the steps in implementing the draft Walking and Cycling Strategy is to review this policy.

The key issues relating to footpath and cycleway management are:

- Implementation of the revised Walking and Cycling Strategy.
- Controlling third party damage to footpaths (e.g. building sites, trucks).
- Deferred footpath renewals.
- The effects of utility companies' underground wiring for maintenance and renewals programmes.
- The increasing emphasis being placed by government agencies to promote and provide more sustainable transport options that utilise walking and cycling and the provision of infrastructure to enable this.
- Footpath crossfalls, "missing" sections of footpath and other facilities such as drop crossings to cater for mobility scooters and other vulnerable road user groups.

The type of surface used is dependent on life cycle cost considerations, pedestrian volumes and the amenity value of the location e.g. shopping and commercial areas. It has historically been influenced by the preference of the local township committee, which is now likely to form a secondary consideration with the inclusion of footpath and cycleway maintenance, operations and renewals under Waka Kotahi NZTA Work Categories, eligible for financial assistance. Surfacing currently constructed for footpath and cycleway assets in the Selwyn District includes:

- Asphaltic Concrete: Mix of graded aggregate and asphaltic binder laid in a 20–30 mm layer, over compacted basecourse.
- Chip seal: Layer of sprayed bitumen with a small-grade stone chip, spread over compacted basecourse.
- Concrete: Unreinforced concrete laid in a 75 mm layer over compacted basecourse.
- Paved: Concrete pavers laid over compacted basecourse.
- Metal: Graded crushed stone chips spread over compacted basecourse.
- Interlocking Blocks: Concrete blockwork (usually coloured) or vitrified clay bricks, laid side by side on a formed and compacted base in an interlocking pattern to form the footpath surface. All footpaths and cycleways are constructed over a prepared base layer, which varies to suit the underlying ground conditions and other factors such as the locations of vehicle crossings.

Much of the network is less than 20 years old There is currently no deferred maintenance, and the District footpath programme is considered to be in 'build mode', funded from Capital Improvements investment. There is limited renewal undertaken as part of maintenance. Over the next three years it is proposed that data will be improved as part of condition rating (and inventory improvement) to develop an indicative renewal plan. Annual Depreciation is significant at $1,672,294 (2020 valuation) based on the rapid growth of these assets and shorter standard lives compared to pavements.

9.1.4.8 *Bridges*

The purpose of road bridges is:

- To provide continuous all-weather access over rivers, streams and uneven terrain, and grade separation over railway lines and other roads.

As discussed in Section 9.1.4.3 "Drainage – Culverts", the bridges on the Selwyn District Council roading network structures such as major culverts if they have a waterway area greater than 3.41m^2.

The bridge inventory reviewed in 2022-23 comprises of 174 structures. Bridge assets account for 7% of the total transportation asset group based on replacement cost.

There are four bridges that straddle the District's boundaries. Two of these, over the Rakaia River, are State Highway bridges and Council has no responsibility for them. Responsibility for the others is shared as follows:

Table 9.1.1: Shared Bridges Partly Owned by the Selwyn District

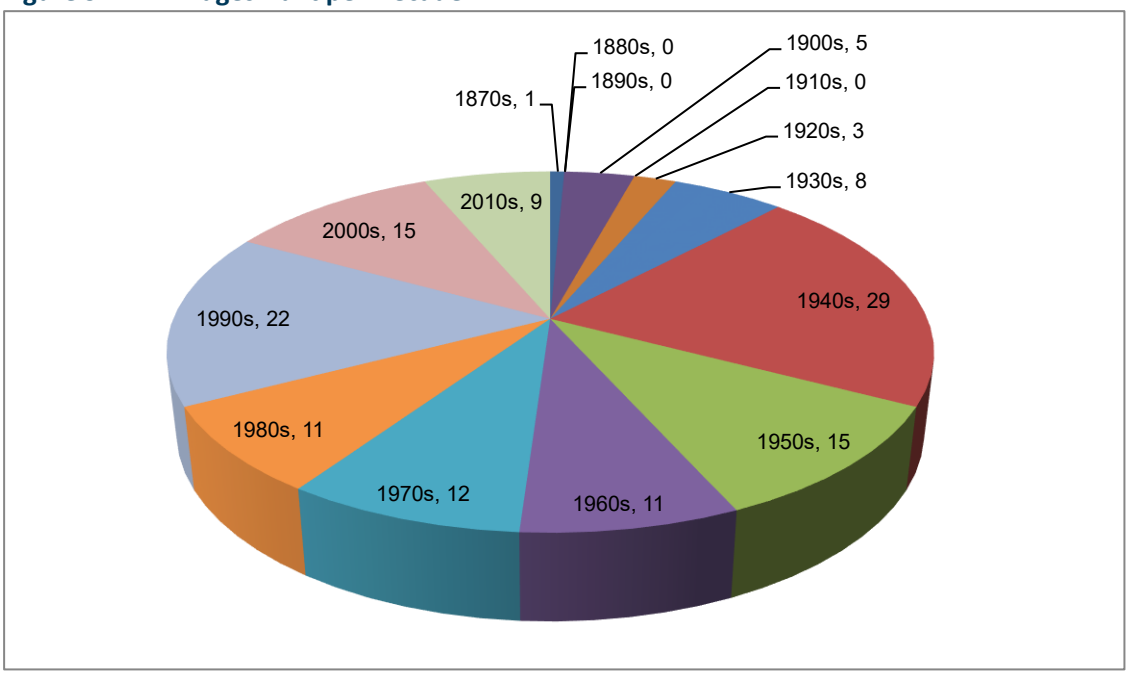
Bridge	Ownership	Management Responsibility
Waimakariri Gorge Bridge, Waimakariri Gorge Road	50% Selwyn District Council 50% Waimakariri District Council	Selwyn District Council
		
Knights Stream Bridge, Trices Road / Sabys Road (CCC)	50% Selwyn District Council 50% Christchurch City Council	Christchurch City Council

Bridges are complex assets with specific issues. The majority of Council's road bridges are located in two distinct geographic areas in the District, the Hill Country between Springfield and Hororata and in the Plains area between Prebbleton and Leeston.

Bridges and culverts in the Hill and High country are over natural streams and rivers originating from the catchments in this area, and over open-channel formed stock-water race systems. There are some bridges located in the High Country that provide tourism, recreational and farm station access. Bridges and culverts in the plains area serve the continuation and tributaries of the main rivers originating from Hill and High Country, and formed open-channel land drainage systems.

Council's bridge stock ranges in age from almost 150 years-old (the Poulter River Bridge, Mt White Road - constructed in the 1870's) to less than 10 years-old. A high proportion of bridges attributed with a construction date in the 1940's is a result of this being used as a general default when age may not have been accurately established. Most original bridges over the larger rivers were replaced with modern concrete and steel structures between the 1950's and the 1990's.

Figure 9.1.7: Bridges Built per Decade



Bridges are constructed from various materials including timber, steel and concrete. As the District roading network expanded smaller bridges were made of timber. As time progressed larger bridges were made of steel, composite structures of both timber and steel were also constructed.

Figure 9.1.8: Poulter River Bridge – Mt White Road

The majority of older bridges are constructed of timber and are relatively short in length, being over small natural and formed watercourses. These bridges receive the majority of routine maintenance attention. Typically, timber was used for decks and steel for the superstructure. Piles utilised either material. This has created some difficulty with the long-term maintenance of bridge structures, as the different materials age and deteriorate at different rates. Timber, including Australian hardwood that was the early material of choice for most bridges, is the least durable of all the materials available and

is prone to rot, insect attack and natural defects such as cracking, splitting and in the case of timber decks, surface abrasion. Steel is more durable but is subject to rust and consequently must be well protected by surface coatings to prevent deterioration.

Nearly all bridges are now constructed from concrete, utilising high quality precast components. Smaller timber bridges are being replaced with precast box culverts that can be quickly put into position. Concrete structures while potentially the most durable can suffer from carbonation and chloride attack, which can allow internal reinforcing steel to rust or concrete to degrade. Poor or inappropriate structural detailing and construction of concrete structures can significantly influence their longevity and the potential for expensive rehabilitation work during the life of the structure. This is more prevalent in older structures where these types of defects have become evident by the passage of time.

Larger culverts generally serve water races and land drainage systems and are typically concrete structures of varying quality and condition, depending on their age.

Key issues relating to the management of road bridges are:

- Older timber bridges reaching the ends of their practical and serviceable life spans.
- Higher demands on older bridges from heavier and more traffic than originally anticipated when built. Forestry, dairy, and stock transport now typically operate at 46-50 tonnes loaded mass, compared with 16-20 tonnes 40 years ago.
- Increasing number of requests for access by HPMV (some over 50 tonnes mass).
- Maintenance liabilities with some types of older bridges, caused by obsolete detailing and construction methods.
- Increasing awareness of safety related issues with older bridges, e.g. single lane, inadequate approaches, guardrailing.
- Striking the correct engineering and social balance between an appropriate level of service and cost, e.g. bridge replacements or refurbishments.
- Obtaining financial assistance (subsidy) for replacements or new bridges.
- Obtaining resource consent for major works in or adjacent to watercourses under the Resource Management Act.

9.1.4.9 *Railings and Minor Structures*

Railings are a very small asset grouping within the transportation assets, with just over 5,000 metres of railings and supporting structure recorded.

9.1.4.10 *Passenger Transport*

Passenger Transport is historically provided to Selwyn District through Environment Canterbury (ECan) Regional Transport Committee. While being involved in planning and decision making for public transport across the district and the Greater Christchurch region, Selwyn District Council's role has historically included the provision of bus shelters at specific bus stops.

Capital expenditure for new and upgraded bus stops has been funded from the Capital Improvements budget – or Council's unsubsidised capital programme – prior to the 2018-2021 NLTP. Repairs and restoration have been undertaken under the Road Maintenance Contract when required.

There is an annual pedestrian infrastructure budget of $300,000 . This is used for the upgrade of pedestrian infrastructure throughout the District. The decision to fund an upgrade to pedestrian infrastructure is influenced by criteria like safety, patronage and whether the improvement has been requested by the community. Recently this budget has been used to purchase bus stops and create sealed shoulders for buses to pull over onto instead of stopping in the middle of the road to let on/off passengers.

9.2 Asset Life Cycle Management and Service Delivery

The management of roading and transport is a 'significant activity' under the terms of the Local Government Act 2002. Council has a statutory obligation to provide an effective and efficient transport system, including aligning it to the purpose and objectives of the Land Transport Management Act 2003. Selwyn District Council organisational objectives - and outcomes sought through delivering the Council's transportation activity - are then linked back to these statutory objectives.

To achieve the desired outcomes, it is essential that Council manages the activity, both at a detailed and a network level. Ensuring that best practice life cycle management for transportation assets is embedded in Council's activity management ensures that Selwyn District Council can effectively and efficiently deliver a local road and transport network as part of a wider integrated regional and national transport system.

Council does not work alone in meeting the District's transportation needs. It works with a wider group of Road Controlling Authorities, Waka Kotahi NZ Transport Agency, advocacy groups (such as Local Government New Zealand and the Road Efficiency Group), industry and professional bodies (for example, the Institute of Public Works Engineers Australasia), and specialist service providers to plan local and regional transportation networks.
There are also other stakeholder organisations that have an interest in transport matters. These include freight transport, motorist, walking and cycling, public health, disability and mobility and road safety groups. Their involvement adds value and a different perspective which improves transport planning and decision-making processes.

Procurement Strategy

Services are delivered using in-house or out-sourced resources as described in the approved Procurement Strategy (refer Section 3.6.5).

Collaboration

Selwyn District Council is actively involved in collaboration efforts to manage it's transportation assets as part of the regional (greater Christchurch) area. There is a considerable level of joint planning undertaken. There is also contact with neighbouring authorities through Regional Land Transport and Waka Kotahi NZTA initiatives.

The Selwyn network is large and there is an appropriate level of staffing and resources available to manage this. The physical works contract is both a manageable and competitive size, and there are arrangements in place to secure professional services where required to complement the in-house team. These elements ensure effective and efficient delivery of transportation operations, the maintenance and renewals programme and Council's capital works programme. There are currently no reasons or intent to seek a collaborative arrangement with another organisation.

Headline 9.2:
Physical works have been outsourced since the 1990s as a Waka Kotahi NZTA (previously Transfund) requirement. Council undertakes most planning and supervision activities in-house

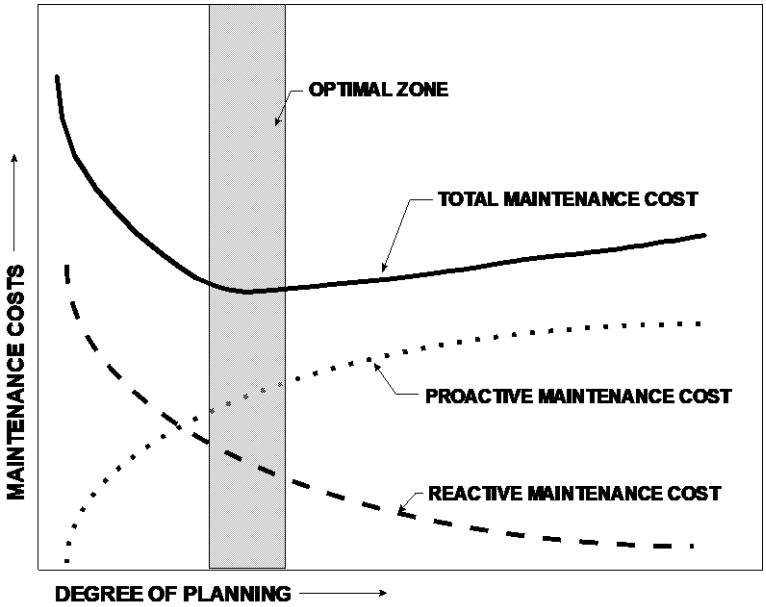
9.3 Maintenance and Operations Plan

9.3.1 Maintenance and Operations Overview

This section describes how Council will manage and maintain the established levels of service on the transportation network. The plan also includes assessment of the costs of the maintenance, operations and renewal activities required to deliver services at these expected levels . It also covers these aspects in relation to operating and maintaining the service capacity, condition and life cycle performance of the transportation assets.

A key element of asset management planning is determining the most cost efficient programmes of planned and unplanned maintenance, as illustrated below:

Figure 9.3: Balancing Proactive and Reactive Maintenance



Council sets its funding for road operations and maintenance every three years through its Long Term Plan (LTP). From 2009, the Land Transport Management Act has required Road Controlling Authorities to prepare and submit their three-year Land Transport Programmes for approval as part of the Environment Canterbury Regional Land Transport Programme (RLTP) under Activity Class 8 – Maintenance and Operations. This is then incorporated into the National Land Transport Programme (NLTP). This encompasses Waka Kotahi NZTA Work Categories 111 to 151, as shown in Table 9.1.

Table 9.7 – Waka Kotahi NZ Transport Agency Maintenance Work Category Structure

Work Category	Work Category Name
	Maintenance and Operations of Local Roads
111	Sealed pavement maintenance
112	Unsealed pavement maintenance
113	Routine drainage maintenance
114	Structures maintenance

121	Environmental maintenance
122	Traffic services maintenance
123	Operational traffic management
124	Cycle path maintenance
125	Footpath maintenance
131	Level crossing warning devices
140	Minor Events
141	Emergency reinstatement
151	Network and asset management
171	Financial grants

Council also undertakes some works of this type without Waka Kotahi NZTA financial assistance. Historically, road maintenance has been seen by many Local Authorities as an area where savings can be made when there is pressure to reduce rates. The maintenance activity is a large budget item and is still seen by some as one where reduced investment has less of an overall impact. The Council recognises that such decisions are rarely in the best long-term interests of the roading network.

In general, funding of maintenance is set to match the long-term needs established by the maintenance programmes set out in this Activity Management Plan. In preparing Council's 2024-2034 Transportation Activity Management Plan, a business case approach has been used to demonstrate how the maintenance, operations and renewals 'Continuous' programmes put forward by Selwyn District Council represents best value to Waka Kotahi NZTA as co-funder. One significant change introduced during the 2018-21 NLTP period was the inclusion of footpath maintenance work as a financially assisted Work Category.

While the timings of these programmes have been established to coincide with Local Government statutory long term planning processes, there can be delays in NLTP approval, which may not be completed until after the start of each three-year LTP financial period.

Maintenance and maintenance tasks are not carried out in isolation from other activities on the network. Maintenance approaches are optimised on the whole of life basis and when maintenance ceases to be viable, renewal usually becomes economic.

Maintenance activities are also integrated with the long-term needs of associated asset elements, e.g. there are more extensive pavement repairs carried out immediately before a reseal to ensure that the surface life is prolonged to the greatest practical extent.

9.3.2 Maintenance Activities

Maintenance activities are the day-to-day works needed to keep assets operating at the required service levels. These activities are often referred to as "routine maintenance". Routine maintenance falls into two broad categories as follows:

1 **Planned (Proactive) Maintenance:** Proactive inspection and maintenance works planned to prevent asset failure.

2 **Unplanned (Reactive) Maintenance:** Reactive action to correct asset malfunctions and failures on an as required basis (i.e. urgent repairs).

The following table details the principal maintenance regimes for the various asset categories.

Table 9.8: Maintenance Types and Asset Categories

Asset Category		Principal Type of Maintenance
Roads	Road pavements	Preventative and Reactive
	Footpaths and cycleways	Reactive
Drainage	Culverts	Preventative
	Kerb and Channel	Preventative and Reactive
	Catchpits	Reactive
Structures	Bridges, Retaining/Protection Structures	Preventative
Safety Facilities	Road Markings	Preventative
	Guardrails, sight rails, etc	Preventative and Reactive
	Street lights	Preventative and Reactive

9.3.3 Operations

Asset operations are activities that have no effect on asset condition but are necessary to keep the asset appropriately utilised. This distinguishes them from maintenance activities, which directly affect asset condition. In this section operational costs such as street light power, are included in the sections and discussions associated with the maintenance of those specific assets, while professional services and similar costs, are discussed in the Operations section.

This section of the Life Cycle Plan covers asset operational activities and costs associated with:

- Professional services.
- Asset management systems.
- Related staff and overheads.

Asset management operations involve the timely and professional input of engineering knowledge and the use of asset management systems to ensure best value in planning and delivering works, including renewals programmes.

Professional services, beyond feasibility study level, for most renewals and new improvements works are regarded as project-related and form part of the overall cost of those projects.

Professional Services Overview

The Council has in house resources responsible for the operation of Council's Transport and township activities. Time recovery and overhead costs associated with the unit are charged to the various Council accounts that span the various maintenance, renewal and improvement activities, including where eligible the subsidised NZTA work categories through Councils Land Transport Programme.

There is no cost component associated with "profit" as there is no Council requirement for this to be generated. Council has focused the Unit's energy and direction on providing a good service, compared to the need to make a profit. The cost of strategic transport planning staff is recovered from Districtwide overheads as this work is spread out over the complete activity to the benefit of all ratepayers and residents.

In 2006 Council decided to create two separate but intrinsically related engineering units within Council. The Service Delivery Unit is responsible for the day-to-day operational engineering management of Council's activities. The Strategic Assets Unit is responsible for providing strategic long term planning functions, such as the preparation of the Activity Management Plans, input into the LTP, and coordination with long term regional planning initiatives such as the UDS. Both units' activities are coordinated by the Asset Manager.

Refer also to section 10.1.8 Organisational Structure.

Professional Services Costs - Maintenance, Renewal and New Improvements Fees

How professional services costs are provided and allocated to subsidised roading works are strongly influenced by Waka Kotahi NZTA policies and procedures. Generally professional services costs provide for the service fees relating to maintenance and operations.

Operational fees include the professional services necessary to:

- Manage a roading network, including all maintenance activities.
- Prepare contracts for the works and services needed to deliver the agreed levels of service.
- Legalise existing road reserves.
- Produce project feasibility report (PFRs) for capital projects.
- Investigate rehabilitation.
- Manage preventative maintenance.

NZTA Work Category 151 – Network and Asset Management under Council's subsidised Land transport Programme is where funding is sourced for professional services for Activity Classes 8 – Maintenance and Operations of Local Roads and 10 – Renewal of Local Roads. This category does not include operational traffic management and emergency reinstatements.

For the other main activity classes associated with Council's subsidised Land Transport Programme 1 – Road to Zero (Safety Improvements), 4 – Walking and Cycling Improvements, and 12 – New and Improved Infrastructure for Local Roads, professional services costs form part of the individual work category budgets that fall under these categories.

Financial forecasts contained in this plan reflect this and as such, these services are not itemised separately.

Internal professional services costs have previously been calculated based on six Full Time Equivalent (FTE) positions relating to subsidised transport activities conducted under the Council's Land Transport Programme. The Improvement Plan includes a task to ascertain if this needs to increase in order to manage the activity properly over the forecast period of this plan.

Professional services costs are incurred by the Council's Transportation Strategic Asset Management and Service Delivery teams, and any external consultants the Council engaged. In broad terms, all are subsidisable provided the works themselves are subsidisable. For example, fees related to footpaths are not subsidisable as footpath works generally are not currently subsidisable. This may change based on the new government's direction.

Costs associated with preparing, updating and administering this Activity Management Plan are covered under NZTA Work Category 003 – Activity Management Plans.

A new Work category 004 is for Programme Business Case development. This work category provides for the preparation of transportation Programme Business Cases, including supporting evidence collection and model application. Waka Kotahi NZTA expects that proposals for funding assistance for a Programme Business Case will be justified using a fit for purpose Strategic Case which: Outlines the case for change and the need for the potential investment.

- Identifies the strategic context and fit of the proposed investment.
- Provides stakeholders with a high degree of confidence that the investment aligns with strategic priorities.

Selwyn District Council has developed both the Strategic Case and Programme Business Case for Transportation activities as part of the funding

Professional services costs for non-subsidised activities are fully funded by the Council, including professional and system costs for all unsubsidised maintenance, renewal or improvement works. These costs are reflected in the financial forecasts in Section 11 – Financial Summary of this Plan.

9.3.4 Monitoring, Quality Assurance and Supervision

The Council is vigilant in monitoring the performance of the Contractors and Consultants to ensure that the performance standards defined in contracts are continually achieved. Contract No. 1234 Road Maintenance includes specific network surveillance and condition monitoring as part of the overall network monitoring programme.

Monitoring

The following table lists the main asset and condition monitoring systems in place for the major asset groups. This approach is under ongoing review as asset data requirements for dTIMS and business case evidence increase.

Table 9.9: Network Asset and Condition Monitoring

Asset Category		Monitoring
Roads	Road Pavement	**Network Inspection:** Inspections by road maintenance contractor ranging from monthly to 12 monthly based on road type. Daily monitoring by Council Roading staff. **RAMM Rating:** Whole sealed network once every three years. Pavement Use 1 and 2, 200m rating length with 10% inspection. Pavement Use >2, 200m rating length with 10% inspection. Note following publication of Amendment 1 to The NZ Transport. Agency's Programme and Funding Manual RAMM rating is now carried out as follows: All sealed roads carrying >= 500 veh/day — rated and annually. 50% of the remaining sealed local road network rated annually so that all are rated once every two years. *To be replaced with High Speed Data Collection in 2024/25 as part of the REG/Te Ringa Maimoa Consistent Condition Datra Collection Initiative.* **RAMM Roughness:** The roughness of all sealed roads per lane is measured once every three years in conjunction with RAMM rating. All unsealed roads (one direction only) once every three years to the following criteria excluding any: Unsealed roads or carriageway sections less than 500m long, e.g. small no exit unsealed roads. Unsealed urban roads. Any unformed or unmaintained sections. Unsealed carriageway sections less than 4m wide. Unsealed carriageway sections with a traffic count less than 20 ADT. *To be replaced with High Speed Data Collection in 2024/25 as part of the REG/Te Ringa Maimoa Consistent Condition Datra Collection Initiative.*
	Footpaths	Annual inspection of 100% of network by roading staff and contractor. RAMM Condition rating of 100% of Network 2-4 year intervals.

Drainage	Culverts	No formal Inspection. Improvement Plan task noted previously to introduce a formal rating system.
	Kerb and Channel	Periodic inspection of 100% of network. RAMM Condition rating of 100% of Network 2-4 year intervals *To be reviewed as this is not included in the REG/Te Ringa Maimoa Consistent Condition Datra Collection Initiative.*
	Sumps etc.	As part of cyclic cleaning programmes.
Structures	Bridges, Retaining/ Protection Structures	Routine visual inspections included in network inspection. Detailed inspection every 12 months, and during and after flood and earthquake events, by contractor. Consultant inspection – frequency informed by criticality.
Asset Category		**Monitoring**
Safety Facilities	Road Markings	Part of Performance Contract requirements.
	Signs, guardrails, sight rails, etc.	Included in network inspection.
	Street Lights	As part of lamp bulk change programme, and 6 monthly night inspections on strategic routes including local roads and state highways.
	General	Safety audit: There is no specific audit. This is noted as an Improvement Plan Task both in this plan and the SMS plan to establish a routine safety audit procedure over the network. Review of all fatal and serious crashes, and crash information sources.

Supervision

Regular auditing of Contractors and Consultant performances is undertaken to ensure performance measures are being met (as detailed earlier in this Section of the Plan). Council audits Contractors' performance by measurement and inspection of the work and of the roading assets.

Council employs two road contract supervisors who undertake monitoring of the performance of the network and directly supervise contractors. They provide an important conduit between the contractor and the engineer in the identification and resolution of any problems or issues as they occur.

Council's contract supervisors have frequent contact with Contractors. They:

- Keep informed of where the work is being done.
- Inspect work on an appropriate basis resolving any issues on site.

Report to the Engineer on the work being done.

Confirm approved work to the Contractor.

Clarify contract issues.

Have a crucial role in developing and maintaining the partnering approach and relationships essential to the successful management of long-term contracts, e.g. the road maintenance contract.

There are many items of work that are done on a cyclic basis, e.g. kerb and channel cleaning, pothole patching, and mowing; where the location of the work varies from hour to hour. This type of work is observed only if a supervisor is in the area at the time. The quality of completed work is noted as part of the general inspection on District roads.

Poor workmanship is noted and referred to the Contractor for fixing.

Daily contact with the Contractors and frequent inspection of the work sites by the contract supervisors ensure that both the Contractor and the Engineer are aware of the work being done and the specified standard is being achieved.

Quality Assurance

All main contractors are required to submit for approval a Quality Assurance Plan(s) prior to commencement of the contract that establishes standard and specific quality procedures relevant to the work being conducted. This is particularly relevant for the main on-going road maintenance, road marking and resealing contracts where ISO 90001 accreditation is the minimum standard required.

9.3.5 Corporate Operations

The term Corporate Operations is used in this context to include all matters associated with running and funding the road network that are neither carried out by roading staff nor fit comfortably into any of the other categories discussed in this Plan or its Appendices, but that are charged or credited to the roading accounts.

Council's policy is for the costs of running the following aspects of the organisation to be met from activity budgets as an overhead:

- HR and payroll services.
- Policy and communications unit.
- Financial services, including accounting, budgeting, creditor payments and revenue collection
  - Information systems.
- Other corporate administration costs.

Corporate overheads are allocated to activities based an assessment of the workload generated by the activity.

9.3.6 Asset Management and Service Delivery

The cost of the Service Delivery Division, including staff costs and divisional overheads, is allocated to the relevant activities based on assessment of the workload generated by each activity.

Asset Performance Data

There is an extensive range of data collected to monitor the condition and performance of transportation assets. Monitoring is discussed in Sections 6 and 10 of this AMP.

Any deficiencies identified have been noted as improvement items in the respective sections.

Asset Management Systems Costs

The Asset Management Systems employed by Council on its transportation assets are described more fully in Section 11 of this Activity Management Plan. These are also funded under NZTA Work Category 151.

This Section of the Life Cycle Management Plan covers the professional services relating to the operation and administration of Council's transport Asset Management Information Systems (AMIS's). It is placed here so that all the operational expenditure-related aspects of roading are in one part of this Plan.

The systems and services that are funded provide inventory, rating and assessment information relating to:

- Traffic features.
- Road condition.
- Road Features.
- Age.
- Design lives.
- Costs.
- History.

The principal asset management system used is the RAMM system, which is the main repository for all Council's roading asset inventory and condition rating information.

The SLIM database within RAMM contains similar inventory and condition history of streetlights. Its cost is included as part of its overall activity costs as it is directly managed as part of the Street Light Maintenance contract.

Asset Performance

This system, combined with integrated predicted deterioration modelling programs such as dTIMS and asset valuation modules, provides the asset information to produce this plan, maintain and operate the network and manage the planned renewals investment.

9.4 Approach for Managing Services Delivery Risks

9.4.1 Risks Associated with External Providers

Contractual Difficulties or Failure

While the tension between the parties of a well-run contract is healthy, major contractual difficulties can have significant adverse effects on the Council's ability to deliver its agreed levels of service. These risks are managed by:

- Using industry-standard forms of contract wherever practical.
- Appropriately qualified and experienced senior staff reviewing draft contract documents before tenders are advertised.
- Close liaison with contractors.
- Management of long-term period contracts in a partnering environment.
- Holding regular meetings with individual contractors at which difficulties can be resolved before they become problems.
- Checking contract claims quickly and paying authorised claims quickly.
- Attempting to understand the contractors' businesses and the pressures on them.

Contractor Skill Deficiencies

- Council's contract evaluation procedures include assessment of the contractors' ability to perform the required works or services to the required standards. On long-term contracts, the depth of key skills in contracting organisations is also considered.

Response

Response times are detailed in the various maintenance contracts. Council maintains a 24-hr / 7-day call centre that is able to contact key staff and contractors in the event of emergencies.

9.4.2 Internal Risk that May Impact of Service Delivery

Staff Continuity

The effects loss of key staff, with key knowledge, requires constant management. Council recognises that all staff will eventually leave its service and the importance of continuous capture of knowledge and its transmission to others. This Activity Management Plan is a small part of that process.

Succession planning within any business is considered necessary to reduce the risk associated with staff leaving the organisation and forms part of the business continuity process. Succession planning allows institutional knowledge to be passed on and assists in ensuring continuity of organisational culture. To this end the Transportation AMP is quite detailed to ensure all relevant documents and information required for appropriate decision making are recorded and knowledge transfer can occur even in the absence of key staff.

Staff retention may become a key issue due to technical/professional requirements for the rebuild of Christchurch over the next few years. A methodology for managing this risk has yet to be resolved formally but the following steps have been implemented in the interim:

- Regular reviews of pay parity.
- Management of individual professional development.

- Work enjoyment and flexibility.
- Management of individual workloads.

In June 2014 an additional Transportation Asset Planner was employed to assist with strategic management of the network. In addition, long term relationship with consultants means there is some broadening of their knowledge and capability base within Transportation Planning.

Staff Skill Deficiencies

Council recognises that its staff cannot be expert in all the skills and competencies required to manage, maintain and develop all facets of its road network, and it acknowledges the importance the "smart purchaser" principle plays in reducing its risks in this area.

Understanding Workplace Health and Safety of Staff

This is managed through training of staff and providing them with knowledge of their working environments and the Council's requirements. Council has established procedures for managing workplace health and safety and when formed, Council's Health and Safety committee will meet regularly.

Inspections

Reliance on inadequate or poor inspections can have significant adverse effects. Council endeavours to have all such critical inspections carried out by appropriately trained and experienced people, or at least under their direct supervision. All such reports are reviewed using the smart purchaser principle, external reviews being commissioned where appropriate and necessary.

Level of Service (Higher Standards)

Sudden changes to desired levels of service, can have significant effects on forecast costs of maintenance, renewals and new works. Council will manage these risks using the processes outlined in the levels of service section of this plan.

Legislative Change

Legislative changes, such as the requirement in the 1990s to contract out all financially assisted road works, can have significant implications for Council. Sometimes these changes can reduce costs but often they, at best, result in short-term cost increases. Council manages these risks by reviewing proposed legislation, participation in the Local Government Association and the Road Controlling Authorities' Forum and participating, where appropriate, in the consultation and review process that legislation follows.

Staff also note legislative changes and include the long-term effects of them in budgets at the first available opportunity.

Waka Kotahi NZTA Investment Criteria Changes

The NZ Transport Agency's financial assistance rates can change annually, though in practice they tend to remain stable for longer periods. There is a review of Financial Assistance policy proposed (201214). Council is particularly vulnerable to such changes, which although subject to consultation, are rarely changed after the original proposal is published.

Council manages this risk by closely monitoring proposed changes, through its participation in the industry groups mentioned above, by lobbying, and by ensuring that its road maintenance and renewal expenditure remains at relatively constant proportion of the net equalised land value of the District.

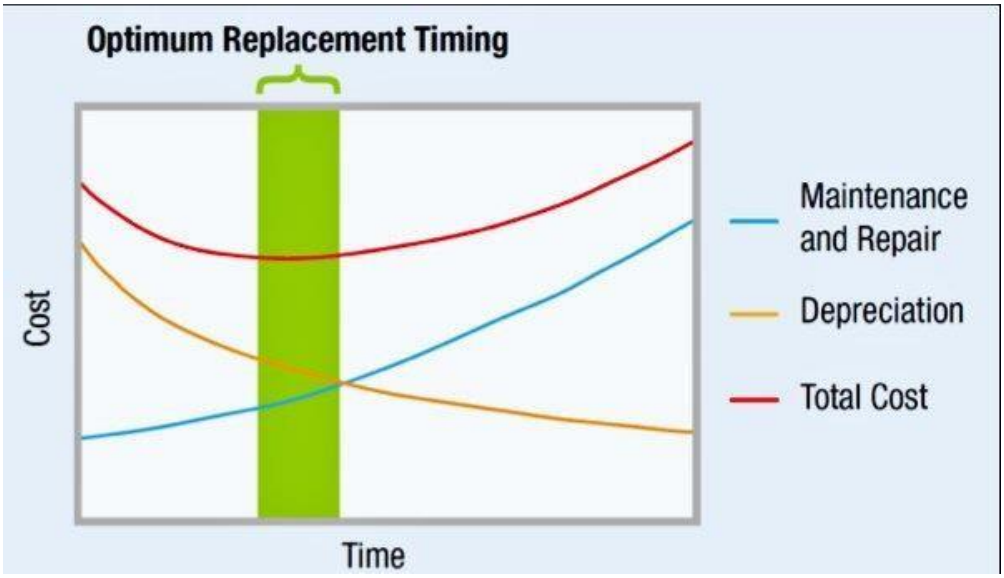
9.5 Asset Renewals Plan

9.5.1 Renewal Planning Overview

This Section identifies how the renewal and replacement of assets will be undertaken. Renewals are significant works that do not increase an asset's original design capacity or improve its original condition. Works over and above restoring an asset to its original capacity and condition are referred to as Improvements and as such are separately identified and funded.

Renewals are distinct from routine maintenance activities. The principal differences being that where routine maintenance is an on-going task occurring from day to day and is necessary to repair wear and tear and keep an asset operating safely, renewal works are periodic and often both expensive and extensive. Renewals restore the service potential of the asset consumed by normal use.

Figure 9.4: Managing Renewal/Replacement of Assets



Asset renewal is undertaken when an asset, or a significant component of an asset, has reached the end of its economic life. Renewals are normally considered at the level to which components are split for valuation purposes. Work that restores the structural integrity of components, e.g. repair of concrete spalling on a bridge, is therefore a maintenance activity and an owning and operating cost as defined by NZ IAS 16.

9.5.2 Renewal Activities

The renewals sections of the life cycle management section of this Plan provides for:

- The renewal and rehabilitation of existing assets to their original size and capacity.
- The replacement of the entire component of the asset with the equivalent size or capacity.
- The replacement component of new improvement works, i.e. the portion of the work that restores the assets to their original size and capacity.

The asset renewal plans identify the needs and drivers for renewing assets and the expected times those assets will be renewed or replaced. To do this they identify renewal requirements and develop forward financial programmes. The proposed future renewal strategies for each of those groups are explained – a specific requirement of the Local Government Act 2002. There are a number of issues that influence renewal forecasting and the associated works.

These issues include:

- Wear and tear.
- Climate and climatic changes. Trends in usage.
- Accuracy of predicted trends.
- Local economic trends and the diversity of industries.
- Changing technology and availability of materials.
- Changing community expectations.
- Changing legislation.

Examples of renewals in the roading context include:

- Resurfacing of sealed and unsealed carriageways.
- Over laying existing pavements with a new structural layer.
- Extensive excavation of existing structural layers and their replacement with new material.
- Replacement of kerb and channel, footpaths, streetlights, bridge decks etc. at the ends of their useful lives.

Funding for the majority of Council's roading renewal activities is through its subsidised Land Transport Programme as Activity Class 10 – Renewal of Local Roads. This encompasses the NZTA Work Categories 211 to 231.

Table 9.1 – Waka Kotahi NZ Transport Agency Renewals Work Category Structure

Work Category	Work Category Name
	Renewals of Local Roads
211	Unsealed road metalling
212	Sealed road resurfacing
213	Drainage renewals
214	Sealed Pavement rehabilitation
215	Structures component replacements
216	Bridge and structures renewals*
221	Environmental renewals
222	Traffic services renewals
225	Footpath Renewal*

* New Work Categories qualifying for Waka Kotahi NZTA Financial Assistance from the 2021-24 National Land Transport Plan (NLTP)

Renewal works may be undertaken as separate contracts or, depending on the scale of works, be incorporated in maintenance contracts. The method of delivery is irrelevant to this definition. It is nevertheless important that renewal costs be identified separately.

9.5.3 Renewal Strategy and Funding mechanism

Relative Priorities

For allocation of available funds, a broad renewal priority order is necessary. This is a guide only and can be varied if circumstances warrant. The priority order reflects the goals of safety and road efficiency.

- Resealing.
- Bridge Replacement.
- Area wide treatment, road pavement rehabilitation and reconstruction.
- Footpaths reconstruction and resurfacing.
- Road Signs, Markings and Control Structures.
- Other Works.

Renewal Standards

- Renewal works comply with the following technical standards:
- NZTA specifications including the TNZ series.
- Austroads — Guide to Traffic Engineering Practice.
- Austroads — Guide to the Structural Design of Road Pavements.
- New Zealand Standards.
- Relevant Selwyn District Council Engineering Standards, policies and guidelines.

- ***Headline 9.3:***

There is a balance between the construction of new assets, and the maintenance and renewal of existing assets. The context and funding situation are part of this balance. Timing is a key factor in renewals planning

Asset Groups

The life cycle management plans describe the renewal of each asset group separately. Asset groups can include segments that are funded in different work categories. This particular format has been chosen because it allows better understanding of the relationships between the components of an asset group, and makes the links between the renewals of those components clearer. The format used can also be read directly in conjunction with Selwyn District Council's Transportation Programme Business Case 2021/22 – 2023/24

Each asset group covers the details of the Council's physical assets, and includes information relating to:

- Condition
- Performance
- Criticality
- Capacity
- Asset lives
- Asset value and depreciation

- Risk Management
- Asset disposal

9.5.4 Renewals Planning Tools

Identification

The purpose of cyclic renewal, replacement or rehabilitation strategies is to provide for the progressive replacement of individual asset components that have reached the end of their useful lives. Renewal works should be scheduled to occur 'just when the asset or a component of the asset is worn out'.

Roading has a large asset base with many different contributing asset types with different service lives and use rates. In this circumstance, renewals can be regarded as the work needed to maintain the value of the network over the long term. The timing of renewals is largely affected by the use and the condition of the asset elements. Renewals should extend an asset's life from that originally envisaged.

The overall objective for rehabilitating and renewing pavements is to apply the correct treatments at the optimum time so that the required level of service is delivered whilst minimising total life cycle costs.

Renewals expenditure levels are set and adjusted on the following basis:

- The age profiles of the assets.
- The condition profile of the assets.
- The criticality/risk profile of the asset.
- On-going maintenance requirements and costs.
- The life expectancies of individual asset components.
- Items that warrant no significant expenditure are not "renewed"; they are scheduled for disposal.

Failure to plan and implement adequate and appropriately timed cyclic asset renewal programmes will result in a decline in the overall standard and performance of the asset or individual asset components. This will lead to increasing costs of ownership and use unless the component is abandoned and withdrawn from service.

The Council employs different techniques to assist it in establishing the most appropriate time in an assets life for renewal to occur. These techniques include:

Deterioration Modelling (dTIMS)

In this context, Deterioration Modelling is the predictive modelling of network components and network use to:

- Generate expected performance curves for asset components over time.
- Generate a list of feasible alternatives for addressing the deterioration of the asset.
- Include the costs borne by road users in the decision-making process. Optimise the available renewal strategies for different funding levels.
- Prioritise interventions for different funding levels. Report on the results of the analyses.

Council carries out deterioration modelling of its pavements using NZ dTIMS CT software. This software is accepted by the NZTA as being fit for purpose. Other procedures based on condition rating surveys have been developed to assess the condition of footpaths, kerb and channel and streetlights.

dTIMS provides outputs ranking optimised projects at a network level for incorporation into a forward works programme. A significant output of the forward works programme is the sealed roads reseal programme.

Benefit Cost Ratio Analysis

Benefit Cost Ratio (BCR) analysis is explained in the NZTA Economic Evaluation Manual and is essentially a project level tool. It considers the costs of various project options over a 25-year period and the user and social costs associated with each option over that period to determine the best option for completing a project.

It is only one of a number of criteria used by the Agency to assess if the work or project is eligible for financial assistance.

Least-Cost Analysis

The principal difference between a least-cost (or least maintenance-cost) analysis and a BCR is that the least-cost analysis considers only roading infrastructural costs and ignores the vehicle operating and time travel cost borne by road users.

Least-cost analysis can be used at both project level and at network level. In the latter case, it is carried out using the Treatment Selection Algorithm included in the RAMM software package.

Financial Modelling

Council is required to value all its assets regularly. This accounting procedure also establishes depreciation charges that may be used to fund the renewal of the asset. Valuation and depreciation of transportation assets is discussed further in Part 11 – Financial Summary.

The financial depreciation charges obtained by analysis can be interpreted as a statement of the value of the service potential of the asset, or its components, that is lost or consumed through its use. The Council uses the Asset Valuation Module in RAMM to calculate the replacement cost, depreciated replacement cost and annual depreciation costs of its transportation assets, except for streetlights and bridging which are valued separately.

In most instances depreciation is used as a check against other predictions of deterioration, and vice versa. However, in some cases, such as the signs asset, it serves as the best proxy for the behaviour of the asset.

The renewal works and projects in this Life Cycle Plan have principally been developed using data from asset valuations. Where possible the valuations utilise condition and deterioration modelling tools including RAMM and dTIMS for assessment of remaining useful life.

End of Life Projections

Base lives and remaining lives are determined using the methodology set out in the International Infrastructure Management Manual and are documented in the current asset valuation. A copy of this Report is included in Part 11 – Financial Summary.

Age and condition profiles are used to determine remaining useful asset lives and forward renewal programmes that are intended to maintain the overall standard of the system.

9.6 Asset Improvement and Development Plan

9.6.1 New Improvements

"New Improvements" generally refers to new works; it is also often referred to as "CapEx" (for capital expenditure) that result in additional asset capacity and infrastructure to meet:

- Changes in demand for transportation network services under the Council's control.
- The levels of service and standards that have been adopted by the Council.
- The demands imposed by growth originating from both the Council's decisions and the private sector.

Improvement works can be carried out by Council to improve current levels of service or to meet the demands of growth. Funding for a portion of Council's roading improvement activities is through its subsidised Land Transport Programme as Activity Classes 1 – Road to Zero (Safety Improvements), 4 – Walking and Cycling Improvements, and 12 – New and Improved Infrastructure for Local Roads This encompasses the NZTA Work Categories 321 to 351.

Table 9.1 – Waka Kotahi NZ Transport Agency Improvements Work Category Structure

Work Category	Work Category Name
	Local Road Improvements
321	New Traffic Management Facilities
322	Replacement of bridges and other structures
323	New roads
324	Road improvements
325	Seal extension
332	Property purchase - local roads
333	Advance property purchase - local roads
341	Low cost, low risk roading improvements
351	Resilience improvements

Level of service improvements can be to remedy current level of service deficiencies, or to meet changed levels of service adopted by Council. For example, rural seal extensions generally address current level of service deficiencies associated with unsealed roads, whereas construction of off-road cycleways addresses a new or changed level of service.

Improvement works are also vested in the Council by private developers as they complete new urban subdivisions and similar works. Conditions that require new works or upgrades can be established and applied as Financial Contributions under the Resource Management Act, as part of a resource consent,

or as Development Contributions applied under the Local Government Act 2002. Where the improvements required of a developer have recognisable benefits to the wider community the Council contributes pro-rata to the total cost of those works.

New Improvement sections of the life cycle management plans identify future new improvement works and explain the proposed future development strategy in terms of 'how' the provision of additional asset capacity will be undertaken. This is a specific requirement of the Local Government Act 2002.

In addition, the effects of new improvements vested in the Council are considered, based either on known developments or in high growth parts of the district on trends derived from data gathered during that growth.

In this context, demand forecasting is particularly important as it provides the basis for changing requirements for the service provided and related costs. Demand forecasting also needs to keep pace with the level of new improvements that are introduced and changes in the underlying existing assets.

9.7 Asset Disposal Plan

Strategy

To identify and actively manage assets which are no longer fit for purpose.

Asset Disposal

Disposal activities are associated with the removal from service of a redundant or surplus asset. Assets may become surplus to requirements for any of the following reasons:

- Under-utilisation.
- Obsolescence.
- Provision exceeds required level of service.
- Uneconomic to upgrade or operate.
- Policy change.
- Service provided by other means (e.g. private sector involvement).
- Potential risk of ownership (financial, environmental, legal, social, vandalism, etc).

To date the only significant disposals that have occurred have been associated with bridges (See Section 9), and pavements bypassed where road realignments have occurred.

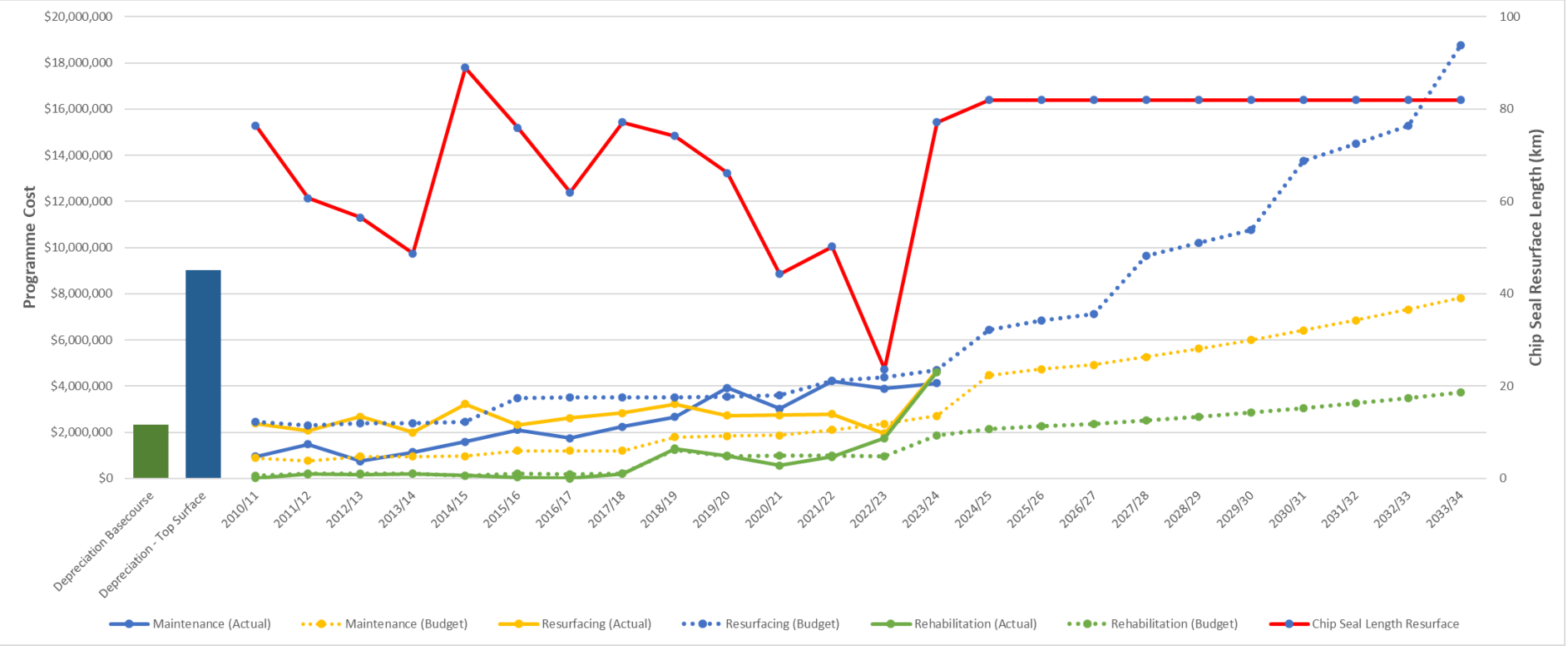
9.8 Lifecycle Funding

20 Year Funding and Depreciation

Council's approach is to develop a twenty – thirty-year renewal plan at an Asset Group level and validate the funding level required against the depreciation calculation. Effectively, the renewal plan is funded rather than the theoretical depreciation value.

An example of Council's developed Life Cycle funding strategies is illustrated in the graph below. The modelled scenario details the historic and planned investment in sealed pavement management activities, including sealed road maintenance, sealed road resurfacing and pavement rehabilitation expenditure. The graph only shows the Waka Kotahi NZTA financially assisted programme and excludes the $1million dollars of unsubsidised investment by Council for targeted pavement rehabilitations, which commenced in 2015/16. The depreciation of assets is based on the 2017 Asset Valuation.

Figure 9.10 6: Renewal Programme versus Depreciation Calculation



Source: Strategic Investment Assessment (Waugh)

Items of note include:

1. The quantity of pavement rehabilitations that are proposed are significantly less than the depreciation suggests. This highlights the need for robust condition-based Forward Works Programme development and the appropriateness of a renewals funding model. As the ONRC model is implemented further this may well be reflected in the renewal approach to low volume/access roads.
2. Resealing has been below the depreciation level and is projected to be higher in future.
3. Resealing rates are volatile but reflect a long term increase that is significant. Estimates for reseal budgets and quantities achieved will vary from year to year.

Peer Review of Lifecycle Management and Funding

As part of the development of the Programme Business Case, Council considered its renewal inputs from a range of sources:

1. Detailed asset condition, age and performance information.
2. dTIMS modelling.
3. Investment levels to date.
4. Engineers' judgement.
5. Work Input estimates.
6. Affordability (Selwyn District Council and Waka Kotahi NZTA).

Council has used rates based on actual work costs over the last three years to formulate the estimates for resurfacing and pavement rehabilitation.

9.9 Lifecycle Risk Management

9.9.1 Treating and Monitoring Risks

For a particular project or work item, the probability of failure to deliver its desired contribution to achieving levels of service is affected by several factors, including:

- Planning and design (Lifecycle) – human resource support, climatic based influences
- Construction
- Maintenance
- Operation
- Monitoring
- Renewals

All of these factors can impact on a successful outcome and will affect the lifecycle cost of the asset involved.

There is, therefore, a need to thoroughly assess the lifecycle cost of projects and Continuous Programmes and compare costs of options that are deemed to deliver the same outcome (generally as a reinstatement of, or improvement to, levels of service). Lifecycle costing is of course, a fundamental principle behind good asset management. Implementation of good planning, design, construction, maintenance, operation and monitoring will minimise the probability of failure to deliver the programme's contribution to levels of service.

9.9.2 Prioritisation of Expenditure to Manage Risks

New Assets, Operations and Management Improvements

The successful management of the Transportation activity is dependent on the coordination of a multitude of activities that generates a work programme that consists of planning, designing, construction, operation, maintenance and monitoring of the assets.

There are inevitably competing demands placed on the Maintenance, Operations and Renewals budgets and Capital (Asset) Improvement expenditure budgets that are available for the Transportation Activity. Decision making processes must ensure that expenditure is allocated fairly and wisely according to the needs of existing and future generations and in a way that is affordable.

Existing Assets

Typically, assets are replaced when there is unacceptable risk to levels of service because of:

- Asset condition
- Operability
- Vulnerability to external influences (earthquake, flood, fire etc)

In the future, subject to the availability of resources, it is intended that selection and prioritisation criteria for asset renewals will put a greater emphasis on condition, performance, risk and failure history assessment.

Currently there are sufficient processes in place to monitor road pavements (including both the pavement structure and surfacing) and bridges to ascertain the renewal programme required.

9.10 Issues

While this section of the plan requires substantial review there is a satisfactory understanding of the Lifecycle Management processes in place and experienced staff can manage the issues at hand.

Specific items identified are identified below.

Improvement Plan items

IP 9.1 Consider introduction of High-Speed Data Collection as a replacement of/addition to manual rating.

IP 9.2 Internal professional services costs have previously been calculated based on six Full Time Equivalent (FTE) positions relating to subsidised transport activities conducted under the Councils Land Transport Programme, a project to review this resourcing and identify any needs to increase in order to manage the activity properly is proposed. Ongoing.

IP 9.3 Establish a policy for surfacing treatment to determine if AC surfacing is required (or not accepted) when roads are vested, and what resurfacing treatment will be used in future.

IP 9.4 Establish a policy for applying the Extent of Network Maintenance and the levels of service that will be provided, where roads serve only one or two properties, or extend beyond the residences on rural properties. Although of a low standard, their very low use is such that they are considered uneconomic to maintain.

IP 9.5 Refine categorisation and knowledge of the responsibilities for land drains, stock water races, and water race culverts between the transportation and utilities activities, and private ownership.

IP 9.6 Improve footpath inventory and asset data and develop an indicative renewal plan.

10.0 ASSET MANAGEMENT PROCESSES AND PRACTICES

This section outlines the available information on assets, information systems and processes used to make informed decisions on how assets will be managed. It also provides details on planning for monitoring AMP performance.

Contents

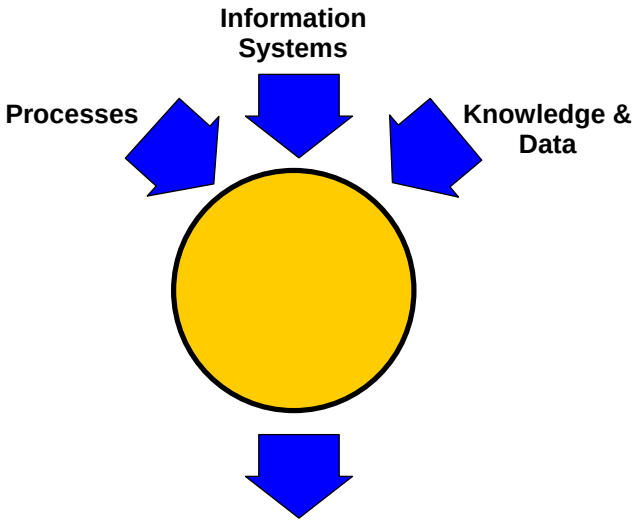
10.1 Data Management

10.1.1 Introduction

Council's Transportation Asset Management (AM) function is responsible for managing the roading assets of the community. To help identify the AM information needs of the transportation activity, it is helpful to breakdown business practice into three key AM inputs:

- **Processes** - The procedures, considerations, analysis and evaluation techniques that consider asset data and support lifecycle asset management.
- **Information systems** - The information support systems used to store and manipulate the data.
- **Data** - Data available for manipulation by information systems to produce the required outputs.

Figure 10-1: Key Asset Management Practices



The tables below set out the current and desired business practice to be developed. The AM Improvement Plan details development priorities, timetables, resources and costs.

The emphasis of the shift from current to "desired" business practice are detailed in the following tables. Desired business practices are needed to achieve best practice for the management of Council's transportation assets. Current business practise is that, achieved with the resources of time, personnel and funding currently allocated to the management of the asset. To achieve some or all of the desired practices stated, additional resources is required.

10.1.2 Information Systems

The information systems used in the roading and street services function are outlined below:

Alternative asset management systems are used by other asset managers within the Council. Linking and integration of these systems is a corporate function.

Table 10-1: Overview of Management and Data Systems

System	Current Business Practice
Asset Registers	RAMM (Thinkproject) Reliable asset registers available for most assets except berms.
Financial System	MagiQ Job costing system available, via general ledger system. Costs allocated at activity level only. Inflation adjustment application. Current valuation generated from downloaded information inventory from databases.
Maintenance Management	Maintenance records held in RAMM, direct entry by the Maintenance Contractor.
Contract Management	Maintenance standards specified in maintenance contracts. RAMM and manual works order systems for unscheduled or out of contract work.
Condition/ Performance Monitoring	Good performance & condition information for major asset groups, i.e. pavements, bridges. Records held in RAMM
Customer Enquiries	Corporate customer service system in place.
Work Planning	RAMM treatment selection analysis undertaken. Bridge repairs identified and programmed. dTIMS used for longer-term identification of renewal needs. Minor asset groups defect analysis less developed.
Risk Management	Corporate risk management strategy in place. AM plan to include risk register and analysis.
Optimised Renewal Strategy	dTIMS used to establish optimal network condition and budgets. RAMM treatment selection module available for pavements. Effective lives assigned to all asset groups.
Forward Works Programme	Forward programmes developed for major road improvement projects, seal extensions, seal widening and bridge renewal. Development based on a good assessment of needs confirmed under consultative processes. dTIMS used and verified.
Integration of Systems	Extensive use of RAMM throughout planning and operations. All databases have GIS type interfaces or functionality.
Plans and records	Hard copy plans held for most major project and improvement works. (availability reduces as further back in time). All new plans / as-builts on digital systems, & on consents information system.
GIS	GIS used for spatial representation of assets.

10.1.3 Accounting / Financial Systems

All expenditure on infrastructure assets falls into one of three categories:

- Operations and maintenance.
- Renewals.
- New improvement works and disposals.

Headline 10.1:
Requests for Service are tracked and the trends are monitored to ascertain changes in public perception and service delivery perception

Financial Management System

All Council activities are required to have their financial results reported externally in a way that complies with generally accepted accounting practice (GAAP) in New Zealand. This is currently in accordance with International Accounting Standards – IAS16. The International Accounting Standards are determined by the Institute of Chartered Accountants of New Zealand. The Finance Activity ensures that GAAP is complied with by regular updates to the Council's Accounting processes and the on-going formal and informal training and education of staff in departments throughout the Council.

The activity relies on the Council's core financial systems which include:

- Accounts payable, fixed assets, inventory, time entry, work orders, and general ledger.
- Accounts receivable, cash receipting, bank management and rates, plus inputs from other Local Government regulatory systems such as Person/Property, Infringements, Licensing, Consents.

Monthly and yearly expenditure reporting is presented to Council staff, representatives and Committees in an "accounting style".

10.1.4 Requests for Service

To assist reactive maintenance, Council deploys a Customer Service Request system via MagiQ. Customer request for service (RFS) are received through by Council during business hours and the Palmerston North call centre after hours.

RFS are presently recorded via MagiQ and forwarded to the appropriate council staff or maintenance contractor for action. The RFS are recorded with the appropriate details (name, location, issue, priority etc) to enable tracking for resolution etc.

The receiving officer/maintenance contractor is required to action the enquiry within a specified time period. Once the issue is resolved to council's standards, the details are updated with completion time/date and any issues etc.

The information in this system has been interrogated to produce the information in Section 6 of the AMP.

10.1.5 Asset Management Systems

10.1.5.1 *RAMM Software*

Council's main inventory system for its transportation assets is the RAMM database. The RAMM system is web-based and stored on a Microsoft server based in Australia. The system is available simultaneously to users in the Council, its contractors, consultants and data-maintainers.

First introduced in the late 1980s as a tool for recording asset inventory information on local authority and roads and the state highway system it, or a system like it became a pre-requisite for Government financial assistance (subsidy) in the mid-1990s.

Headline 10.2:
RAMM is the core tool for Transportation Asset Management and Contract Management

RAMM has provided a uniform national inventory system and is also used by the NZ Transport Agency to obtain consistent data and condition reporting over the country's roading network.

Council first started implementing RAMM in 1991, and by 1997 the system had evolved to a standard and complexity that its management required it to be professionally managed by specialist consultants. Contract 546, RAMM Professional Services, and its subsequent replacement Contract 861 RAMM and dTIMS Professional Services, have ensured a very robust and high quality database.

The database is updated annually to enable forward work programmes to be developed via the Treatment Selection process and the predictive monitoring software dTIMS. These programmes provide analysis, prediction and costing of major pavement renewal works including reseals and sealed road pavement rehabilitations.

Road network maintenance data is entered directly by the contractor and used for asset management and contract management purposes. The RAMM and dTIMS professional services provider undertakes quality checks on the data entered by the maintenance contractor.

Council also uses the RAMM system to undertake asset valuation using its Asset Valuation Module. Streetlight and bridge data is held within RAMM. The streetlight portion of RAMM is managed by the Streetlight Maintenance and Management contractor Connetics.

Up to 2023 Council has outsourced many of the database management and data collection activities. The core tasks are now undertaken by staff and data collection/analysis split into specialist contracts where needed/.

Inventory
An extensive range of inventory items can be recorded using RAMM under the following broad headings:

Table 10-2: RAMM Inventory Groups

Group	Inventory
Carriageway	road name/location descriptions/dimensions summary traffic volumes and loads ownership
Treatment lengths	condition maintenance activities pavement type treatment-intervention cots
Traffic	traffic volume traffic mix
Carriageway Surfacing	description/ dimensions location/age/surfacing
Pavement Structure	pavement layer rehabilitation
Kerbs and Channels	location type descriptions/dimensions ownership
Footpath and Berms	location descriptions/dimensions surfacing ownership
Drainage	dimensions/type location/maintenance ownership
Traffic Facilities	location/type quantity/maintenance ownership
Bridges and Major Culverts	components dimensions restrictions ownership
Route Data	features location/type
Street Lighting	pole location / material / type / dates / ownership lamp type location /dates / ownership bracket type / dates
Asset Valuation	ORC ODRC expected life RUL effect of condition on life replacement asset type how asset element is measured (volume, area etc) predicted depreciation
User-defined items	In addition RAMM can cater for an unlimited number of user defined items

Street Lighting
RAMM includes a software module (previously called SLIM — Street Lighting Inventory Module) that holds all key information on streetlights. Information held includes type, ownership and location details for poles, brackets, luminaires and lamps ("bulbs").

As part of the Streetlight Maintenance contract, the contractor is required to use and maintain this database, updating it with details of any new lights installed and recording all other asset changes that have occurred.

All streetlights are linked to RAMM via RAMM Road ID. The Contractor module of the software allows the contractor to maintain the streetlight inventory and record its maintenance history. It also provides call logging, dispatch information for repairs and details used to manage contract claims.
The call logging module allows production of work instructions to repair crews. Details of dispatches can be tracked from their initial entry through to completion with current status always available.

The contractor is able to enter the agreed contract schedule along with rates, internal costs and crew payment rates. All claims for work performed are entered against dispatches in addition to claims for other activities such as bulk lamp changes.

Data Assessment & Analysis
The street lighting module includes "decision cube technology" which allows choice on how and what data is displayed. This allows data to be manipulated in order to perform asset management functions over the whole range of data held. For example, comparisons can be made against electricity usage and cost, component performance, contact claims, lamp failures etc.

RAMM also has built-in functionality:

- To record requests for service and track their progress and completion.
- To issue works orders.
- For pending work to be recorded by location and asset element.
- For the contractor to sign-off repairs as they are completed and update the asset data base accordingly.
- For collection and updating of data.
- For interpretation of problems and issues on-site – though the availability of all data held on the asset element.

RAMM Condition Rating:
Condition rating is part of the RAMM system:

- The road network is divided into sections with consistent construction types and traffic loading. Sections are then further subdivided (100 metres for roughness rating and 50 metres of visual inspection every 500 metres).
- Each sealed road section's condition is assessed and recorded, based on a visual assessment of pavement condition and roughness data from a mechanical / electronic survey of the road. Roughness is measured using a NAASRA / IRI roughness meter or laser profilometer attached to a vehicle while a team of two on foot usually collects visual data.

Road condition is measured by recording absolute values for defects rather than condition indices or scores. For example, the number of potholes is recorded in each inspection length. The defects measured are cracks, deformation, surface texture, disintegration, edge defects and surface roughness.

Condition of other asset groups is stored in appropriate spreadsheets, i.e. footpaths, kerb and channel etc.

RAMM Treatment Selection
The absolute values of defects and distress are used in a costing algorithm in RAMM which takes into account the faults measured, carriageway roughness, traffic volumes and maintenance cost to determine overall costs of alternative treatments. All unit costs are determined by the user.

Treatment alternatives vary depending on the type of pavement, as outlined in the following table, and are reported for the current and subsequent years.

Table 10-3: Outline of RAMM TSA Options

Flexible Thin Sealed Pavements	Continued routine maintenance Resurfacing Smoothing Strengthening
Structural Asphaltic Pavements	Reconstruction Milling and replacing unstable surface mix Thin overlay Thin overlay over a stress absorbing membrane layer (SAMI) Stress absorbing membrane reseal (SAM) Conventional reseal Continued general maintenance
Rigid Pavements	Rigid pavements are not currently catered for in the analysis module of RAMM

Treatment Selection Logic
Treatment options are ranked based on BCR for pavement renewals and priority indicators (PI) for resurfacing. Priority indicators (PI) are calculated by dividing the additional cost in maintaining a pavement for an additional year by the cost of resurfacing, to give a first-year rate of return. The need for renewal of a pavement is checked against the required BCR. If the BCR is not satisfied it is then checked for a reseal. If a reseal cannot be justified, then the chosen treatment is to continue maintenance.

A preferred pavement renewal option and a preferred non-pavement renewal option is determined and then the two preferred options compared to determine the overall preferred option.

Life Cycle Cost and Pavement Performance Models
The RAMM system does not include performance prediction modes and life cycle costs are not determined. However, dTIMS provides the ability predict long term pavement deterioration and to optimise treatment selection in conjunction with sound engineering judgement.

Bridges – Inventory
All major inventory information on bridges is held within a separate database developed and maintained by the Council's bridging advisors, BECA Consultants Ltd.
This data includes:

- General — name, foundations type, superstructure type, and deck type.
- Dimensions — span length, width and waterway area.
- Loadings — design loading, restrictions and posted limits.

- Inspections — date, full inspection data, general assessment (appearance etc.), superstructure condition, piers and abutments and waterway adequacy.

Consideration is being given to moving this data to the RAMM database.

Bridges – Condition Assessment
Each bridge was surveyed and inspected at least once every 6 years. All inventory information is captured and a full inspection performed in accordance with NZTA bridge assessment criteria. This provides the base information necessary to manage repairs and maintenance of the bridges. Further information on Bridges can be found in the Lifecycle Section of this report.

Repairs are prioritised based on the following classifications:

Table 10-4: Bridge Inspection Classifications

Classification	Meaning
1	Urgent
2	Priority
3	Routine

Experienced personnel undertaking the bridge inspections assign the repair priorities. Priority levels are set on the basis of:

- Public Safety.
- Traffic movement.
- Maintaining structural integrity.
- Future costs if the work is not done.

Subsequent inspections can be added to the database, so a history of inspections is held for future reference. This is particularly important in the assessment of the performance of the asset in terms of particular trends and demands that develop and the corresponding effect on the asset.

The bridge inspection results are also used by the inspectors to assess the load-carrying capacity of each bridge. Where the capacity is reduced by a bridge's condition to less than normal highway loadings or a restriction on heavy-vehicle speed is required then the Bridge Inspection report includes an appropriate recommendation, in accordance with Section 11 of the Heavy Motor Vehicles Regulations 1974, regarding the imposition of restrictions.

Bridges in very poor condition are scheduled to be inspected at shorter intervals, based on their condition and expected rates of deterioration.

Bridges – Data Use
The Council's bridging information is readily downloaded into spreadsheets for further manipulation. Costs can be attributed to the repairs and from this forward maintenance strategies can be determined with likely costs. This is then used to form contract work instructions. Section 9 gives a more detailed breakdown of the current condition of our bridges.

Usually, all the work identified cannot be undertaken in one year due to budgetary constraints. Under the repair prioritisation system, the most urgent repairs are carried out first, with less urgent repairs programmed over subsequent years.

10.1.5.2 *dTIMS*

RAMM has some condition prediction functionality, though this is relatively limited. The Association of Local Government Engineers (INGENIUM), through a subcommittee titled RIMS, led the development of pavement deterioration modelling software to assist asset managers with multi — year programming of road works. The selected system is called dTIMS.

dTIMS, or more correctly NZ dTIMS, is a computerised pavement deterioration modelling tool. dTIMS software has been developed as a national application for predictive modelling of pavement assets. It allows future condition, different budgets and alternative levels of service (in terms of renewal intervention levels) to be tested and optimised. It is a very flexible system that enables the user to alter the framework or models to suit their locally calibrated conditions.

The system also has the advantage of being able to forecast the need for works at treatment length level as well as at network level. This system is being implemented by Council. It is now used throughout NZ by most RCA's, including the NZTA and by private contractors with long-term performance specified maintenance contracts for road maintenance.

dTIMS uses data stored in RAMM such as traffic volumes and pavement strength to extend the predictive capability of future network condition and treatment needs over a long-term period (typically 20 years). Treatments can be triggered using intervention levels or on an economics-based approach and include reseals, smoothing, strengthening and reconstruction options. These can be justified as full rehabilitation or Area Wide Treatments (AWT's).

NZ dTIMS mainly uses the Highway Development and Management Model (HDM) produced by the World Bank. These follow a deterministic approach to predict pavement deterioration. The models have been calibrated using the available data for NZ. Additional calibration work is being carried out on regional models to ensure the results reflect local networks behaviours.

Network calibration is generally based on analysis of local calibration sites and long-term pavement monitoring sites. dTIMS can provide the following information to the user:

- A 10-to-20-year maintenance programme at treatment length level that optimises maintenance treatments (strengthening, smoothing, reseal and routine maintenance, activities) for five budget scenarios (unlimited, high, medium, low and very low). Treatment types and costs are based on local practice. Benefits are measured in terms of road user costs based on models in the NZTA's NZ Project Evaluation Manual.
- The condition of the pavement (roughness, rutting, cracking, etc) is predicted for the network over the forecast period (20-years) based on proposed intervention levels and the various budget scenarios analysed.
- The model is significantly more advanced than the RAMM Treatment Selection Algorithm however all results still need to be confirmed in the field before renewal programmes are finalised.

While additional calibration is needed for the models, there is also a need to improve the quality of the data they use. This is because in the short term the predicted treatments are be influenced more by the data used in the modelling than by the different rates of pavement deterioration determined by the calibration factors. Established RAMM procedures for the measurement of distresses were generally adequate for use in dTIMS, except for rutting, the RAMM rating procedures have been modified to include mean and standard deviation of rut depth to address this deficiency.

Other key data required for a dTIMS analysis includes layer thickness, construction date, sub grade strength and maintenance costs. RAMM contains up to date reseal dates. Where this data is not available, assumptions based on local knowledge, falling weight Deflectometer (pavement strength) testing, desk study of construction drawings, or a mixture of these are made to ensure results are reasonable. These assumptions are often introduced into dTIMS outside of RAMM. The appropriateness of traffic forecasts and data collection should also be reviewed.

Once RAMM has been updated with all currently available information, the dTIMS files are automatically exported from RAMM and dTIMS outputs can be similarly inputted into RAMM for forward works programming if required.

Implementation

Council has purchased the core software for dTIMS. An implementation programme has been developed for dTIMS; it concentrates on the critical area of determining pavement strength for the network. Currently no information exists on this and will have to be captured through field — testing. Due to practicalities and expense, information will have to be obtained on a representative basis and applied over the whole network.

Initially this will involve testing main routes such as Arterial, Primary and Secondary Collector roads which are subject to the highest traffic loadings hence potential faster rate of deterioration, followed by Local roads. It is also likely classified traffic counts will need to be carried out to determine more accurately the mix of vehicles in the traffic stream and the effect on the pavements from heavy vehicles on long term pavement performance.

Data Quality

The assessed current completeness of asset management data is as follows. Consultants perform an annual review of the accuracy of RAMM data annually. These reviews provide confidence that Council's asset data is accurate.

Table 10-5: Data Completeness and Accuracy

Asset Data	Completeness and Accuracy
Asset Classification	Suitable asset classification system adopted for asset
Asset Identification	Unique ID numbers allocated in RAMM for most assets
Asset Attributes, Spatial Data	Aerial photos available for assets in Selwyn and all rural towns. Plans available for most bridges and recent construction projects
Asset Attributes, Textual Data	Pavements -> 100% complete & 99.8% accurate (Te Ringa Maimoa) Bridges -> 100% complete & ~95% accurate (BECA inspection report) Footpaths -> 94.7% complete & 94.7% accurate (Te Ringa Maimoa) Streetlights-> 96.8% complete & 96.7% accurate (Te Ringa Maimoa) Kerb & channel -> 95.2% complete & 99.1% accurate (Te Ringa Maimoa) Signs -> 62.6% complete & 92.9% accurate (Te Ringa Maimoa) Markings -> 100% complete & 99.6% accurate (Te Ringa Maimoa) Minor culverts -> 88.8% complete and 89.7% accurate (Te Ringa Maimoa)
Maintenance Data	Routine maintenance activity and costs available from contracts Unscheduled maintenance work records available in hard copy form
Historical Condition & Performance Data	Good historical records for pavements and bridges only
Future Prediction Data	Good knowledge of future demographic and traffic trends
Life Cycle Costs	Renewal & new improvements costs for common items known from recent experience

Data quality assessments have become a key feature of the Road Efficiency Group/Te Ringa Maimoa initiative. This has enabled transparent and comparable processes so efforts can be made where needed most. (see section 10.4)

10.1.5.3 *Geographical Information Systems (GIS – MapViewer)*

Council has used Map Viewer as its GIS system. GIS can display data exported from the RAMM system, and RAMM has GIS type functionality included. The GIS system is available to all Council Staff (at all Service Centres) and used extensively through all Councils activities.

Headline 10.3:
Asset Management is primarily the responsibility of the Asset Manager Transportation, the Service Delivery Team are focussed on operations.

10.1.6 IT Responsibility

The responsibility for asset information security rests with the Council's IT department administrators. Data is backed up at regular intervals and backup files are stored in secure lockups. Each system has a stepped password access system in place, allowing some staff to view the data only, and others to add and edit it. Data manuals are available that explain the various procedures.

10.1.7 Contract Management Systems

Contracts are managed using RAMM as well as paper-based records and systems. Management responsibility is assigned to specific staff members who are responsible for contract supervision and contract payments within their delegated authority.

Contracts contain detailed specifications, and those in period contracts continually evolve, being adjusted to reflect changes in best appropriate practice, need and other circumstances.

10.1.8 Organisational Structure

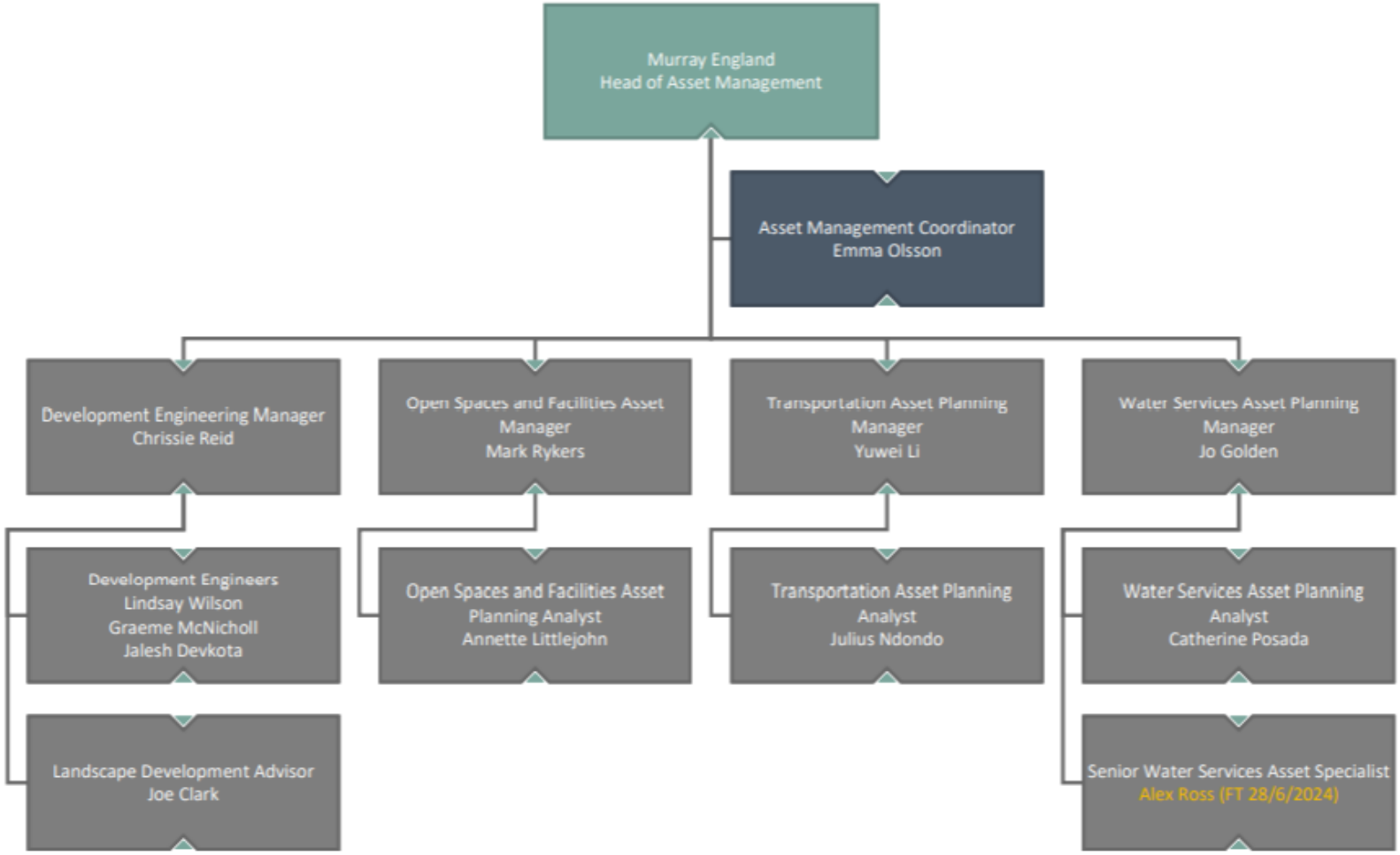
10.1.8.1 *Staff Structure*

Council's road and bridge assets are managed by the Asset Manager Transportation who works with the Service Delivery Unit's Transportation Team Leader and other staff to discharge the responsibilities for operational, daily, short-term, medium term and strategic planning of the road network and its maintenance. Road network professional services are largely delivered by in-house staff, who are accountable to the Service Delivery Manager.

The staff structure of the Council is outlined in Figure 10-2.

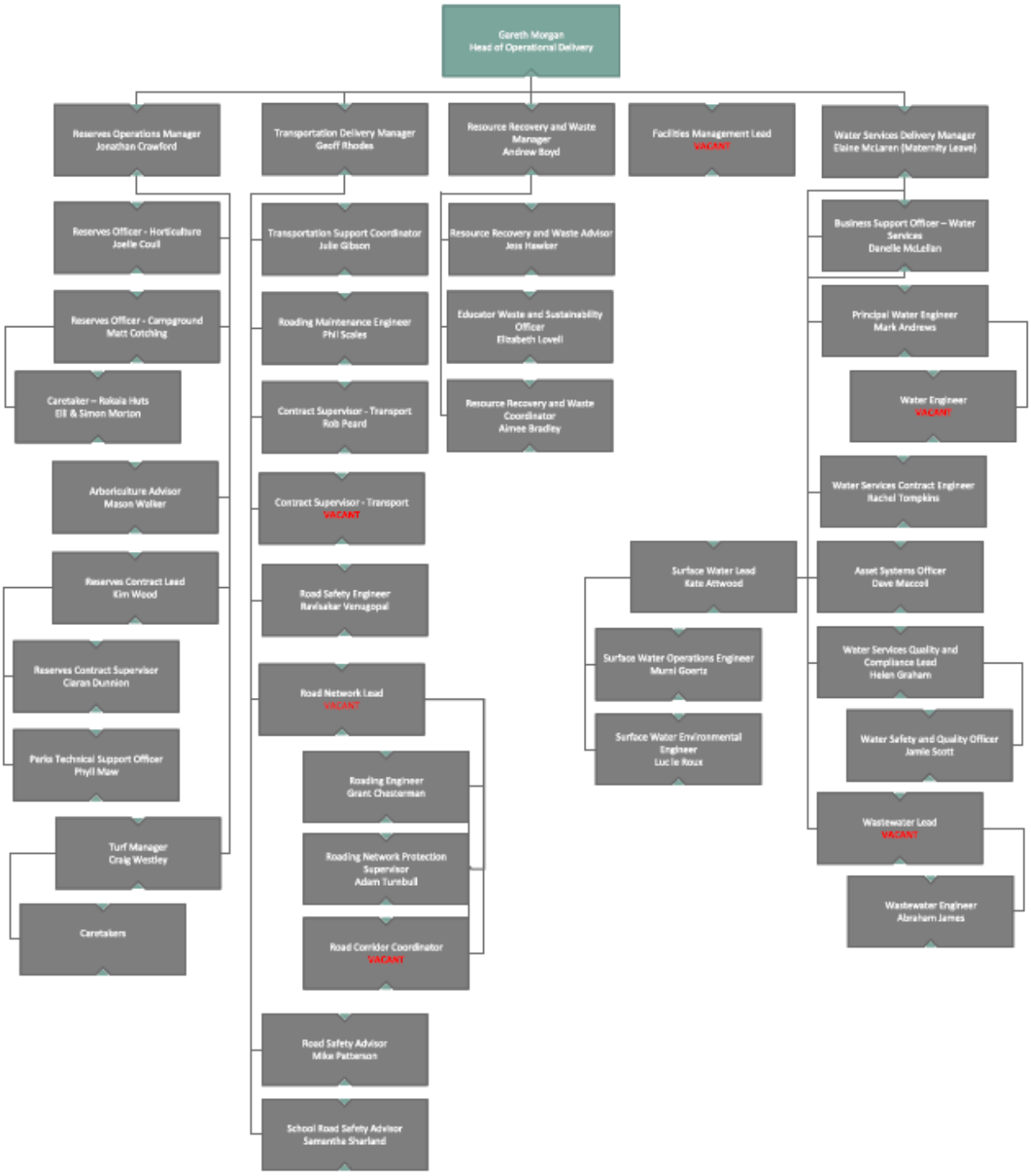
There are a number of cross- departmental links that are important to the correct functioning of the roading team and management of the roading network. The most significant of these are with the Financial and Administration Services staff.

Figure 10-2: Asset Management Staff Structure



Source: SDC Organisational Chart

Operational & Delivery Staff Structure



10.1.8.2 *Staff Competencies*

An important measure of the quality of Council's asset management is the ability, experience and qualifications of the individuals and companies involved in its preparation. Council employs a wide range of technical staff appropriately qualified to carry out the asset management function. Formal qualifications range from NZ Certificate in Engineering to Chartered Engineer. Staff experience in Asset Management ranges up to 30 years.

In this context, competency refers to applied knowledge and not just the knowledge itself. Competencies can be described as:

"The behaviours that employees must have, or must acquire, to input into a situation in order to achieve high levels of performance"

There are a large number of competencies that the Council requires of its staff in order to effectively manage its transportation network assets. These are not statements of current individual's skills or competencies. Rather, they are statements of the Council's desired competency in the areas and subjects detailed:

- Establish the gaps between the competencies of current staff and the competencies required in the organisation. These gaps will be used to guide staff training and development programmes.
- Inform the recruitment process for staff involved in road asset management when new positions are being filled or replacement staff sought.

10.1.9 Council and Committee Structure

Council's committee structure is extensive and in addition to the Mayor and Councillors there are two Community Boards (Malvern and Selwyn Central) with delegated authority from the Council to make decisions on specific matters. These boards are established under the Local Government Act 2002.

Each township and rural community also has a local Community committee elected every three years at a specially convened public meeting. The purpose of the committee is to consult with its community and relay local concerns and preferences to the Council or Community Board. Township services and beautification projects are generally undertaken in conjunction with, or at the behest of, local township committees.

Community halls and public reserves in each area are run by local hall committees and reserve committees respectively with funding and support from the Council. These committees are elected every three years at specially convened public meetings. However, they generally have no influence on transportation matter or matters affecting the network, beyond those enjoyed by property owners. Source: http://www.selwyn.govt.nz/committees/committees-jun2008.mht accessed 10 March 2009

10.2 Quality Assurance

10.2.1 Audits

To establish and ensure the on-going improvement of the quality of Council's systems, audits of financial, technical and performance systems need to be routinely implemented.

10.2.2 Financial Audits

The Local Government Act requires that independent annual financial audits be undertaken on the operations of Council – such audits may include all significant activities such as asset management planning. The auditor's opinions are included in Council's Annual Report.

10.2.3 Information System Audits

System audits should be undertaken at regular intervals to assess the appropriateness and performance of asset management systems, data and processes.

Audits should identify the current status of asset management processes, systems and data and produce targets for Asset Management practices to be achieved in following years. A programme of actions is included for asset data through the Transport Asset Information Services Contract.

10.2.4 Technical and Investment Audits

Technical and investment audits (peer reviews) are undertaken by NZTA undertaken at regular intervals to assess and identify compliance with statutory and procedural requirements.

Council may undertake additional technical audits using external or internal reviewers as part of AMP preparation.

10.2.5 Performance Audits

Performance audits establish whether the stated objectives for the operation of the asset have been achieved.

Measurement of the success of the operation of the asset will be assessed using the results of:

- Customer satisfaction surveys.
- Key service criteria objectives compliance.
- Benchmarking surveys.

Further information KPI's can be found in Section 6 of the Activity Management Plan.

10.2.6 Roading Standards and Guidelines

Recently Council has prepared a comprehensive suite of design guides and codes of practice. This informs planning undertaken for developments as part of the Resource Consents process. Adherence to these codes is expected to improve the quality and consistency of Council's portfolio of assets.

10.3 The Asset Management Processes

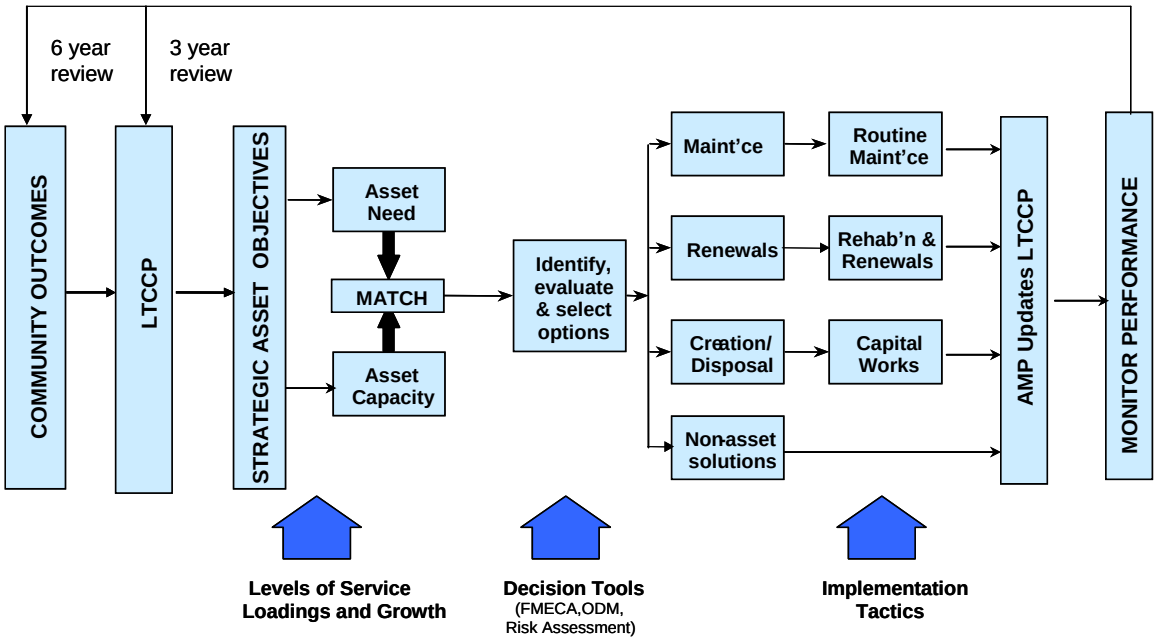
The asset management process is intended to deliver agreed levels of service in the most cost-effective way to present and future customers. Managing the transportation network infrastructure is simply one of the inputs to this process.
At the highest level, the services to be delivered and standards to be achieved are those that contribute towards the achievement of the community outcomes in Council's Long-Term Plan.

Gaps between required standards and services and the ability of the network to deliver them are identified and processes are put in place to manage these gaps within acceptable margins. In managing these gaps both asset solutions (such as new or enlarged asset elements) and non-asset solutions (such as use reduction programmes) are considered.

Decisions on the option to be followed in any particular instance are based on a range of factors such as risk assessments, legal requirements, whole life costs, customer approval ratings and the ability of the community to pay for system improvements. The detailed considerations behind these decisions are not made or detailed in this Plan; rather, they occur during the early stages of the projects' development as determined by the complexity, scale and potential effects of the problem / issues and the options available to address them.

The Asset Management Process is summarised as:

Figure 10-3: Asset Management Planning Process



10.4 Data Quality Report

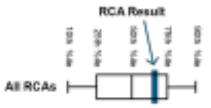
Te Ringa Maimoa has prepared a Data Quality Report allowing Councils to see where they sit for different criteria relative to the other Road Controlling Authorities in New Zealand. Overall Selwyn District is doing relatively well in most criteria and there are no significant data gaps, rather ongoing improvement is required.

Council will develop a process to ensure that it is in the "green" for all criteria below.

Reports can be viewed by registered users at https://transportinsights.nz

2022/23

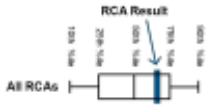
Selwyn District Council
Asset Management Data Quality Report



Cat	Sub	Ref[1]	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend[2]	Major Issues / Minor Issues / Expected Standard
Network	Carriageway	CWAY1	Road network data complete	Accuracy	High	AMENITY, COST EFFICIENCY, SAFETY		99.6	—	
		CWAY4	ONRC categories are assigned	Completeness	High	AMENITY, COST EFFICIENCY, SAFETY	✔	97.9	—	
		CWAY7	Sealed/unsealed network correctly defined	Accuracy	High	AMENITY, COST EFFICIENCY, SAFETY	✔	96.8	—	
		CWAY8	ONF categories are assigned	Completeness	High	AMENITY, COST EFFICIENCY, SAFETY		100.0	—	
		CWAY2a[3]	Rural number of lanes matches carriageway width	Accuracy	Low	AMENITY, COST EFFICIENCY, SAFETY	✔	99.9	—	
		CWAY2b[3]	Urban number of lanes matches carriageway width	Accuracy	Low	AMENITY, COST EFFICIENCY, SAFETY	✔	98.5	—	
		CWAY6a[3]	Rural carriageways are generally not short	Accuracy	Low	AMENITY, COST EFFICIENCY, SAFETY	✔	93.2	—	
		CWAY6b[3]	Urban carriageways are generally not short	Accuracy	Low	AMENITY, COST EFFICIENCY, SAFETY	✔	99.8	—	
	Treatment Length	TREAT1	Treatment Length dimensions match sealed area	Accuracy	High	AMENITY		96.1	—	
		TREAT5	Treatment Lengths match renewals	Timeliness	High	AMENITY	✔	100.0	▲	
		TREAT3	Treatment Lengths match major surfaces	Accuracy	Moderate	AMENITY	✔	92.5	—	
		TREAT2a	Treatment Lengths are generally not short	Accuracy	Low	AMENITY	✔	92.6	—	
		TREAT2b	Treatment Lengths are not too long	Accuracy	Low	AMENITY	✔	83.7	—	
Asset Inventory	Pavement & Surfacing	PAVE1[4]	Achieved pavement renewal programme as-built	Timeliness	High			78.3	▲	
		PAVE2[5]	Pavement layer records have valid attribute data	Accuracy	High			0.0	NEW	
		PAVE3[5]	Pavement layer records with Work Origin	Completeness	High			100.0	—	
		SURF1a[4]	Achieved chipseal resurfacing renewal programme as-built	Timeliness	High			93.7	▼	
		SURF1b[4]	Achieved asphaltic concrete resurfacing renewal programme as-built	Timeliness	High			93.7	NEW	
		SURF2	Surface records have valid attribute data	Accuracy	High			99.8	—	
		SURF3	Surface records correctly located	Accuracy	High		✔	100.0	▲	
		SURF4	Surface records with Original Cost	Completeness	High		✔	100.0	—	
		SURF5	Surface records with Work Origin	Completeness	High		✔	100.0	—	
		SURF6	Surface records newer than pavement	Accuracy	Moderate		✔	81.8	—	

2022/23

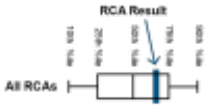
Selwyn District Council
Asset Management Data Quality Report



Cat	Sub	Ref	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend	Major Issues / Minor Issues / Expected Standard
Asset Inventory	Pathway	FOOT3	Footpath data valid	Accuracy	Moderate			89.0	—	
		FOOT5	Footpath asset known	Completeness	Moderate			94.7	—	
		FOOT2	Footpath asset records maintained	Timeliness	Low			12.9	▼	
	Drainage System	DRAIN3	Culvert data valid	Accuracy	Moderate			89.7	—	
		DRAIN5	Culvert assets known	Completeness	Moderate			88.8	—	
		SWC3	SWC data valid	Accuracy	Moderate			99.1	—	
		SWC5	SWC asset known	Completeness	Moderate			95.2	—	
		DRAIN2	Culvert asset records maintained	Timeliness	Low			9.2	—	
		SWC2	SWC asset records maintained	Timeliness	Low			15.7	▼	
	Traffic Facilities & Streetlights	LIGHTS3	Streetlight replacement activity	Timeliness	Low			9.4	▼	
		LIGHTS4	Streetlights data valid	Accuracy	Low			96.7	—	
		LIGHTS5	Streetlights assets known	Completeness	Low			96.8	—	
		RAIL2	Railing asset records maintained	Timeliness	Low			16.0	NEW	
		RAIL3	Railing data valid	Accuracy	Low			91.8	—	
		RAIL4	Railing assets known	Completeness	Low			15.0	▲	
		SIGNS3	Sign replacement activity	Timeliness	Low			0.4	—	
		SIGNS4	Sign assets known	Completeness	Low			62.6	—	
		SIGNS5	Sign data valid	Accuracy	Low			92.9	—	
	Structures	RETAIN3	Retaining wall data valid	Accuracy	Moderate			NA	NEW	
		RETAIN5	Retaining Wall assets known	Completeness	Moderate			NA	NEW	
		RETAIN2	Retaining wall asset records maintained	Timeliness	Low			NA	NEW	
Maintenance Activity	Maintenance Activity	MAINT2	Complete pavement and surface maintenance activity	Timeliness	High	COST EFFICIENCY	✓	12.0	▲	
		MAINT4	Correctly located pavement, surface, shoulder and drainage maintenance activity	Accuracy	High	COST EFFICIENCY	✓	99.7	—	
		MAINT6	Level of pavement, surfacing, shoulder and drainage maintenance activity known	Completeness	High	COST EFFICIENCY		100.0	—	
		MAINT1	Consistency of pavement, surfacing and shoulder maintenance activity units	Accuracy	Moderate	COST EFFICIENCY		1.8	▲	
		MAINT3	Pavement, surfacing, shoulder and drainage maintenance activity known	Completeness	Moderate	COST EFFICIENCY		98.4	—	

2022/23

Selwyn District Council
Asset Management Data Quality Report



Cat	Sub	Ref[1]	Metric Description	Dimension	Importance	ONRC Customer Outcome	ONRC Metric	Result	Trend[2]	Major Issues / Minor Issues / Expected Standard
Condition	Pavement & Surfacing	RATING1	Road rating data current	Timeliness	High			9.4	—	
		ROUGH1	Roughness survey within 2.5 years	Timeliness	High		✓	97.8	NEW	
		ROUGH2	Roughness data has valid location	Accuracy	High		✓	100.0	—	
		RATING2[3]	Rating data locations valid	Accuracy	Moderate			99.9	—	
		HSD1	HSD rutting survey within 3 years	Timeliness	Low			80.4	▼	
		HSD2	HSD texture survey within 3 years	Timeliness	Low			80.4	NEW	
		HSD3	HSD geometry survey within 5 years	Timeliness	Low			80.4	NEW	
	Pathway	FOOT4	Footpath condition within 6 years	Timeliness	High	AMENITY		98.2	▲	
	Drainage/Kerb	DRAIN4[3]	Culvert condition within 6 years	Timeliness	Moderate			94.7	—	
		SWC4[3]	Surface water channel condition within 6 years	Timeliness	Moderate			4.5	▲	
	Structure	RETAIN4	Retaining wall condition within 6 years	Timeliness	Moderate			NA	NEW	
Demand/Use	Traffic Count	COUNT1	Well targeted traffic count programme	Completeness	High	AMENITY, COST EFFICIENCY	✓	82.4	—	
		COUNT3	Traffic loading understood	Completeness	High	AMENITY, COST EFFICIENCY	✓	24.4	▼	
		COUNT2	Traffic count programme activity on sealed network	Timeliness	Moderate	AMENITY, COST EFFICIENCY	✓	39.6	▲	
	Traffic Estimates	ESTIM1	Network has traffic estimates	Completeness	High	AMENITY, COST EFFICIENCY	✓	100.0	—	
		ESTIM2a[3]	Traffic estimates are maintained (High Volume to Arterial)	Timeliness	High	AMENITY, COST EFFICIENCY	✓	100.0	—	
		ESTIM2b[3]	Traffic estimates are maintained (Primary and Secondary Collectors)	Timeliness	High	AMENITY, COST EFFICIENCY	✓	100.0	—	
		ESTIM2c[3]	Traffic estimates are maintained (Access including Low Volume)	Timeliness	High	AMENITY, COST EFFICIENCY	✓	100.0	—	
		ESTIM4	Considered traffic loading	Completeness	High	AMENITY, COST EFFICIENCY	✓	100.0	—	
		ESTIM5	Latest estimates align with counts	Accuracy	High	AMENITY, COST EFFICIENCY		96.5	—	
Crash	Crash Data	CRASH1	Crash data is recent	Timeliness	Moderate	SAFETY	✓	0.0	NEW	
		CRASH2	Crash records with valid location	Accuracy	Moderate	SAFETY	✓	99.9	—	

Notes:

1 - Metric references denoted with a letter at the end or with a superscript 1 are paired with other metrics. The paired metric results are aggregated to report as a single indicator in the charts on page 1. The Metric Library shows which metrics are paired.

2 - Trend indicators show the relative change in metric results compared to the previous annual report. An up arrow represents an improvement in the metric of at least 5%, a down arrow for a decrease of at least 5%, and a no change indicator if the result change is between a decrease of 5% and an improvement of 5%. An indicator of "New" is displayed for metrics that had no reported result last year, even if the current year's result is 0.0.

3 - Some metrics may not be applicable to a network, ie no new carriageways have been added to the network in the reported period. These will display a result of "NA" and will not be coloured in line with the grading ranges. These also do not contribute to the results on page 1.

4 - A result of "NA" is shown when both the achieved quantity recorded in TIO and the as-built quantity recorded in RAMM are NULL or zero. NA results will not be coloured in line with the grading ranges and do not contribute to the results on page 1.

10.5 Issues

The improvement items below relate specifically to AM Processes and Practices.

Improvement Plan Items

IP 10.1 Facilitate Staff training opportunities including:

- Introduction to new AMP
- AM Generally
- Specific to AM components (e.g. Risk Management) as identified elsewhere

IP 10.2 Undertake competency assessment to ascertain skill set within the wider team and identify a process to fill skill and resource gaps

IP 10.3 Improvements to measurement systems to support ONRC and mandatory performance measures.

IP 10.4 Data quality standards and methodology review (2024 AMDS implementation)

IP 10.5 Document data management processes as they come in-house

11.0 FINANCIALS

Update in progress. Please refer to Program Business Case.

12.0 PLAN IMPLEMENTATION

This section details the improvements to Asset Management within Council that will lead to an increase in confidence in the management of the assets.

Contents

12.1 Council Commitment to Asset Management

An important component of this Activity Management Plan is the recognition that it is a "live" document in need of continual monitoring, change and improvement.

This section sets out plan improvement and monitoring procedures. It is acknowledged that NZTA requires the implementation of this Improvement Plan and this will likely be a condition of investment for the 2021 NLTP.

12.2 Previous Improvement Programme Achievements

Asset management programmes must be adequately resourced to deliver the identified improvements required to keep plans and processes current with evolving practice.

The 2018 Improvement Plan has been prepared based on current Business Case Approach and ONRC thinking. Some reprioritisations of Improvement Plan items may occur as the sector thinking develops and matures.

2009 – 2012
Some key projects have been implemented. Some improvements have not been carried out as a result of resource and funding issues.

Responding to the Earthquake events became the focus of Council's activities and non-urgent items were reprioritised accordingly. The direction of collaborative planning changed as the role of the Canterbury Earthquake Recovery Agency unfolded.

The 2009 plan details an extensive list of projects which in hindsight would not have been achievable, even without an earthquake event.

2012 - 2015
New reporting process shows progress made (see below). Items incomplete or transferred to new IP are excluded.

Introduction	2.1	Review maintenance responsibility agreements with Christchurch City Council and Waimakariri District Council.	Contained within Council's Policy Manual which was revised in 2014.	Include as resolved in AMP.
Growth	7.3	Reconvene MOT Travel Survey Partners and agree on the forward plan, or abandon the project should be regarded as no longer relevant	Collaboration Group have agreed (Jan 2015) to continue	Develop programme and tools to utilise this data more effectively.

2015 – 2018

Section	IP Ref	Item	*Status 14/12/17*
Introduction	2.5	Implement ONRC Transition Plan.	*Superseded by new REG guidance.*
Introduction	2.6	Review comments on SDC hierarchy once ONRC fully implemented, reference District Plan hierarchy.	*Completed.*
Strategy	3.0	Refer also Walking and cycling strategy and action plan.	*Completed.*
LoS	6.3	Revise section to include increased ONRC integration.	*Completed*
LoS	6.4	Establish methodologies for mandatory performance measurement.	*Completed*
LoS	6.5	Revise operational KPIs for next road maintenance contract.	*Completed*
Growth	7.3	MOT Travel Survey Partners - continuation of process.	*Superseded. No longer in the process.*
Growth	7.7	Update this section and associated asset issues as CSM2 is established.	*Completed.*
Risk	8.7	Further review of funding and emergency reserve required for future events (noting this will not be funded in the rapid growth period).	*Clarification from FAR review suggests SDC will need to be able to fund works associated with events that are not 'extraordinary' Due to current priority on growth projects this will be reviewed as part of the 2018 LTP development.*
Lifecycle Management Strategy	9.204	Prepare asset information and management plan for bus shelters and any other Passenger Transport support infrastructure.	*Completed.*
Lifecycle Management Strategy	9.205	Develop Extent of Network Maintenance Policy.	*Has not remained a priority, also affected by public access issues.*
Lifecycle Management Strategy	9.206	Further revision of assets lives, consider stratified approach in line with ONRC groups.	*2014 review has informed renewal programme sufficiently. No further specific reviews proposed.*
AM Processes and Practices	10.1	Facilitate Staff training opportunities including 1. Introduction to new AMP 2. AM Generally 3. Specific to AM components (e.g. Risk Management) as identified elsewhere.	*Ongoing.*
AM Processes and Practices	10.2	Undertake competency assessment to ascertain skill set within the wider team and identify a process to fill skill and resource gaps.	*See 9.1. Ongoing training occurring*
AM Processes and Practices	10.3	Improvements to measurement systems to support ONRC and mandatory performance measures.	*Ongoing*
AM Processes and Practices	10.4	Data quality standards and methodology review	*Ongoing*
Plan Implementation	12.1	Review Improvement plan once LTP and NLTP adopted to prioritise projects with available resources.	*To occur in August 2018.*
Plan Implementation	12.3	Implement Business Case Development programme.	*Completed.*
Plan Implementation	12.4	Implement ONRC fully to meet NZTA requirements within SDC context.	*Completed. Some minor adjustments may still be needed.*
Plan Implementation	12.5	Review application of ISO55000 within SDC AMP context.	*ISO and IIMM now closely aligned, no action required.*

2018 – 2021

Section	IP Ref	Item	*Status 14/12/17*	*Further Action Proposed*
Introduction	2.5	Implement ONRC Transition Plan.	*Superseded by new REG guidance.*	*Remove.*
Introduction	2.6	Review comments on SDC hierarchy once ONRC fully implemented, reference District Plan hierarchy.	*Completed.*	*Remove.*
Strategy	3.0	Refer also Walking and cycling strategy and action plan.	*Completed.*	*Remove.*
Road Safety	5.2	Implement Recommendations in RISA Reports.	*Sufficiently covered by other methods. See IP 5.1.*	*None*
LoS	6.3	Revise section to include increased ONRC integration.	*Completed*	*None*
LoS	6.4	Establish methodologies for mandatory performance measurement.	*Completed*	*None*
LoS	6.5	Revise operational KPIs for next road maintenance contract.	*Completed*	*None*
Growth	7.3	MOT Travel Survey Partners - continuation of process.	*Superseded. No longer in the process.*	*None.*
Growth	7.7	Update this section and associated asset issues as CSM2 is established.	*Completed.*	*None.*
Lifecycle Management Strategy	9.204	Prepare asset information and management plan for bus shelters and any other Passenger Transport support infrastructure.	*Completed.*	*None.*
Lifecycle Management Strategy	9.205	Develop Extent of Network Maintenance Policy.	*Has not remained a priority, also affected by public access issues.*	*None.*
Lifecycle Management Strategy	9.206	Further revision of assets lives, consider stratified approach in line with ONRC groups.	*2014 review has informed renewal programme sufficiently. No further specific reviews proposed.*	*None.*
=Plan Implementation	12.3	Implement Business Case Development programme.	*Completed.*	*None.*
Plan Implementation	12.4	Implement ONRC fully to meet NZTA requirements within SDC context.	*Completed. Some minor adjustments may still be needed.*	*None.*
Plan Implementation	12.5	Review application of ISO55000 within SDC AMP context.	*ISO and IIMM now closely aligned, no action required.*	*None.*

2021 - 2024

IP Ref	Item	*Status*
2021_IP 2.6	Review comments on Council hierarchy once ONF fully implemented, reference District Plan hierarchy.	Not complete
2021_IP 3.8	Undertake delivery of service review (LGA s17A) prior to next maintenance contract.	
2021_IP 3.9	Update Procurement Strategy (associate timing with delivery of services review and next maintenance contract) – Currently happening.	Complete – assign to regular work programme
2021_IP3.11	Ensure Policies are consistent (e.g. R414 should be revoked and replaced in entirety by R 431)	Incomplete
2021_IP 4.1	Ensure ONRC length is the same as District Plan length. There is a very minor discrepancy at the moment.	Transport Analyst to address 2023/24
2021_IP 4.2	Review current ONRC hierarchy. Identify whether existing peer group classification is fit for purpose given ADT growth.	Incomplete as no guidance from NZTA
2021_IP 5.3	Formalise protocols for Safety Audits	Complete – remove from IP
2021_IP 7.6	Continue to monitor Lincoln HUB proposal and impact on Transportation network	No longer relevant
2021_IP 7.7	Update this section and associated asset issues as CSM2 is established (Ongoing)	Transport Analyst to address 2023/24
2021_IP 8.2	Participate in Regional/Greater Christchurch Risk Management process development.	Ongoing – remove from IP
2021_IP 8.3	Integrate Regional/Greater Christchurch Risk Management process into Council practices including this AMP.	Ongoing – remove from IP
2021_IP 8.4	Prepare and undertake periodic reviews of the risk register, including reviews by the Council; this could usefully be done in the early stages of the regular AMP Review processes.	Ongoing – remove from IP
2021_IP 8.5	Initiate training of internal staff and external contractors relating to the above and the on-going population of the risk register.	Incomplete
2021_IP 8.7	Review funding and emergency reserve required for future events (noting this will not be funded in the rapid growth period).	Incomplete
2021_IP 8.9	Review this AMP and Transportation Activity Procedures in line with any amendments to Utilities Lifelines – Response Plan (as per ONRC). This will be incorporated with an update of the "Utilities Lifelines – Response Plan".	In process – keep in IP

IP Ref	Item	*Status*
2021_IP 8.10	Complete network bridge assessment for 50MAX and HPMV compliance, identify any isolated areas and propose preferred routes or upgrade works.	Complete – remove from IP
2021_IP 10.1	Facilitate Staff training opportunities including: Introduction to new AMP, AM Generally, Specific to AM components (e.g. Risk Management) as identified elsewhere	Incomplete
2021_IP 10.2	Undertake competency assessment to ascertain skill set within the wider team and identify a process to fill skill and resource gaps	Incomplete
2021_IP 10.3	Improvements to measurement systems to support ONRC and mandatory performance measures.	In process – keep in IP
2021_IP 10.4	Data quality standards and methodology review (2024 AMDS implementation)	25/25 keep in IP
2024_IP 10.5	Document data management processes as they come in-house	Incomplete
2021_IP 12.6	Review Improvement plan once LTP and NLTP adopted to prioritise projects with available resources.	Included in new IP process

12.3 Other Work Completed

Improvements to the bridge data and management regime has benefited operations as well as the development of this plan.

Implementation of the One Network Road Classification performance measures is ongoing.

The Land Use Recovery Plan, establishment of inland ports, extension of the Christchurch Southern Motorway and township Masterplan have all required considerable development and knowledge growth.

12.4 Improvement Programme

The objectives of the improvement programme are:

- Alignment to Council's Activity Management Policy.
- Programme to match funding available.
- Prioritisation of improvements.
- Achievability.

The development of this Plan is based on the best available, most current information and the knowledge of Council Staff. This Activity Management Plan will be the subject of annual updating and incremental improvement over time.

The continued monitoring of performance measures and on-going analysis of results will result in:

- Savings in expenditure through lifecycle optimisation.
- Service levels actively monitored and reported on.
- Management of risk and control of failures.
- Measurement of Activity Management Plan Effectiveness.

12.4.1 AM Improvement Process

The Activity Management Plan has been prepared using information from this Asset Management Plan, and the current asset valuation.

On-going monitoring, review and updating to improve the quality of AM planning and robustness of the financial projections will continue to be an important feature of the AMP process.

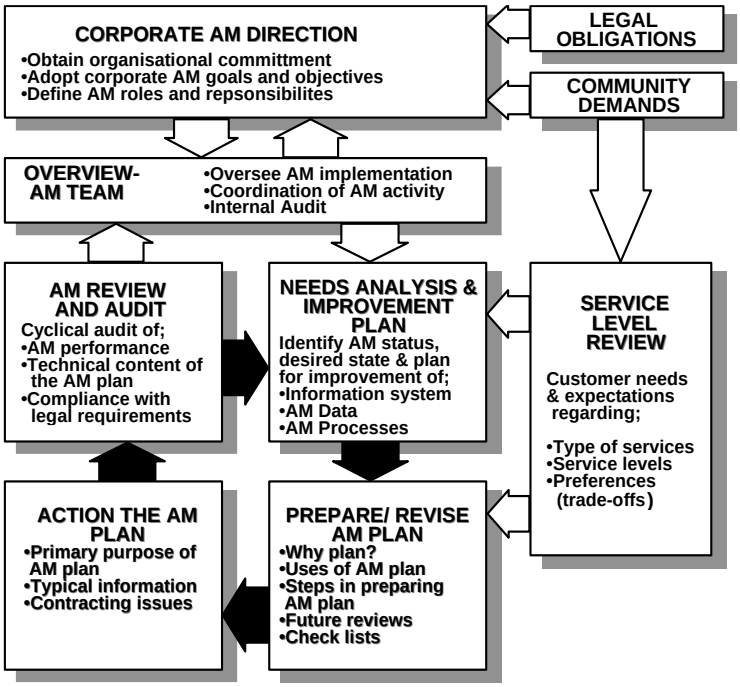
Figure 12-1 below illustrates the process of using and developing the AM plan.

The AM improvement process involves:

- A continual cycle of Activity Management Plan monitoring, review, revision and audit to improve the effectiveness of AM plan outputs and compliance with audit criteria, legal requirements and good practice.
- Definition of service standards reflecting community desires through public consultation (service level review). The AM plan is used to identify service standard options and costs, and the delivery of the service standards adopted is a key objective of AM planning.
- A corporate AM co-ordination role by an AM Team, which guides and audits the development of AM plans within the framework of Council's strategic direction.

These steps are outlined in Figure 12-1 below:

Figure 12-1: Flow Chart for Developing and Using AM Plans



12.4.2 Peer Review of 2021 AMP

An independent review of the 2021 AMP was undertaken by IAM Consulting Ltd in 2023. There is an extensive list of improvement opportunities.

Those that affect compliance are noted in table 12.2 below.

12.4.3 Funding AM Improvements

The improvements identified relate to practices and processes used within Council.

While some improvements will occur through improvements to the delivery of services (e.g. improved data collection processes within maintenance contracts) others are specific to the AM function. In the past, improvements to AM planning and AM plans aligns with NZTA's Tactical Planning work category (WC 003).

This work has now been incorporated into work category 151.

12.4.4 AM Improvement Programme

AM improvement needs are identified at the end of each Section.

The main drivers for the timing and prioritisation of AM improvement tasks over the next 2 -3 years are the needs:

- To improve the reliability of asset information in order to meet the requirements of the Local Government Act 2002, in particular with respect to input to future LTPs.
- To implement the ONRC as directed by NZTA into the SDC's context.
- To integrate risk management concepts into asset management life-cycle tactics.
- To progress the development of optimized decision-making tools and processes, and use the results in AM planning (e.g. dTIMS).
- To develop a Business Case approach.
- For a continual and on-going focus on using AM as a service and business improvement tool.

The prioritised Asset Management Improvement Programme follows. In summary, the planned activities are as follows:

Table 12-1: Key to Improvement Action Priorities

Priority	Name	Relative Urgency
1	High / Very High / Urgent / ASAP	Within the first financial year of the LTP.
2	Medium / Routine	Within the first or second financial year of the LTP.
3	Low	Within the first three financial year of the LTP.
4	Good Idea	Beyond the first six financial year of the LTP.

Occasionally, the term "On Occurrence" may also be used. It is followed by a description of the event that triggered the need. The resource requirements associated with this improvement plan will be identified when the improvement tasks are defined and scoped. The combined Improvement Plan follows.

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Table 12-2: Independent Review by IAM

Requirement	Assessment	IAM Recommendation/Suggestion
LGA Schedule 10 Clause 3:	Capital expenditure for groups of activities (Non-compliant)	Suggestion Demonstrate the differentiation of capital expenditure required to accommodate growth and to improve the service levels for the activity by each year over the 10-year period.
LGA Schedule 10 Clause 4	Statement of service provision (While considered compliant, suggestions are provided)	Recommendation: 1. Consider adding some specific information to the performance measures to improve clarity: • The specified service standards under each measure (wherever relevant), i.e., condition of footpaths, time frame for responding, etc. • Current performance for the road safety measure is recorded as "4 fatal and 14 serious". This should be described as a reduction by 4 fatal and 14 serious incidents to make clear. Suggestion: 1. Provide a summary within the financial section explaining any significant changes of the expenditure forecasts and how these contribute to achieving service level targets
LGA Schedule 10 Clause 5	Funding impact statement for groups of activities (Partially compliant)	Recommendations: 1. Create a sub-section in section 11 Financial Summary, to include a comparison of LTP budgets with AcMP expenditure programmes. Explain any gaps between them with consequences and management strategies (trade-offs, etc). It should be noted that LTP budgets are inclusive of inflation adjustments. 2. Include the matrix that shows funding sources with targeted proportions of funding for operations and capital expenditure as shown in the Revenue and Financing Policy to give a clear view of funding.
LGA Schedule 10 Clause 9	Financial strategy and infrastructure strategy (While considered compliant, suggestions are provided)	Suggestion: 1. Provide summary information of the Council's Financial Strategy relating to Transportation
LGA Schedule 10 Clause 10	Revenue and financing policy (Partially compliant)	Recommendation: 1. Provide a summary of elements from the Revenue and Financing Policy which are of relevance to the activity, i.e., limitations of different funding sources, borrowing caps, etc.
LGA Schedule 10 Clause 11	Significance and engagement policy (While considered compliant, suggestions are provided)	Suggestion: 1. Remove section 6.4.4 which describes the former Public Consultation Policy (C301) as this is superseded by the Significance and Engagement Policy.
LGA Schedule 10 Clause 13	Financial statements for previous year (While considered compliant, suggestions are provided)	Suggestion: 1. Include planned and actual expenditure of previous year to Year 1 in capital, renewal, maintenance and operations forecasts to put Year 1 into context.
LGA Schedule 10 Clause 17	Significant forecasting assumptions (While considered compliant, suggestions are provided)	Suggestions: 1. Include possible risks and uncertainty levels of the assumptions listed in Section 11.3. 2. The AcMP includes the confidence level of asset data. Include also the confidence level of other data used in developing expenditure forecasts such as population growth and cost data. 3. Incorporate a sensitivity assessment for expenditure forecasts utilising data confidence levels and the impacts of uncertainty of the assumptions.
(Financial Reporting and Prudence) Regulations 2014 Clause 5	Information to be disclosed in financial statements (Partially compliant)	Recommendation: 1. Include depreciation projections indicating expected changes over the time due to asset growth, etc.
Financial Reporting and Prudence) Regulations 2014 Clause 6	Information about core assets to be disclosed in financial statements in annual report (Non-compliant)	Recommendation: 1. Include depreciated replacement cost of assets in Table 9-2 – valuation summary.
Financial Reporting and Prudence) Regulations 2014 Clause 9	Local authority must disclose performance in relation to benchmarks (Not compliant)	Recommendations: 1. Include a graph showing the ratio between revenue and expenditure for each year over the next 10-year period. 2. Include a graph showing the ratio between depreciation and annual renewals for each year over the next 10, and ideally 30, year period.
Good Industry Practice	Alignment	1. Section 6.1, Table 6-2, 6-3 and 6-6 demonstrate the Transport activity's contribution to the Community Outcomes. Review and update these tables ensuring consistency with the LTP and strategic business case documents. 2. Develop an Asset Management Strategy for the Council, which is consistent with the principles stated in the Asset Management Policy.
	Service statements and Levels of Service	Update 2024 AcMP levels of service section to include ONF integration process planned for 2021 – 2024 (improvement plan item 6.5).

Requirement	Assessment	IAM Recommendation/Suggestion
Good Industry Practice continued	Future Demand	1. Section 6 describes operational strategies and investment strategies to meet the predicted demand. Consider incorporating a demand management strategy that describes reducing or shifting demand into off-peak times to support meeting future demand. 2. Ensure 'Insufficient management of traffic demand' planning risk is sufficiently monitored ensuring the reliability of demand management initiatives. 3. Consider moving Section 7.7.8 which describes GIS tool supporting project planning to Section 9.6 Asset Improvement and Development Plan. 4. Update population growth predictions and other demand factors analysis using latest information.
	Risk	1. Define what is considered as 'risk' within this AcMP relating to the activity objectives. This would help setting the boundary and having a consistent approach. 2. Include only the key risks in this section and provide the risk register as an appendix. Review and update 'Effectiveness and implementation of existing controls' field reflecting further treatment requirements. 3. Provide a summary of insurance policy for the activity explaining how this helps to manage financial risks.
	Critical assets	1. Carry out a detailed criticality assessment for transport assets as identified in the improvement plan and use asset criticality ratings for developing prioritised maintenance and renewal programmes.
	Justification for maintenance programmes	1. Provide separate expenditure programmes for renewals and operations and maintenance to improve clarity. Provide a complete picture of operations and maintenance costs of the activity by adding corporate overheads, staff costs, emergency management costs, etc. 2. Briefly explain the rationale for the maintenance regime demonstrated in Table 9.10.10, i.e., proactive maintenance for high criticality assets and reactive maintenance for low criticality assets. 3. Explain how operations and maintenance programmes are accommodating changes over the planning period i.e., O&M requirements for new assets (council built or vested), additional maintenance requirements due to increased demand, aging assets, climate change impacts.
	Justification for asset renewal programme	1. Demonstrate the renewal planning approach graphically to give a clear view combining all the elements. 2. Consider expanding the comparison of annual depreciation with resurfacing and rehabilitation costs for a longer period (i.e., 50-year period for pavement rehabilitation) to get a realistic view. 3. Consider filling the information gaps for some work categories in part three of the programme business case giving priority to critical work categories.
	Justification for asset development programme	1. Summarise the decision-making process for capital works projects and programme development and prioritisation. Adding a diagram connecting the elements of the process would be appropriate. Consider moving information related to the GIS process referred to in Section 7.7.8 Project Integration to Section 9.6. 2. Provide differentiation of subsidised and unsubsidised new improvements expenditure in the forecast as provided in strategic business case document.
	Data	1. Assess confidence levels and completeness of data sets required for critical decision making and business processes; that sit outside the RAMM system i.e., customer service data, financial data, etc. 2. Consider prioritising the data improvement plan based on asset criticality (once criticality assessment is completed as identified in the improvement plan) balancing costs and benefits.
	Confidence in programmes	Recommendations relevant to this section are included under Clause 17 of LGA Schedule 10.
	Performance Measurement	1. Append a more detailed set of performance measures covering other asset classes and demonstrating how customer measures and technical measures are set up to provide a complete picture of performance monitoring of the activity. 2. Develop an appropriate performance monitoring process with documented measuring methodologies, definitions of terms used in measures, monitoring frequencies, responsibilities and report formats.
	Sustainable Funding	1. Below are the recommendations related to expenditure forecasts provided in the Financial section to give a clear picture of expenditure requirements: a. Summary of estimated total expenditure required to deliver the services (consolidated financial forecast) related to the activity. b. A separate expenditure forecast for each expenditure category – operations and maintenance, renewals and new improvement with details for minimum 3 years (ideally 10 years) and summary level for at least 30 years. c. Provide a full picture of all the operational costs including staff cost, overheads, emergency management, etc. d. Differentiation of subsidised and unsubsidised expenditure, this is demonstrated in the business case document. e. Differentiation of new improvement works related to service level improvements and to accommodate growth (as recommended under Clause 3, Schedule 10, LGA). f. Figure 11.4 demonstrates the CAPEX programme. It indicates fairly low annual expenditure in the second and third decades of the period. Sufficient information to define all the capex requirements may not be available for the later years. It would be appropriate to include high level estimates
	Improvement Planning	1. Include only the progress of the 2018 improvement plan (the previous improvement plan) as including prior to 2018 information does not add any value but makes the section unnecessarily longer. 2. The following recommendations would support making the improvement plan more robust: a. Consider collating improvement actions from the previous improvement plan (items yet to be completed), improvement items list in each AcMP section, various asset management review reports and based on staff knowledge. b. Review and reprioritise based on the availability of resources and current requirements. c. Indicate priority levels, resource requirements, anticipated timing and responsibility (who / which team is responsible for the implementation) for each improvement action. 3. Summarise the improvement plan monitoring process indicating who is responsible for the process, reporting frequency and reporting format. 4. Develop the 2021 improvement plan by combining new improvement actions with the 2018 improvement actions yet to be completed, review and reprioritise them based on availability of resources and current requirements. In addition to the improvement actions identified in each AcMP section, consider adding any improvements recommended in various recent asset management review reports and identified through staff knowledge.
	Readability	1. Develop an organisational level Asset Management Strategy to include strategic level information. This helps the AcMP to focus mainly on activity related information. 2. Present the information in the AcMP in a sequential manner with a future focus to communicate key messages effectively. 3. Incorporating outputs/outcomes of various assessments is essential in developing the AcMP. Include only the relevant information in the AcMP and provide reference to the full reports for the benefit of technical staff. Append the reports linking them to the main document if they are helpful for audit processes. 4. Demonstrate key messages in a graphical or tabular form wherever appropriate to improve readability. 5. Use a non-technical writing style (mainly for the executive summary) suitable for communicating with elected members, senior managers, and the community.

12.5 AMP Review and Monitoring

This AMP will continue to be developed over time to incorporate further advanced asset management techniques and also incorporate the Business Case Approach.

It is anticipated that the sustainability themes introduced in this Plan will be further tested and developed with an on-going focus on planning for climate change, managing greenhouse gas emissions and improving energy efficiency. A future review of charging mechanisms may be warranted to ensure inter and intra-generational equity.

This AMP is a "living document" and will be reviewed periodically over the LTP period and as circumstances change. The AMP will be comprehensively reviewed at intervals of not less than three years prior to Long Term Plan consultation. Each review will be completed in line with whole of Council's LTP delivery plans.

12.6 Issues

As this section related to the Improvement Plan itself, few improvement plan items have arisen.

Improvement Plan Items

IP 12.6 Review Improvement plan once LTP and NLTP adopted to prioritise projects with available resources.

13.0 APPENDICES

13.1 Selwyn District Council HPVM routes (Permit Guidance)

Do Not Cross Selwyn River Bridge on Hororata Rd

If any of the following roads are listed on your permit, please attach **Selwyn DC's .pdf of Restricted Bridges when you issue the permit**: (as all of these roads have a restricted bridge)

- Aitkens Rd
- Court Rd
- Craigieburn Rd
- Flagpole Rd
- Harper Rd
- Hartnells Rd
- Hororata Rd
- Mt White Rd
- Sleemans Rd
- Waianiwaniwa Rd
- Whitecliffs Rd

Izone Business Park including the following roads:

- Hoskyns Rd from SH1 to Maddisons Rd, Jones Rd from Hoskyns Rd to Railway Rd, Railway Rd from Jones Rd for 500m, Link Dr, Hynds Dr, Stoneleigh Dr, Hannover Pl, Detroit Dr, Izone Dr, Westland Pl , Radius Loop, Illinois Dr, Baltimore Dr, Centrum La, John Morten Pl, Pereita Dr, Henare Dr, Cockburn La, George Holmes Rd

IPort Business Park including the following roads:

- Hoskyns Rd from SH1 to Maddisons Rd, Jones Rd from Hoskyns Rd up to LPC Midland Port accessway, IPort Drive, Container Dr, Transportation Dr, Freight Dr, Link Dr, Factory Dr, Pallet Dr, Cargo Dr

- SH1, Rolleston – Hoskyns Rd – SH73, Kirwee
- SH73, Aylesbury – Hoskyns Rd to Ansons Rd
- SH1, Norwood - Telegraph Rd – Two Chain Rd – 1044 Two Chain Rd (South Pacific Meats Malvern) – Two Chain Rd - Reynolds Rd – Burdons Rd – Aylesbury Rd – SH1, Burnham
- Railway Rd to SH73 via Izone Business Park using Detroit Dr
- Jones Rd, Rolleston from Two Chain Rd to Dawsons Rd, Dawsons Rd to SH1
- SH1, Rolleston - Hoskyns Rd – Jones Rd to Lyttelton Inland Port access road
- SH1, Rolleston - Hoskyns Rd – Jones Rd – Two Chain Rd - Wards Rd – Aylesbury Rd – Bealey Rd – SH73, Kirwee
- SH1, Rolleston - Hoskyns Rd – Link Dr - Detroit Dr – Railway Rd – Bealey Rd - SH73, Kirwee

- SH73, Aylesbury – Bealey Rd – Aylesbury Rd – SH1, Burnham
- SH73, Darfield – Bray St – Telegraph Rd – SH1, Burnham
- SH73, Waddington – Waimakariri Gorge Rd to and including Waimakariri Gorge Bridge (Selwyn District Council Boundary)
- SH73, Waddington – Waimakariri Gorge Rd – Old West Coast Rd – Christchurch CC boundary
- SH77, Coalgate, Bridge St – Coaltrack Rd – Telegraph Rd – SH1, Burnham
- SH1, Burnham - Aylesbury Rd – Wards Rd – Bealey Rd to Telegraph Rd
- SH1, Burnham - Burnham Rd - Ellesmere Junction Rd - Gerald St - Edward St - Lincoln-Tai Tapu Rd – SH75, Tai Tapu (requires link road for SH75 from Tai Tapu to Akaroa)
- Springs Rd, (Boundary with Christchurch CC) - Gerald St - Edward St - Lincoln-Tai Tapu Rd – SH75, Tai Tapu (requires link road for SH75 from Tai Tapu to Akaroa via CCC)
- SH73, Kirwee – Bealey Rd – Hororata Rd – Downs Rd to SH77
- SH73, Waddington – Deans Rd – SH77, Coalgate
- SH73, Darfield – Homebush Rd – Deans Rd - SH77, Coalgate

- SH77, Coalgate – Bridge St – Coaltrack Rd – Bealey Rd – SH73, Kirwee (Do Not Cross Selwyn River Bridge – Hororata Rd) (requires link road for SH77 from Yeomans Rd to Zig Zag Rd)
- SH73, Kirwee – Bealey Rd – Hororata Rd up to Plantation Rd (Do Not Cross Selwyn River Bridge – Hororata Rd)
- Hororata Rd from Downs Rd to Bealey Rd only - Do Not Cross Selwyn River Bridge (near Coalgate)
- Sleemans Rd, Hororata (Do Not Cross posted bridge on Sleemans Rd)
- SH1, Burnham - Burnham Rd - Ellesmere Junction Rd - Gerald St - Edward St - Lincoln-Tai Tapu Rd up to SH75, Tai Tapu
- SH1, Burnham - Burnham Rd - Ellesmere Junction Rd – Springs Rd to Christchurch CC boundary
- SH1, Burnham - Burnham Rd - Ellesmere Junction Rd - Leeston Rd – Station St – Leeston Seeds – Station St – Leeston and Lake Rd – High St – Southbridge Leeston Rd – High St (Southbridge)
- Shands Rd (Boundary with Christchurch CC), Marshs Rd South – Ellesmere Junction Rd – Leeston Rd – Station St – Leeston Seeds – Station St – Leeston and Lake Rd – High St – Southbridge Leeston Rd – High St (Southbridge) – St John St – Hamilton Seeds, Southbridge
- Shands Rd (Boundary with Christchurch CC), Marshs Rd South – Ellesmere Junction Rd – Gerald St - Edward St - Lincoln-Tai Tapu Rd up to SH75, Tai Tapu

- SH1, Bankside – Main Rakaia Rd – Southbridge Rakaia Rd – Feredays Rd – Willis Rd – High St (Southbridge) – Wilson St
- Southbridge Leeston Rd from High St (Southbridge) to High St (Leeston)
- SH1, Templeton – Marshs Rd – Shands Rd – Marshs Rd to Springs Rd only
- Shands Rd (Boundary with Christchurch CC), Marshs Rd South – Marshs Rd to Springs Rd only
- Shands Rd (Boundary with Christchurch CC) - SH76 including on and off ramps
- Shands Rd (Boundary with Christchurch CC), Marshs Rd South – Ellesmere Junction Rd – Leeston Rd – Station St – Leeston and Lake Rd – High St – Southbridge Leeston Rd
- SH1, Bankside – Main Rakaia Rd – Southbridge Rakaia Rd – Feredays Rd – High St – Leeston and Lake Rd – Station St - Leeston Rd – Ellesmere Junction Rd – Shands Rd to Marshs Rd (Christchurch CC Boundary)
- SH1, Bankside – Main Rakaia Rd – Southbridge Rakaia Rd – Feredays Rd – High St – Leeston and Lake Rd – Station St - Leeston Rd – Ellesmere Junction Rd – Gerald St - Edward St - Lincoln-Tai Tapu Rd up to SH75, Tai Tapu
- High St (Oxford) from Inland Scenic Route 72 to Ashley Gorge Rd – Sales Rd – Powells Rd – Ashley Gorge Rd – Birch Hills Rd – Fishers Rd – Hodgson Rd – Loburn Whterock Rd – Dixons Rd – Cones Rd to Milton Ave
- Trents Rd from Christchurch CC Boundary – Blakes Rd to end of road.
- Trents Rd from Christchurch CC Boundary – Shands Rd to Blakes Rd
- Trents Rd from Christchurch CC Boundary – Shands Rd to Marshs Rd (Christchurch CC Boundary)
- SH1, Dunsandel – Heslerton Rd – 1028 Heslerton Rd (Synlait Milk Ltd)
- SH1, Rolleston – Waterholes Rd – Hamptons Rd – Waterholes Rd to Ellesmere Junction Rd
- SH1 (including on & off ramps), Rolleston – Weedons Rd – Selwyn Rd – Waterholes Rd – Larcombs Rd (Larcombs Rd no longer connects to SH1)
- Weedons Rd from SH1 (including on & off ramps) to Selwyn Rd, Selwyn Rd from Weedons Rd to Waterholes Rd and Waterholes Rd
- Berketts Rd from SH1 to Larcombs Rd, Larcombs Rd from Berketts Rd to Waterholes Rd and Waterholes Rd
- Sleemans Rd, Hororata (Do Not Cross posted bridge on Sleemans Rd)
- Weedons Ross Rd from SH1 (including off and on ramps) to SH73
- SH1 including off and on ramps, Rolleston – Weedons Rd – Weedons Ross Rd to Jones Rd
- Weedons Road from Ellesmere Junction Rd to SH1 (including off and on ramps)
- SH1, Templeton – Dawsons Rd – Jones Rd – Curraghs Rd – Robinsons Rd
- SH1, Rolleston – Hoskyns Rd – Jones Rd – Curraghs Rd – Robinsons Rd
  Note: No Access to SH1 via Robinsons Rd (SH1 overbridge only)

- SH75, Tai Tapu – Old Tai Tapu Rd to Christchurch CC boundary
- Coal Mine – Bush Gully Rd – Malvern Hills Rd – Bridge St – Coaltrack Rd – Beattys Rd – SH77
  Do Not Cross Selwyn River Bridge locate on Hororata Rd

- SH73, Sheffield – Malvern Hills Rd – Bush Gully Rd – Coal Mine
- SH73, Waddington – Waimakariri Gorge Rd – Old West Coast Rd to Chattertons Rd (CCC Boundary)
- Browns Rd, Dunsandel – Leeston Dunsandel Rd

Auchenflower Rd is not approved route for vehicles carting coal (generally General Bulk vehicles)

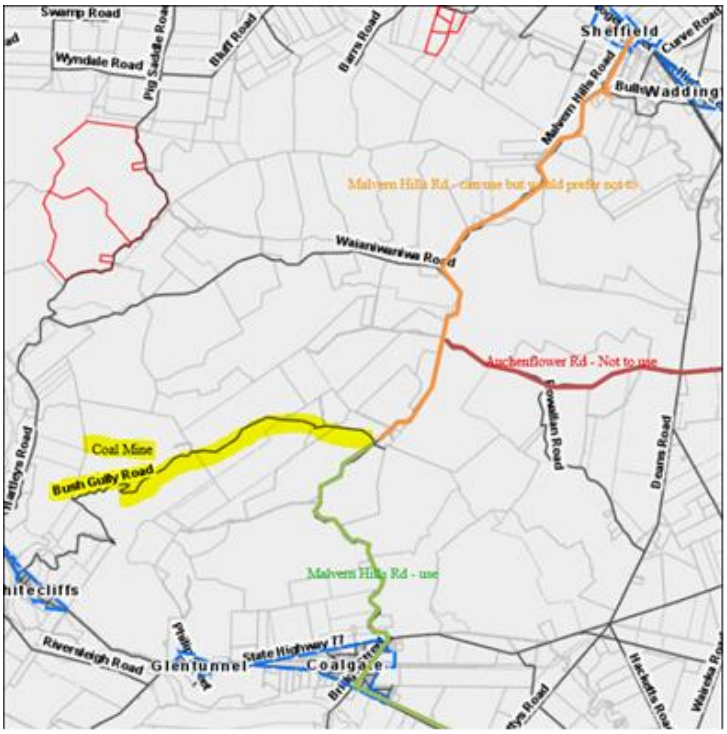
- SH73, Darfield – Auchenflower Rd – Malvern Hills Rd – Bush Gully Rd – Coal Mine
  This route is NOT APPROVED for HPMV vehicles carting coal General Bulk vehicles.

- SH73, Sheffield – Malvern Hills Rd – Bush Gully Rd – Coal Mine
  This route is NOT APPROVED for HPMV vehicles carting coal General Bulk vehicles.

- SH77, Coalgate – Malvern Hills Rd – Bush Gully Rd – Coal Mine
  Use the above route if vehicle is carting coal

- Bush Gully Rd from Coal Mine – Malvern Hills Rd - (cross SH77) – Bridge St – Coaltrack Rd – Bealey Rd – Telegraph Rd – Bray St to SH73

NOTE: Malvern Hills Rd between Bush Gully Rd (orange line below) and SH73 can be affected by really strong winds so if applicant asks for Malvern Hills Rd from SH73 list it but also list the above route so that they have both options.



Entire Length for the Following Roads (only use this list if client requests full length roads)

Name of Road	Location
Adams Rd	Greendale
Addingtons Rd	Darfield
Aitkens Rd	Leeston
Alexanders Rd	Southbridge
Andersons Rd	Leeston
Andrews Rd	Lincoln
Ansons Rd	Kirwee
Ardlui Rd	Bankside
Auchenflower Rd	Darfield
Barrs Rd	Sheffield
Barrys Rd	Charing Cross
Beattys Rd	Darfield

Bethels Rd	Springston
Birchs Rd	Lincoln
Bleakhouse Rd	Darfield
Bluff Rd	Sheffield
Boultons Rd	Darfield
Boundary Creek Rd	Leeston
Boundary Rd	Lincoln
Branch Drain Rd	Leeston
Breadings Rd	Bankside
Bridge Road	Greendale
Brookside & Irwell Rd	Leeston
Brookside Rd	Springston
Browns Rd	Dunsandel
Buckleys Rd	Burnham
Burdons Rd	Burnham
Burnham Rd	Burnham
Burnham School Rd	Burnham
Burns Rd	Bankside
Burts Rd	Southbridge
Bush Gully Rd	Glentunnel
Calders Rd	West Melton
Caldwells Rd	Leeston
Cardale St	Darfield
Chattertons Rd	West Melton
Clarks Rd	Lincoln
Clintons Rd	Darfield
Coaltrack Rd	Dunsandel
Coleridge Rd	Windwhistle
College Rd	Bankside
Collins Rd	Lincoln

Container Dr	Rolleston
Cooks Rd	Darfield
Corbetts Rd	Springston
Cordys Rd	Hororata
Courtenay Rd	Kirwee
Cowans Rd	Leeston
Coxs Rd	Springfield
Creyke Rd	Darfield
Cryers Rd	Southbridge
Cullens Rd	Darfield
Curraghs Rd	Rolleston
Dalethorpe Rd	Malvern Hills
Davidsons Rd	Lincoln
Dawsons Rd	Templeton
Days Rd	Springston
Derretts Rd	Hororata
Dickies Rd	Leeston
Domain Rd	Springfield
Downs Rd	Hororata
Drain Road	Doyleston
Dunns Crossing Rd	Rolleston
Dunsandel & Brookside Rd	Leeston
Dunsandel Rd	Hororata
East Maddison Rd	Springston
Ellesmere Junction Rd	Springston
Ellesmere Rd	Lincoln
Elmhurst Rd	Darfield
Embankment Rd	Lincoln
Essendon Rd	Darfield
Feredays Rd	Southbridge

Fergusons Rd	Springfield
Finlays Rd	West Melton
Frasers Rd	Bankside
Fyvie Rd	Bankside
Gales Rd	Bankside
Geddes Rd	Lincoln
Gilmours Rd	Lincoln
Glasseys Rd	Southbridge
Gordon Street	Southbridge
Goulds Rd	Rolleston
Grange Rd	Burnham
Greendale Rd	Greendale
Greenpark Rd	Lincoln
Hacketts Rd	Darfield
Haldon Rd	Hororata
Halkett Rd	West Melton
Hamptons Rd	Prebbleton
Hanmer Rd	Leeston
Harmans Rd	Leeston
Hawkins Rd	Hororata
Hayes Rd	Kirwee
Heslerton Rd	Dunsandel
High St	Southbridge
High Stt	Leeston
Highfield Rd	Charing Cross
Hollands Rd	Greendale
Homestead Rd	Lake Coleridge
Horndon St	Darfield
Hororata Dunsandel Rd	Dunsandel
Hudsons Rd	Lincoln

Hunters Rd	Dunsandel
Irvines Rd	Dunsandel
Irwell Rakaia Rd	Leeston
Jollies Rd	Southbridge
Keens Rd	Springfield
Kerrs Rd	Burnham
Kimberley Rd	Darfield
Kings Rd	Leeston
Kivers Rd	Burnham
Knights Rd	Rolleston
Knyvetts Rd	Southbridge
Kowai Rd	Springfield
Lake Rd South	Leeston
Leaches Rd	Windwhistle
Leadleys Rd	Prebbleton
Leeston and Lake Rd	Leeston
Leeston Dunsandel Rd	Leeston
Leeston Rd	Leeston
Lincoln Tai Tapu Rd	Lincoln
Lochheads Rd	Leeston
Lyndon Rd	Springfield
Maddison Rd	Templeton
Main Rakaia Rd	Southbridge
Malvern Hills Rd	Sheffield
Manse Rd	Leeston
Mathias St	Darfield
McCurdys Rd	Sheffield
McLaughlins Rd	Darfield
Mcwhas Rd	Dunsandel
Michaels Rd	Tai Tapu

Midhurst Rd	Charing Cross
Miles Rd	Darfield
Milnes Rd	Hororata
Milton Rd	Greendale
Minchins Rd	Sheffield
Mitchells Rd	Bankside
Morgans Rd	Hororata
Neills Rd	Lincoln
Newtons Rd	Rolleston
North Rakaia Rd	Bankside
Norwood Rd	Burnham
Old South Rd	Dunsandel
Old Tai Tapu Rd	Tai Tapu
Painters Rd	Kirwee
Pall Mall St	Springfield
Pannetts Rd	Springston
Parkins Rd	Bankside
Pearces Rd	West Melton
Pig saddle Rd	Malvern Hills
Pinegrove Rd	Sheffield
Plantation Rd	Hororata
Pocock Rd	Springfield
Poole's Rd	Leeston
Powells Rd	Springston
Prossers Rd	Leeston/Doyleston
Railway Rd	Dunsandel
Rakaia Selwyn Rd	Leeston
Rakaia Terrace Rd	Hororata
Rattletrack Rd	Springston
Reynolds Rd	Burnham

Ridge Rd	Motukarara
Ridgens Rd	Greendale
River Rd	Lincoln
Robinsons Rd	Prebbleton
Rockwood Rd	Hororata
Sandersons Rd	Leeston
Sandy Knolls Rd	West Melton
Saunders Rd	Hororata
Selwyn Lake Rd	Rolleston
Selwyn Rd	Rolleston
Shands Rd	Templeton
Sharlands Rd	Dunsandel
Shipleys Rd	Greendale
Smythes Rd	Brookside
South Two Chain Rd	Dunsandel
Southbridge Dunsandel Rd	Leeston
Southbridge Leeston Rd	Leeston
Southbridge Rakaia Rd	Southbridge
Southbridge-Sedgemere Rd	Leeston
Springfield Rd	Springfield
Springs Rd	Lincoln
Springston Rolleston Rd	Rolleston
Station Rd	Kirwee
Station St	Coalgate
Steeles Rd	Hororata
Stephens Rd	Irwell
Stewarts Rd	Leeston
Stoneleigh Dr	Rolleston
Stranges Rd	Greendale
Strathmore Rd	Dunsandel

Struie Rd	Hororata
Substation Rd	Hororata
Swamp Rd	Springston
Swamp Rd	Brookside
Tancreds Rd	Lincoln
Te Pirita Rd	Bankside
Terrace Rd	Bankside
The Lake Rd	Leeston
Thomsons Rd	Burnham
Thwaites Rd	Hororata
Tramway Rd	Dunsandel
Tramway Rd	Kirwee
Transportation Dr	Rolleston
Two Chain Rd	Burnham
Volckman Rd	Leeston
Wabys Rd	Southbridge
Waikimihia Rd	Southbridge
Waireka Rd	Darfield
Walkers Rd	Rolleston
Wards Rd	Charing Cross
Warrens Rd	Greendale
Weavers Rd	Bankside
Weedons Rd	Rolleston
Weedons Ross Rd	West Melton
West Melton Rd	West Melton
Westenras Rd	Dunsandel
Westland Pl	Rolleston
Willis Rd	Southbridge
Woodlands Rd	Sheffield
Wrights Rd	Bankside

Wrights Rd	Sheffield
Yeomans Rd	Darfield

Heavy Vehicle Bypass for Leeston: Leeston Rd, Leeston – Station St – Leeston and Lake Rd – High St (no access to High St between Cunningham St & Market St)